Management in the time
of networks, cross-cultural
activities and flexible organizations

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Preface

Scientific management in Central Europe can be divided into three periods of its historical development. The first period is from the beginning of the twentieth century until the outbreak of World War II. At that time, scientific management in Central Europe was in tune with world trends and was focused on absorbing the surplus of technological supply over its utilization capacity by available labor resources. The primacy of technology over social relations has forced cultural changes and created a new image of industrial society. The main focus of management considerations were the processes of harmonizing staff productivity with the efficiency of technical devices. The similarity can be seen in the extensive machine specialization and accompanying specialization of employees. Reducing complexity of activities and simplifying work has increased productivity, but also increased the number of contractors. Its consequence were changes in management systems, transforming their universal character into functional solutions. The dominance of German and French languages facilitated the flow of knowledge throughout Europe, including its Central part. In conclusion, in the discussed period, scientific management in Central Europe remained in the mainstream of European and global management science.

The second period of management development, from the end of World War II until 1989, was essentially a consequence of the dominance of collectivism with the decisive role of Communist parties. Centrally planned economies required unified management practices, which could be applied in any enterprise or organization. The two main trends of this period are the adaptive current, attempting to create rational solutions to irrational political guidelines. The area of main research areas was limited to operational management and production organization, and its upper limit was set at the level of tactical management. The second trend was of epistemological character and concerned praxeological and definitional considerations. The dominance of political doctrines over independent scientific research has led to the fact that management has become merely knowledge, not science in the sense of basic science.

The modern period of management development in Central Europe had several phases. The first was the beginnings of transformational processes, which forced managers to seek their own solutions, as any attempt to transfer practices from countries with stable socio-economic systems turned out to be impossible to use on foreign ground. The second phase is the period of intensification of international cooperation, creation of offshore representations, subsidiaries, factories and foreign companies that have brought their know-how, at the same time trying to adapt it to the conditions of host countries. The last phase was the period of accession of many post-communist countries to the European Union and adoption of the Community legal norms. Management in Central European countries has become an integral part of European governance, with all its advantages and disadvantages. Those cons are mainly the result of

global destabilization processes, transferring economic and political risks on other, especially smaller and weaker economic entities. A range of management solutions, such as lean management, outsourcing and agile manufacturing, pursuit their ultimate goal of maximizing enterprise flexibility guaranteed by effective minimization of their own risk. Achieving maximum flexibility in manufacturing processes with a minimum cost-competitive manufacturing cost has been made possible mostly because of the use of information technology.

This book gathered papers in, undoubtedly, the most up-to-date currents of contemporary management. The theoretical trend covers the following issues: the phenomenon of creating open process innovations, socio-economic inequality and systems approach, management challenges in a network economy, digital transformations of business models, theoretical dilemmas of human capital management or network organization as an emerging organization influence of ICT on transformations of management structures. Other papers have both, theoretical and practical approach. This group consists of the following papers: transfer of knowledge and technology from scientific institutes to the Polish economy, the role of certification units in management systems improvement, transition to the new edition of management system standard as an example of organizational change, the board model as a key issue in the Polish system of corporate governance, levels of hybridity in healthcare sector, introduction to ISO 26000, importance of intangible assets in the flexibility of selected small and medium enterprises - results of empirical research, the role of dynamic capabilities in developing of competitive advantage, flexible sales manager in international business – an attempt to assess the extent of executed tasks, variety of competences expected by business service center from university graduates, social responsibility of projects – the essence and results of survey, tangible monetary incentives - important job motivators of the Poles, autistic attitudes of Polish companies in the process of creating innovations, dental tourism in Hungary and Poland – cluster and business model perspective at selected locations, findings in the areas of technological entrepreneurship and creative clusters, strategic imagination of Polish managers, university mergers - Poland on the background of international trends, synergy in development strategies of business enterprises, determinants of employee turnover, the significance of water management within social and economic development, organizational culture in cross-cultural management, reporting sustainable development in the TSL industry and sustainable transport - an option or necessity.

We would like to thank all the authors of the papers on the following pages. We are convinced that the book will contribute to the exchange of points of view, discussion and integration of the Polish and Hungarian scientific communities. We would like to thank the staff of the Chair of International Management of the Cracow University of Economics, Piotr Sedlak, Ph.D., Monika Sady Ph.D., Dominika Guja M.Sc. for coordination of publishing process.

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The role of dynamic capabilities in developing of competitive advantage[1]

Introduction

Until recently, what was treated as unique resources in strategic management were financial, human and other resources, and their uniqueness was examined in quantitative terms. However, globalisation of economic processes has meant that, increasingly, the most important determinants of business success are certain qualitative variables. Elusive and immeasurable, these variables include competencies, dynamic capabilities and other intellectual resources within organisations.

The literature on the subject is in agreement in that it perceives dynamic capabilities as an essential construct in the research into how businesses achieve their competitive advantage. Writers also agree on the difference between the operational and strategic capabilities in terms of the value they add to change management processes.

Teece [1993] was the first scholar to provide a comprehensive analysis of the concept of dynamic capabilities. In his study, Teece posited that rather than being a mere set of essential organisational resources, an enterprise also includes certain mechanisms for developing and utilising new routines and capabilities which underlie effective management. The concept of dynamic capabilities was further developed by Teece and Pisano in 1994. The two scholars noted that treating a business firm as a set of resources fails to explain the relationship between organisational performance, seen in terms of responsiveness to change and the potential to innovate, and the ability of firms to coordinate their internal and external knowledge resources effectively. Teece and Pisano [1994] made clear the importance of analysing the shifting character of the environment and, in effect, of the key role of strategic management, which they presented as

[1] The project was financed by the funds from the National Science Centre granted based on the decision No. DEC-2013/11/B/HS4/00697

one that primarily consisted in adapting, integrating, and reconfiguring internal and external organizational behaviours, resources, and competences toward changing environment.

Teece and Pisano [1994] described dynamic capabilities of firms as their capacity to integrate, create and constantly transform internal and external knowledge resources and utilise those resources in rapidly changing environments. In their view, in order to sustain their competitive advantage, firms should renew their resources to the extent that reflects the changes in their environment. Dynamic capabilities are what ensures that the "renewal" processes are highly effective.

This study sets out to discuss the role of dynamic capabilities in developing competitive advantage. To achieve this aim, the paper starts with an outline of general relationships between dynamic capabilities and competitive advantage. It then moves on to describe the capacity to provide financing as the basis for developing key competences, and to present globalisation processes and ICT as determinants of strategic choices. Finally, the study presents an outline of a strategy based on key competencies and dynamic capabilities of firms.

Dynamic capabilities and competitive advantage

Numerous scholars have tried to determine the nature of dynamic capabilities. The definitions they have offered make it clear that dynamic capabilities are those organisational processes that aim to reconfigure the firm's resource structures. Zollo and Winter [2002] argue that organisations develop their dynamic capabilities internally, rather than obtaining them from the market. Teece, Pisano and Shuen [1997] indicate the existing relationships between the firm's dynamic capabilities and its competitive advantage. Griffith and Harvey [2001] offer a similar conclusion, emphasising the need for "global" dynamic capabilities through the creation of "difficult-to-imitate" combinations of resources which may provide a sustainable competitive advantage to a firm. Lee at al. [2002], too, posit that dynamic capabilities are meant to provide a source of competitive advantage in rapidly changing environments.

While other scholars, too, associate dynamic capabilities with competitive advantage, they note that the relationship is indirect. For example, Zott [2003] notes that dynamic capabilities are indirectly linked with sustainable firm performance. Helfat, on the other hand, separates dynamic capabilities from the firm's direct activities and takes the view that dynamic capabilities do not necessarily lead to competitive advantage [Helfat 2007]. He makes a point that over the period in which dynamic capabilities can transform a resource, the renewal does need to be valuable and will not lead to developing what are so-called VRIN (valuable, rare, imperfectly imitable and non-substitutable) resources. As such, dynamic capabilities may have a disadvantageous effect or their impact on competitive advantage may be short-lived.

Given that maintaining and supporting dynamic capabilities requires significant expenditure [Zollo and Winter 2002, 2003] and their impact may only be assessed in

hindsight, the value of dynamic capabilities becomes another important point of analysis. Zollo and Winter [2003] examine dynamic capabilities in terms of their value and argue that they entail substantial expenditure on cognitive, organisational and operating processes, and that development and transformation of dynamic capabilities requires substantial investment of time and energy on the part of managers. Zollo and Winter [2003] make a point that if managers are wrong in their assessment of their firm's situation, they will contribute to developing dynamic capabilities that are inadequate for that situation. Utilising and developing such capabilities will have negative consequences.

Chandler's research shows that organisations which are successful against competitors always using the same strategy and the same competences might fall into the trap of their own success and stagnate. The only way out of this trap is to develop dynamic capabilities that will provide long-term competitive advantage.

Capacity to provide financing as the basis for developing key competencies

It is impossible to ensure business growth without securing additional long-term financing. Even if the firm is profitable, procuring necessary capital based on internal resources only will not allow it to become sufficiently competitive under dynamically changing conditions.

There are two solutions currently that Polish businesses could use to ensure their survival and growth. The first one is to integrate with a large Western conglomerates (basically, finding a strategic investor). While providing know-how, technology and financial resources, the solution would also entail loss of independence and transformation of the firm into a subsidiary in a value chain whose core is located abroad. The other option is to attract a financial investor who will agree to the firm retaining its organisational and legal autonomy. If we look at what financial investors require of potential investees, we will see that in addition to financial ratios, such as return on capital or return on project, a lot of attention is given to such issues as the incumbent management team that must be efficient and competent in both developing and implementing the planned strategic projects. Another important requirement for investors is that there must be a well-thought-out exit strategy to make sure they can leave the project at a specific point in time.

We should mention the major factor that makes an investment attractive and is the most important part of a good relationship with a financial investor. This is a business growth strategy which will set out in clear terms how the firm is going to strengthen its competitive position.

Sales growth is only possible on the back of two variables: one is rent achieved when the market itself grows in size and the other is rent achieved when the firm increases its market share at the expense of competitors. To achieve this, an understanding is needed of how the firm could be improved in operational terms, what its market share is, and where its competitive advantages lie. This knowledge is needed to create added value to the financial and tangible assets the firm has under its control.

Globalisation processes and ICT as determinants of strategic choices

Clearly, the crucial factor affecting customer choice is price. That said, we should not forget that product price is correlated to product quality.

As is plain from the management practice, the go-to strategy is usually cost leadership. Its implementation, however, requires one to answer the question of the underlying point or purpose of selling at low prices and why selling at high prices (even though highly profitable) is difficult.

The observed effects of information technologies on the choice of competitive strategy and the convergence of products and services in terms of quality mean that customers find it increasingly difficult to identify their preferences for specific products and justify their choices by functional properties only. Moreover, our ability to have unrestricted and fast access to information about potential vendors and what they offer have given rise to a new concept called "threat of commoditization".

The ongoing processes of change again demonstrate that that competition today is not between products but between firms that offer them on the market. For that reason, businesses which strive for long-term leadership increasingly tend towards differentiation as their choice, focusing their efforts on the distinctive properties of their products that make them more attractive in customers' eyes. A lot of well-performing firms today attaches particular importance to customer relationship management processes which help them create the conditions for long-term relationships with their customer and thereby ensure their loyalty.

Another observable tendency among businesses, which is an offshoot of globalisation and ICT development processes, is the pursuit of value chain positioning that would most closely correspond to their key competences and at the same time allow them to capture as much of the value generated in that chain as possible. The examples here are business process reviews undertaken by Ford and General Motors. Coupled with their new electronic procurement systems, the reviews allow the two firms to thoroughly analyse and verify what they expect from their suppliers, which could lead to significant shifts in the industry's structure.

The frequent practice among Polish businesses is their pursuit of maximum control within the value chain, leading them to try and produce everything they can. This is justified where the strategy of vertical integration leads to substantial cost cuts and reduces the risks involved in supplier power and monopolistic practices. Having said that, this willingness to manage the entire value chain often makes it impossible for the firm to focus appropriate resources on its key competences which are of fundamental importance to gaining and keeping competitive advantage.

Importantly, too, attempts at full control may produce opposite effects to those intended. A high degree of integration involving all manufacturing and sales processes has the primary effect of reducing dynamic capabilities which give the firm its ability to adapt to change.

Strategy based on key competencies and dynamic capabilities of firms

With its increased information flows and accelerating globalization processes, the age of information has given rise to new expectations as to strategy-formulating approaches, methods and tools. This is primarily the result of much faster and more disruptive changes in the environment than was the case in the past, leading to greater uncertainty about the impact of multiple variables on the functioning of organisations.

Experts at Athur D`Little, a consultancy, offer an interesting insight into how strategy-formulating approaches have evolved. They distinguish three types of strategy, as follows:

- Resource Driven Strategy;
- Condition Driven Strategy;
- Ambition Driven Strategy.

The question arises about the evolutionary stage that Polish businesses are in with regard to strategy formulation. Regrettably, the strategic thinking of the many management teams is limited the firm's assets. This is why the oft-repeated line one can hear is "our company operates a manufacturing department that has dozens of machine tools, so the most important thing for us is to utilize those machines and the working time of the department's staff". Management teams at such companies have stopped early on in the evolution of strategy-formulating approaches, whereas the success in a highly competitive environment is not predicated on what assets the company has at any given time, but on how fast it can build and develop the assets it needs.

A crucial task for the management in such a case is to transition to the condition driven strategy. This particular strategy is linked to the traditional approach whereby strategy is formulated in response to the past and current changes in the environment, and takes into account the firm's internal potential. In this case, the strategic planning process entails the processing and analysis of a substantial set of information about the firm's environment and operating conditions. That said, one should remember that changes in the environment are increasingly disruptive, which limits predictability of events and increases uncertainty. The traditional strategy-formulating process is based on analytical activity which delivers a choice of what should be the best possible growth scenario for the firm; this is then turned into a business plan and specific planning guidelines and tasks.

A different strategy approach is Arthur D`Little's ambition driven strategy. The approach combines analytical methods with methods that integrate creativity, dynamics and involvement of all members of the organisation. What makes it different from the traditional approach is that it:

- develops essential strategy elements based on the organisation's vision and its future goals;
- takes into account behavioural aspects of the firm to ensure they are in line with its strategic objectives;

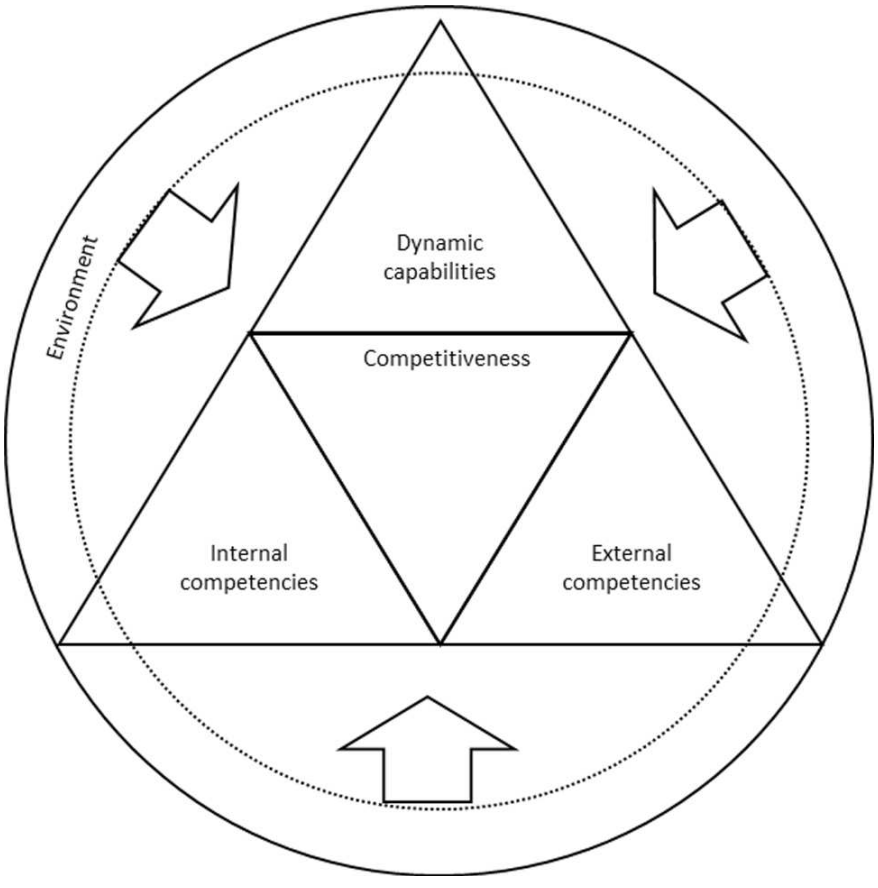
- provides a continuous change management process based on a system of different criteria.

The ambition driven strategy assumes that competition is not between products but between companies that make them. In a well-performing business, failures in one business area are made up for with successes in other areas. Importantly, too, the firm's competitive is predicated on three fundamental groups of variables (see Fig. 1):

- internal competencies
- external competencies
- dynamic capabilities

Accordingly, one of the major reasons why Polish businesses fare rather poorly competition-wise is that their dynamic capabilities are low, they are unable to adapt to changes in their environment fast, and they lack knowledge-management skills.

Figure. 1. Determining factors of business competitiveness



Source: Author's own composition

The firm's internal and external competencies may only include those variables that secure it a sustainable competitive advantage and are hard to imitate by competitors. Their examples include:

- know-how, unique technologies, ability to make modern high-quality products
- efficient business processes (project management, quality management, sales, marketing, budgeting, incentive system, etc.)
- highly-qualified personnel with specialist skills which are sought after in the labour market and require substantial funds and time to be gained

External competences include:

- stable relationships with suppliers and customers
- lobbying capacity
- ability to secure external financing

This means that to be highly effective, a strategy must be targeted towards building and development of organisational competencies and dynamic capabilities. Yet, the majority of firms prefer "cost leadership" as their choice of strategy. The research by the authors into strategic choice processes indicates two key determinants of strategy formulation: (1) the ability to keep the costs low due to substantial competitive advantages afforded by unique technology, business location, and low-wage based economies of scale; (2) substantial financial resources that exceed those of the company's competitors and allow it to cut its prices significantly. That said, the research shows that few businesses have these kinds of competitive advantage. Importantly, too, bankruptcy statistics for businesses in various markets demonstrate that attempts to achieve market leadership with low prices are among major reasons why the firms' financial situation deteriorates, leading to negative consequences in the long term.

Summary

Increasingly, it is not in the field of resources but strategy that competition is played out, with companies ramping up their investment into building their key competencies and maintaining their dynamic capabilities. Value-creating processes are ever more reliant on the potential to innovate, which is the firm's ability to formulate even more effective strategies, and to ensure its continuous growth and renewal of its structure and key business processes in the face of new challenges from the outside. Accordingly, to make sure conditions are in place to develop their competitive potential, companies must operate efficient management systems that will enable them to gain and maintain a significant market share, resulting in revenue growth and translating into their financial success. Being highly competitive means that a firm has the ability and potential to put its innovative ideas into practice, enjoys stability, can survive whatever changes are afoot on the market, and is attractive to investors and lenders. That means that market leadership can only be gained by a company that has appropriate dynamic capabilities and is able to:

- understand its market place and come up with an effective growth strategy;
- develop a strategic project that will secure its market leadership;
- secure financing for its strategic projects.

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Strategic imagination of Polish managers

This article is aimed at clarifying the meaning of strategic imagination and its role in shaping the future of organizations. The strategic imagination as a specific form of creative attitude is believed to allow for navigating a company destiny in the turbulent, complex and unpredictable environment. It is composed of numerous factors, external and internal ones. The conducted sounding of opinions and press interviews with managers indicate the deficit of strategic imagination. It is caused by the domination of short-term orientation in business management and routines stemming from organizational structures, traditional management systems and bureaucratic organizational culture. There is an evident need for changing the approach to business development for more creative one and supported by modified competence profiles. Strategic imagination should be learned and trained.
The analysis of findings would allow for more precise validation of defined hypotheses.

1. The setting.

Imagination is one of the most important and specific features of the human nature, being the part of intelligence. It allows to create visions of the future, be it a whole broad picture or as a selected part of it. Individuals in general differ from each other how they imagine. The factors differentiating the type of imagination may be attributed to, among others, age, sex, education, life and work experience, social and job position, maintained relationships. It could be assumed that women differently perceive and evaluate the situation than men, the level and type of education alters the width and depth of insights as well as the way of communicating it to others. Working on the operational positions in the organization may reduce the observation scope as compared to the management perspective. Engineers may focus on other aspects than economists or humanists. Experience, usually growing with age and maturity, corrects our expectations and visions in terms of previous optimism or pessimism level when observing the trends and their likely extrapolation. One can also point out the different characteristics or types of im-

agination coming out from the dominance of abstract calculations, emotional attitudes or sensitivity. They may demonstrate themselves when thinking of the direct professional or social environment or any other broader context of activity, from local to global one. Imagination allows us to see and go beyond existing real or perceived boundaries. The more constraints the person encounters, the more imagination and intelligence should be employed to overcome them and to move forward. Imagination is needed to develop creativity and fuel the search for new solutions. On the other hand, imagination driven by fear may lead to overestimation of the real threats and paralyze actions.

Strategic imagination (SI) in business organizations is the expected virtue of leaders and their capability to navigate their companies in the turbulent and complex environment. Today it is almost impossible to find any analysis proving that companies operate in a stable and foreseeable environment. Micro and macro environments demonstrate the pace and scope of change that create the feeling of uncertainty and ambiguity as to the rational course of needed and feasible directions of growth, which the companies should choose to deliver expected results. Moreover, the pressures from different stakeholders frequently seem contradictory and on the short term require the decisions based on unavoidable trade-offs. It frequently happens, for example, in case of business, social and environmental requirements. On the long term, however, the solutions integrating contradictory areas into one concept could be found, thus constituting the part of the company sustainable competitive advantage e.g. the Corporate Social Responsibility. The key issue is the ability to convert imagined visions into feasible solutions, goals into processes and projects, all of them meaning well defined operations with measurable results expected by stakeholders. This ability enables the support for new goals and directions, indispensable resources and time proving the solutions make strategic sense in highly competitive environment.

In order to define the scope of strategic imagination within the company responding to encountered challenges fundamental questions should be formulated: from how to survive to how to win in existing state of the environment. These questions also relate to the horizon of present and potential impacts, ability to respond to challenges and time frame to develop and undertake action.

2. Strategic imagination of Polish managers- business press overview.

Strategic management has been one of the major areas of interest in research, managerial education and publications at the Institute of Management, Collegium of Management and Finance, in Warsaw School of Economics. Recently one of the most nurturing themes became strategic imagination of the Polish managers.

The initial source of information was the the set of articles in the business press presenting the opinions of outstanding Polish managers [1] . The second source of opin-

[1] These opinions have been published in the following journals: „Puls Biznesu, Parkiet, Sukces, Menedżer, Forbes", 2016 -2017.

ions were the participants of the MBA-type post diploma studies in Katowice, and finally the reports of the leading international consulting companies on trends and competency profiles of the future leaders. All of them will be discussed in the following sections.

Analysis of articles in the daily press magazines, where the main actors are Polish high-ranking managers, could lead to the finding of considerable difficulty in selecting managers with a high level of imagination.[Morgan G. 2001]. We can hardly find the examples of high-level managers broad strategic imagination. Chairmans of the board in the interviews point out the importance of having a vision as a driver for organisation conduct, necessity of its formulation, communication and creation of conditions for its implementation. They claim that „*good, accurate business idea brings extraordinary results",* Another interlocutor says: "*I used to talk about our company, neverending start-up. The changes are permanently inscribed in our business „ President with the strategic imagination is able to formulate it and articulate it* „[Puls Biznesu 2017].

Numerous managers of large organizations highly values the impact of market changes, their anticipation. This vision first of all concerns the product and market strategy as well as competitive strategy. As it was said „*we actively participate in the industry and business meetings. This allows us to adapt to the market situation. Our experience and the people that create the team, make it possible to anticipate the upward market trends and prepare for the boom, as it was the case we faced last year „*.[Parkiet 2017].

The originality of these concepts is not significant, and is not a groundbreaking with relatively short time horizon.

D. Gorzelana-Królikowska observed that examples of strategic attitudes reflecting high strategic imagination are not common. „*We have efficient managers , but their strategic imagination leaves a lot to be desired, or simply they do not have it. Some organizations do not require such attitudes. Executives are usually appointed in accordance with the expectations of owners and their representative bodies. In some companies we have to deal with conformist attitudes strengthening the existing order. Even if they build their image as a strong and dynamic managers, in reality they follow the directions and ideas of the dominant shareholder. There is a lack of focus on the strategic imagination*" [Gorzelana-Królikowska 2017].

Interviews with managers emphasize the various factors of the imagination. The founder of the one of the most successful companies in the beauty industry claimed that their success resulted from their " *dreams and passion. Only with passion, which is an integral part of the strategic imagination you can pull the organization for growth*" [Sukces 2014].

Another model of manager's strategic imagination uses metaphors and images. This manager creates new patterns completely different from those that apply to traditional concepts of organization. *New way of perceiving the world is aimed at stimulating creative actions. This broadened and innovative way of seeing the prospective world, is an outcome of pluralism, diversity and extension of the organizational limits*" [Zatoński, Puls Biznesu nr 44(4807)].

By analysing newspaper articles containing interviews with managers, it can be concluded that the concept of strategic imagination appears quite rare. More often the managers refer to certain elements of thought and action, which are the manifestation of the strategic imagination. These include terms such as vision, mission, long-term goals, predicting the future, determining the direction and ways of development, building a competitive position, „vision of yourself and your organization in a new future", „anticipating possible scenarios in the future" [Soldecka 2017].

Managers are aware that the strategic imagination allows you to look at the targeted organization „from a bird's eye view", in the systemic and contextual way; tand that it is a complex phenomenon, multi-threaded, subject to various external and internal contingencies.

3. Strategic imagination in the opinions of managers – participants of the post diploma studies.

Attempting to clarify the way the Polish managers and staff perceive the importance of imagination related to strategic management the **sounding of opinions** has been carried out among the 60 participants of the Warsaw School of Economics MBA-type post diploma study program in Central Mining Institute in Katowice. The questionnaire was a part of the strategy course within this program. The respondents were characterized by: their age, sex, education, years of employment, formal position and the company data such as industry, company size, market position, ownership and legal form.

The questionnaire consisted of 16 issues focusing on whether and why the strategic imagination is needed in their companies, who expects such an imagination and what are the initiatives based on it and who should have such an imagination. First open questions related to the description of the content of strategic imagination important for the company future and the need for change in strategic thinking in the company under the impact of external change in macro, competitive and direct task environments. Further investigation was aimed at intended change of the product-market strategy and the expected influence of the company management system with present strategic mindset and factors encouraging or constraining the development of SI. Respondents were also asked about their opinions on the proper reactions to the observed changes in the business environment and whether the change of strategy is necessary or not. In case of positive answer, what decisions they would recommend for the strategy change, how they perceive the level of innovativeness of their companies and what is the type of introduced innovations.

In the last open question we asked for their opinions on how to shape and strengthen the strategic imagination of Polish managers.

The data from the questionnaires have not been intended to be statistically significant. The size of the pilot sample did not allow for any general conclusions. However, the general overview of the material delivers some interesting insights based on the

dominating opinion patterns. They are divided into seven groups differentiated by sex, age and employment time with additional information regarding their position, education profile and the industry and size of the company. The composition of respondents reflects the specificity of the managerial post diploma students as well as the profile of the Upper Silesian region.

In the investigated group of 60 persons, 22 were women and 38 men. The group of women was divided into three categories: women below 30 years old with employment within 1-5 years (group A), below 30 with employment from 6 to10 years (group B), and dominating group C of women at the age 31-40 and employment over 11 years. The group of men, more numerous, was divided into four: age below 30 and employment within 6-10 years (group D), age 31-40 and employment 6-10 (group E), age 31-40 and employment 11-15 years (group F), and finally the group of men over 41 years old with employment over 15 years (group G). Other combinations of age, sex and employment were either insignificant or not existing in the researched sample.

Strategic imagination (SI) as perceived by women

Group A was constituted by the youngest women under 30 years old and with the shortest employment period up to 5 years. All of them represented the middle level of management and one of them the board level. They have been working for SMEs and large companies. Dominating type of education was technical, other graduated from economic and humanistic schools.

All of them represented the opinion of the need for strategic imagination in business management, however the opinions on who expects from the employees such an imagination they indicated at the first place external and internal consultants, next answer was managers and owners, and at the end- everybody. The same split was observed related to their expectations on who should have such imagination. Up to them the scope of SI should be a mix of vision of improved enterprise, competences such as analytical thinking, forecasting results, optimization and ability to solve problems and create solutions in order to avoid failures. Another component of SI referred to was the likely new expectations of clients, new technology trends and surprises in general.

All respondents shared the opinion about the decisive or important impact of macro environment on the change of strategic way of thinking and performance of their companies. They pointed out the role of political, legal, economic, technologic, social and environmental factors. However, their understanding of the relationships among external factors and company strategies was rather vague, except from one respondent representing the consulting company. The same was applied to too broadly generalized approach and their opinions on the role of influence of competitive and task environments. They pointed out to the key role of clients in setting up direct expectations, importance of suppliers and subcontractors, with the specific inspiring role of competitors in the market game. They were not well oriented in the company strategic shifts nor in the way a company management system works and shapes the strategic imagination

(business model, organizational structure, management processes and culture). Among the major factors favoring the SI they mentioned human resources with high potentials, leadership and tangible assets at the disposal of the company. Factors averse to SI mainly referred to organizational structure and less to leadership, ongoing strategy, human resources and IT systems. Quite unexpectedly the same factors were listed as the SI limiting ones. The change of strategy (phasing out some products and technologies, withdrawing from markets or contracts, reorganization) and new initiatives (projects, programs, processes, partners) were the dominating reaction to perceived external change or no change at all. All respondents defined their companies as moderate innovators, while innovations mainly related to products and distribution. The strategic innovation potential of human resources could be shaped through educational programs, workshops, examples and developing of creativity.

Group B consisted of women up to 30 year old and with longer employment (6-10 years), representing middle management in large companies (automotive and banking) and having differentiated and broader educational background. This group as compared with relatively less experienced group A demonstrated more maturity in opinions and better orientation on their companies' management issues. All acknowledge the high need for strategic imagination among all internal stakeholders, pointing out the leadership role of board supported by experts and consultants but also the need of empowering the lower levels up to direct workers, who should wisely participate in the whole process. All of these managerial levels should actively display SI in their thinking and actions. The SI should be materialized in strategic analysis, forecasts and new goals as well as in the whole process of strategic management covering among others the company development plans, new requirements of clients, evolving operational excellence, risk management, effectiveness in planning, implementation and controlling of performance with the use of new technologies in manufacturing and information. They attribute the leading role to macro environment in shaping the SI and adopted the perspective specific to their businesses (international scale, management, capital). They perceive both pro's and con's of political impacts, legal and tax regulations, labor law, relocation decisions caused by economic factors, opportunities and problems related to aging society and employment, impact of automation and robotics, changing the company technology infrastructure, and finally the growing popularity of CSR. The most influential actors shaping SI are clients, suppliers and partners in value chain. They understand the role of internal and external clients and evolving business structures based on cost-benefit analysis. They learnt to anticipate the competitive moves and to protect their position in the company. Technology and pricing are mentioned as main areas of adjustment. The present positions of their companies as well as their ability to react with adequate resources to competitive threats do not justify the strategy change. In general, their companies are perceived as moderately innovative. The SI is supported with the access to sufficient resources, active contributions of human resources, present value systems and strategy as well as information system, technology and leadership. Among

the factors constraining the use of SI are mentioned: organizational structure, present corporate and business strategy, leadership and information/decision-making systems. Existing management systems determine the framework of SI development. They are able to imagine the strategy change, reorganization, new initiatives and new forms of partnership and relations. The most frequent innovations relate to products, production/service technology, ICT and ways and sources of financing. Strategic imagination is shaped by the permanent exposition to new situations, gaining experience and advancing education, including continuous learning and action learning.

Group C dominated the women part of the poll. It consisted of women at the age of 31– 41 with employment period of 11-15 years. The dominating educational profiles were economic and humanistic, almost all worked in SMEs, where majority of respondents holds the ownership and board positions. The industries range from polygraph, steel, industrial printing, medical services, steel constructions to finance.

Without surprise all respondents confirmed the importance of strategic imagination, especially expected by company board and owners. However, sometimes the new initiatives were not welcomed. In the dominating opinion all members of the company staff should have some level of SI, which covers long-term relations with clients, broadening market scope, clear goals, plans and knowledge based orientation in appearing opportunities and threats, ability to optimize the use of companies' potential and building partnerships. They perceived the gap between broad and optimistic imagination and reality described in analyses, so they pointed out to the role of knowledge and experience in mitigating overoptimistic initiatives. Their companies were strongly vulnerable to macro environment impacts. They perceived the dependence of country economic situation on the diverse political decisions shaping the business environment. Demographic trends and forecasts are used for planning output. All components of competitive environment and task environment were analyzed, fostering the decisions of consolidation with stronger partners and accepting their strategy. The half of the companies from this group did not intend to change their strategies and define their profiles mainly as moderate innovators. The other half were identified as strong innovators. They evaluate their distinctive capabilities and high talents, leadership and value systems as major factors favoring SI, while organizational structure, information/decision-making systems, and leadership are the major constraining ones. SMEs, as it was expressed, have to be adaptive and more agile than the large ones in adjusting to the market change, so all portfolio of tools were considered, although only 50 percent perceived their companies as rather innovative and other 50 as rather not innovative. The innovations were mainly focused on new products and ICT systems, new distribution channels. The strategic imagination development requires more attention paid to strategy, shaping new capabilities, education and dissemination of new knowledge, encouraging research, creativity and imitating the best patterns and studying the professional journals. They also suggested the change of mentality of younger generation.

Strategic imagination (SI) as perceived by men

Group D consisted of the young men at the age below 30, being employed from 6 to 10 years. The majority has technical education and has been working for large companies, mainly at the middle management positions or at the board of the smaller companies. The following industries were represented in this group: construction abroad, new IT technologies, mining, automotive (foreign), support of innovations and new technologies, alcoholic beverages. Strategic imagination, in their opinion, is indispensible in responding to new technology and ecological challenges, managing the sustainable and profitable future of companies, while its scope should be unlimited. The board should expect from everybody having SI and all employees and owners should have it to behave wisely with vision of the future. Macro environment plays the important role in crafting the framework of what is legal and feasible. The major task environment components are clients, suppliers and partners in the value chain, while the competitors spur the imagination on how to lead and strengthen the strategic position. However, the knowledge on potential strategy changes in large companies was very limited. Present management system strongly shapes the SI in the majority of opinions. Among the factors favoring SI, tangible and financial resources were put on the first place, followed by HR with their distinctive competences and talents, with minor role of organizational structure and leadership. Constraining role in SI was attributed to present strategy, information and decision making system as well as possessed resources. In view of perceived changes in the environment they expect the adequate strategy change, mainly in product, market, technology and contract portfolios. They would rather classify their companies as innovative, with some considering their companies as not innovative. Dominating innovations were perceived in the same areas as in previous groups with creation of innovation platforms as unique answer. Strengthening the potential for SI development should be done through more stabilization, gaining the implicit knowledge from experience and analysis of new solutions based on broader international experience.

Group E, one of the most numerous, constituted of respondents at the age between 31 and 40 and employment between 6 and 10 years, with dominating technical education, working more often in SMEs than in large companies and rarely in micro ones. The industries represented in this group were from mining, construction and developing, consulting, road construction, industrial automation, packaging to telecommunication. The majority worked as middle level managers, some as workers, some were owners of the companies, and others worked as experts. According to the majority, first of all top management and middle management together with owners should expect from others a significant amount of SI, while almost all employees regardless of their position should have SI to be able to foresee different scenarios of the future and at the early stage of planning to use the strategic intelligence. Especially all aspiring to the leadership positions should adopt the long- term perspective and be prepared for unknown through flexibility. The shortening time for reaction makes SI the key to success in shaping the future and the company image and reputation. It also creates pres-

sures for continuous improvement of efficiency and effectiveness of processes. All respondents perceived macro environment impact as decisive or important, pointing out different elements depending on the industry and company specificity. They attributed the important role in SI to competitive and direct task environments. In view of perceived changes the majority considers important the change of strategy, some continue the present one, and a few respondents were not oriented. The company management system is in high degree influenced by the SI, according to majority representing higher positions in hierarchy and moderate in the opinions of others. The factors favoring the SI development were related mainly to soft factors, such as the competences of HR, talents, value systems, the leadership and present strategy. The most limiting factors were organizational structure, information and decision-making systems, and human resources in general, but also leadership and available resources (shortages). The envisaged potential reactions consisted of the whole portfolio of strategic ventures. The majority evaluated their companies as moderately innovative and some as not innovative. All innovations types have been taken into account with some dominance of product and technology change (IT and manufacturing). SI should be strengthened through diverse forms of education fueling the continuous process of improvements supervised by managers with perspective thinking modes. Ambition, creative thinking and experimenting plays the important role in enhancing strategic imagination.

Group F consisted of men at age of 31-40 and work experience of 11-15 years in such industries as services for mining and energy, manufacturing of consumer products, industrial automation, and local commune administration. The majority works in large companies and some in SMEs. Dominating education was technical and position – middle level management. The top management, in the opinion of respondents, predominantly should expect from others having SI. However, in the opinions of others everybody in the company should demonstrate SI, except from experts and consultants, which seem to reserve the authorship of the future to the company personnel. The scope of SI was perceived as a broad one, almost unlimited and subordinated to visions of the future, opportunities and threats, strategic choices and future industry structure, innovations, organizational issues, and infrastructural solutions. The role of macro environment in their opinions was very important with specific impacts of all its components on their companies. Among the external stakeholders the clients were at the top position influencers, followed by suppliers and partners in value chain. Competitors were also perceived as potential partners in alliances. In some cases the bankruptcy of a major competitor is perceived as an opportunity. The majority considers the change of the present strategy. The current management system impact on SI was estimated as high. Among the factors favoring the development of SI respondents mentioned leadership supported by competent personnel, value systems, information and decision-making system. The most SI restricting factors were attributed to organizational structure and HR. Apart from the already mentioned proposals of suggested changes in strategy in this group the focus on export was additionally pointed out. The majority described their companies

as moderate innovators, so their ideas what innovations should be implemented focus mainly on operations (products, technologies, distribution, and financing). Strengthening the SI in their opinion apart from education, conferences, fairs and exhibitions also embrace studying of business journals and culture development in general.

Group G consisted of men at the age over 40 and employed for over 15 years in such traditional heavy industries as mining, services and specialized tools for mining, production of explosive materials, metallurgy and production of spare parts, and local commune administration. They worked in large companies and SMEs, the majority on the board positions, other on middle level managerial positions and experts (in SMEs).

For all of them SI has been indispensable to avoid failures and risks in the operational activities and to continuously adjust to changing market demands and macro, competitive and task environments. Frequently it requires unusual and non-standardized methods. Forecasting and visioning needed for the long-term planning are especially important in tangible and capital intensive industries and their broad ecosystems. The owners and top management expect everybody in their companies to have strategic imagination while the respondents mainly treat it as a competence of management and owners with all employees being aware of what may happen. Macro environment creates numerous and extremely strong pressures to change the strategy, including political decisions, economic pressures and terms of trade on international scale, social uncertainty and environmental restrictions. All of those factors are carefully analyzed, although in state owned companies some decisions are taken on higher political levels. The majority considers the strategic changes and others continue already redesigned strategies. The management systems have moderate and, according to less numerous respondents, high impact on SI. Among the SI favoring factors, they mentioned leadership and distinctive competences and talents of personnel in the first place, with all other factors being equally important. The most constraining factors relate to organizational strategy and structure, while all other ones were also important and exert similar impact. In the proposals for the strategy change the most frequent answers related to phasing out some products, technologies and relationships, and to launch new initiatives and strategic reorganization with outsourcing. Despite of the maturity of their industries the respondents pointed out that their companies are rather innovative what mainly refers to products, technology and distribution with new initiatives assuming new financing schemes and stronger focus on services.

Strategic imagination should be shaped through diverse forms of education, sharing experience and best practices, searching for and listening to visionary leaders, setting up relationships with the world best performers, and experimenting.

4. Future competence profiles – consulting companies views.

High significance of strategic imagination appears in their opinions on the managers' competences, which will be gaining in importance in the future. Very dynamic changes in the environment will cause that managers will have to react faster and more inno-

vatively. They should be better prepared for anticipating them, changing their management systems, more experimenting and respectively shaping the culture of the organization.

The proposal is consistent with the report of the consulting company Deloitte "*Global Human Capital Trends in 2016. The New Organizatiion Different by Design*" [Deloitte 2016]. In this report, which is the result of research carried out in over 7000 companies in 130 countries (including 40 in Poland), up to 92% of enterprises considers organizational changes and new models of organization as the most important. It is worth quoting the part of this report: "*Rapid business model innovation from the companies such as Uber and Airb&b forcing organizations to respond and reposition themselves quickly to meet the challenges. Black Swan events (those of low and high impact) also seem to be more significant, reinforcing the Reed for agility* „.

On the following places are the leadership issues (features and skills of the future leaders). 89% of respondents identified them as very important or important; culture (86%), engagement (85%), learning and development (84%).

In the context of the changing competence profiles of managers the consulting company Accenture carried out an interesting study a few years ago. They asked several thousands of managers the question about the characteristics and skills that will be crucial for the effective fulfilment of leadership roles. They were not only interested in identifying the competences of the future leaders but also how they would be changing over time. Interesting picture of changes have been obtained related to 14 key competences. The most impressive changes as compared to the past will be attributed to thinking global, appreciation of cultural diversity, encouraging constructive changes, control over changes, anticipating opportunities, taking care of customer satisfaction, creating a common vision, building teamwork and partnership.

They all fit well to the concept of strategic imagination of managers and confirm the findings and practices of the recruiting companies. More than a dozen of interviews show the expected competence profile of searched managers. They are expected to have high level IQ, emotional and relationship intelligence, professional knowledge related to the industry the company operates, ability to cooperate and build teams, strong achievement motivations, experience, ability to formulate the development path and crating the favorable conditions for its implementation, system thinking, and flexibility. Moreover, the expected individual virtues comprise behavioral competences, dynamism, empathy and assertiveness. All of them directly or indirectly relate to the concept of strategic imagination.

Conclusions

Our research shows the perceived need and importance of the strategic imagination in managing the companies of the future. This term is not very popular as so far. More frequently its components are attributed to the process of strategic management. In the press articles the visionary leaders admit that without the imagination and passion

they could not achieve extraordinary position and performance. They indicate the components of strategic imagination such as vision, mission, strategic goals and distinctive capabilities.

The key issue is the anticipation of likely change of environment and building the strong position in this context. Intelligent responses to perceived challenges are undergoing numerous favoring and constraining impacts. Macro environment, competitive and direct task environments as well as ongoing strategy and management systems influence the scope of strategic imagination.

Important role of personal features such as age, sex, employment duration, education, experience gained from working on diverse organizational positions contributes to broadening of strategic imagination. Crucial influence could be attributed to the specificity of the company potential. Although the pilot research sample did not allow for formulating statistical co-relations it showed however that strategic imagination in general grows with gaining the management experience but at the same time organizational routines may considerably reduce its positive impact. It seems that a window of opportunity to develop strategic imagination is depending from the combination of personal, social and cultural features, and a company size and resources, regardless from the industry.

The strategic imagination requires the development of specific competence profiles of managers. They can be acquired in the process of education, learning from best performers, visionary leaders, in teamwork, through experimenting and performing creativity.

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Organizational culture in cross-cultural management

Organizations that want to increase their production potential and find new markets for their products, as well as to find new opportunities for their technological and scientific development, transform into international companies. Countries in which these enterprises start their operations adhere to a different history, culture, religion, work ethics, social and organizational system as well as economic environment. Each of these factors are influential on its organizational culture and the work of managers of its international teams. The paper addresses selected models of culture and their importance in organizational culture.

Coross-cultural management

An organization that has and controls assets in at least two countries is called an international company. A process that leads to internationalization of company can take on a variety of forms, of which the most popular are: engaging in export-import activities, selling a license, opening international franchising, creating joint ventures, establishing branches overseas, commencing a takeover of a foreign company or its shares and establishing a daughter-company in another country. Thus, the today's manager must learn to function in a divers economical, legal, political, technological and cultural environment. Each of these environments influences style of management in its unique way, however international enterprises are forced to function in the world of the mix of such divers environments with the cross-culture environment being major challenge as it is one of the most difficult to precisely define or to understand thus to their dismay is most neglected by the managers.[1]

"Cross-cultural management is the study of the behavior of people in organizations located in cultures and nations around the world. It focuses on the description of organizational behavior within countries and cultures, on the comparison of organizational behavior across countries and cultures, and, perhaps most importantly, on the in-

[1] D.C.Thomas, M.F.Peterson, *Cross-cultural management: Essential concepts*, Sage Publications, 2017, p. 3.

teraction of peoples from different countries working within the same organization or within the same work environment[2]".

Cross-cultural management is an interdisciplinary field of study of management in a cross-cultural context. It includes in a wide spectrum: cross-cultural psychology, anthropology, sociology, management (as the broader discipline), organizational behavior and international human resources management. In strict context, cross-cultural management includes: the influence of societal culture on managers and management practice, the cultural orientations of individual managers and organizations members. Cross-cultural management aims to improve management, communication and interaction of people from different countries and cultures.

Dimensions of culture and organizational culture

Culture is "the collective programming of the mind that distinguishers the members of one group or category of people from others[3]". One can understand the Culture as "the way of life, especially the general customs and beliefs of a particular group of people at a particular time", it covers all of the fields of human activities including activities in organized groups such as enterprises and it is defined by literature as Organizational Culture.

Organizational Culture conglomerates sets of shared values, believes, norms, traditions specific to the organization and as such it distinguishes the organization from other companies. Organizational Culture expresses its self by unique way of communications, rituals, rites, formal and informal sub organizational structures. To understand the culture better, one can distinguish the sublayers called levels of culture or dimensions of culture. Such distinction allows researchers to concentrate on selected aspects of research interest by defining sublayer's order and characteristics to better understand the culture overall. The literature provides verity of sublayers definitions of culture and the organizational culture is usually defined as modules.

The most popular model definitions were described separately by E.H.Schein, F.Trompenaars, G.Hofstede.

Schein's Model divide the culture into 3 levels: verbal artifacts (socially shared language, stories, myths), behavioral artifacts (rituals, ceremonies and behavior patterns) and physical artifacts (art, physical environment, technology)[4]. environment, technology).

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[2] N.J.Adler, *Cross-cultural management research: The ostrich and the trend*, The Academy of Management Review, 1983, Vol. 8, No.2, p. 226.

[3] https://geert-hofstede.com/cultural-dimensions.html

[4] E.H. Schein, SMR Forum: *Does Japanese management style have a massage for American managers?*, Sloan Management Review, 1981, No. 23, 55-68, and W. Gibb Dyer Jr., *Organizational Culture: Analysis and change*, Massachusetts Institute of Technology, Sloan School of Management, Cambridge, September 1983, s. 2.

A similar concept of dividing culture into 3 layers (strata) was described by F.Trompenaars.[5] The first layer, same as defined by Schein, is the outer layer of culture. It identifies artefacts and products such as language, architecture, climate, dress, food and drink. The outer layer is a 'visual' representation of two imbedded layers; the middle and the inner. The middle layer of culture encompasses norms and values, this layer is most relevant in corporations as it describes expressed values, attitudes and behaviors. The inner layer, also defined as the core layer, comprises of basic assumptions held within the group.

G.Hofstede compared culture to an onion (Hofstede's Onion Model). In Hofstead's view the culture like an onion is made of 3 layers around a core. The Core, although not defined as a layer, is the principle set of values of a certain culture, such values remain mostly the same. Even if principle values seem to be outdated or seemingly insignificant they can still play a subconscious influence in the present-day set of values of behavior of the individual as well as the group. Hofstede defines the layer (level) around the core as rituals, the next layer as the "heroes", and the third, the last layer as symbol.[6] All of the above definition of cultures are useful in describing of the Organizational Culture.

International Models of culture

International models of culture are defined to help to compare cultures of nations and by extension to help research and categorize the models of organizational cultures in international environments. Definition of such models was originated from an elementary assumption that the national culture of a country has in fact an effect on individuals and enterprises in that country. As a result, such model definitions help in explaining the individual and the organization psychology. Two of the best-known internationals models are again the Hofstede's Model and the Trompoenaars' Model. The fundamental source for the Hofstede's model was his research of employees' value scores at IBM between 1967 and 1973. The Hofstede Model expanded as time progressed.[7] Overall the data set covered more than 70 countries, from which Hofstede first used for his research the only the 40 countries, later to expand to 50 countries and 3 regions. At the end his research focus included six domains: power distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity, long term orientation vs. short term normative orientation, indulgence vs. restraint.[8] However, Hofstede model is found by some researcher, especially the ones outside the

[5] L.J.Mullins, *Essentials of organizational*, Pearson Education, Essex, 2006, s. 479-480.

[6] https://geert-hofstede.com/cultural-dimensions.html

[7] To the research team belongs Geert Hofstede, Gert Jan Hofstede and Michael Minkov and their research teams.

[8] https://geert-hofstede.com/national-culture.html

'western world'(Table 1), to be insufficient and with inherent bias. To justify such arguments the researchers, point to:

- the limits of considering geographical boundaries as the limits of cultures, which does not apply to the Arab culture as one example;
- negligence of various dimensions of Arab cultures with subtle influence that could not be so obvious for a researcher with general concepts;
- statistical bias as its focus was on the single industry and a single company although in multinational environment;
- trap of standardization: one-size-fits-all. Limited diversity of countries and regions;
- influence of stereotypes and prior classifications of ethnic groups and their cultures[9].

The Trompenarrs' Model was conducted on a large-scale of 8,841 managers and organization employees from 43 countries. This model distinguishes cultures according to seven dimensions: universalism vs. particularism, individualism vs. communitarians, neutral vs. affective, specific vs. diffuse, achievement vs. ascription, internal vs. external control.[10]

The largest cultural research ever conducted was The Global Leadership and Organizational Behavior Effectiveness (GLOBE) project. The GLOBE was a multiphase, multi-method (quantitative and qualitative) research program with its main goal to establish a new international model of cultures. It was commenced in 1991 by Robert J. House. In this program, some 177 social scientists from all over the world, in 61 countries, were examining the inter-relationships between societal culture, organizational culture, and organizational leadership.

[9] N.A.Najm, Arab Culture Dimensions in the International and Arab Models, American Journal of Business, Economics and Management, 2015, 3(6), p. 423–431.

[10] F.Trompenaars, P.Wooliams, Business across cultures, Capstone Publishing, 2003, p. 31–32.

Table 1. The chart below emphasizes the limits of Hofstead modules to Chines and Arab cultures.

G. Hofstede (1980, 1988, Hofstede and Minkov 2008, 2010, 2013)	F.Trompenaars, P.Wooliams (2003)	Dimensions of Arab culture H.Burkat (1998)	Dimensions of Arab culture Salem and Agil (2012)	Dimensions of Taiwan culture Cheng	Dimensions of China culture Liu	GLOBE (2004)
· power distance · uncertainty avoidance · individualism vs. collectivism · masculinity vs. femininity · long vs. short term orientation · indulgence vs. restraint	· universalism vs. particularism · individualism vs. communitarians · neutral vs. affective · specific vs. diffuse · achievement vs. ascription · internal vs. external control	· fatalism vs. free will · shame vs. guilt · conformity vs. creativity · past-oriented vs. future-oriented values · culture of the mind vs. of the heart · form vs. content · collectivity vs. individuality · open- vs. closed-mindedness · obedience vs. rebellion · charity vs. justice · vertical vs. horizontal values	· shura (consultation) · justice · dependence on Allah · sincerity · dignity of labour · esprit de corps	· uprightness and honesty · social responsibility · performance orientation · neighborhood harmony	· harmony · loyalty · bureaucracy · equality · security	· power distance · uncertainty avoidance · humane orientation · collectivism I (institutional) · collectivism II (in-group) · assertiveness · gender egalitarianism · future orientation · the degree to which a collective encourages and rewards group members for performance improvement and excellence

Source: Autor's own analysis based on: https://geert-hofstede.com/national-culture.html, F.Trompenaars, P.Wooliams, Business across cultures, Capstone Publishing, 2003, p.31-32, N.A.Najm, Arab Culture Dimensions in the International and Arab Models, American Journal of Business, Economics and Management, 2015, 3(6), p. 426, J.G.Vargas-Hernandez, M.R.Noruzi, An Exploration of the Organizational Culture in the International Bussiness Relationships and Conflict Era, American Jurnal of Economics and Business Administration 1 (2) 2009. P. 182–193.

The collection of data completed in 2004 consisted results from about 17,300 middle managers of 951 organizations form divers type of industries such as food processing, financial services, and telecommunications services industries. The data sets consisted of interview data, focus group discussions data, and formal analyses of printed media to provide in-depth descriptions of leadership theory and leader behaviour and leadership analysis of 25 cultures. Based on the data analysis the research provided a new model of culture at its nine dimensions:

1. Power Distance: The degree to which members of a collective expect power to be distributed equally.
2. Uncertainty Avoidance: The extern to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.

3. Humane Orientation: The degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others.
4. Collectivism I (Institutional): The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.
5. Collectivism II (In-Group): The degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families,
6. Assertiveness: The degree to which individuals are assertive, confrontational, and aggressive in their relationships with others.
7. Gender Egalitarianism: The degree to which a collective minimizes gender inequality.
8. Future Orientation: The extent to which individuals engage in future-oriented behaviors such as delaying gratification, planning, and investing in the future.
9. The degree to which a collective encourages and rewards group members for performance improvement and excellence.

This new nine-dimensional model of culture is a novel instrument in research of cultures of nations and organizations, especially of organizational corporations made of multicultural workforce.

International Management vs. Organizational culture

The free flow of labor force in labor market, including but not limited to only qualified managers increased challenges to the organizational cultures with increased cultural diversity. More and more companies expand their global reach by moving full production factories to divers countries. Such global shift brings on challenges as described earlier i.e. different religion, work ethics, social and organizational systems. A once established organizational culture may and usually does finds its limits in a new national culture. The confrontation of two diverse cultures can cause unintended strive, misunderstanding and be detrimental on effectives and success of the enterprise. It is very valid then, to consider organizational culture as an interdisciplinary issue particularly in cross-cultural management. Corporate organizational culture is influenced by its employees and as such must be instrumental on the strategy of human resources (HR) management. A well-defined HR strategy is of paramount importance to the future development and shaping of corporate culture as well as in further selecting corporate operation plan in international markets. The organization itself has to adjust not only to the environment but also to the beliefs of people working within. Identifying cultural differences in organization is an important process from the management perspective. It allows the anticipation of how the employees working in the company's overseas units might react to the head office's decisions and systemic solutions concerning them. Moreover, it is still worth pointing out the similarities of cultures, which can provide the base of effective management across cultural divisions.

What happens when the two diverse cultures clash? Which culture will conquer the other? Will the culture of the host country or the culture of the country the organization originated from or the culture of the majority of the workforce or perhaps the new culture rise?

There are four possible scenarios as described below that define outcome of the clash of two divers of cultures. When people travel abroad they are confronted with cultural differences between where they are originally from to new countries. Such people could be described as being in two places at one time. If the culture of person's place of origin is designated A, and the culture of their current location as B, one can discern a multitude of strategies for coping with the differences between the cultural shift of A and B.[11]

1. Essentializing: A<—>B = A/B. In this both A and B essentialize and ossify upon their "encounters with difference or differentness," sort of retreating to their respective "unchanging same." Social psychology has taught us this possibility happens at a group level. A group is a breeding ground for prejudice, discrimination and racism because when different groups in contact with one another exaggerate their differences while creating stereotypes which are put to destructive use.
2. Alternating: A<—>B = A+B. In this A is internalized through socialization but will coexist side by side with B in the mind of the person. Both will be sufficiently compartmentalized, divided, and kept separate. The person will retrieve teachings from both A and B depending on occasion and the presence of others. They will oscillate their identity, they will practice internal mental migration. They will put a mask on at one moment and another mask at the next, this is what sociologists call "passing". They can be considered an identity juggler with a perpetual fear of dropping a ball or two. Thus, identity becomes a matter of positioning-identity as positionality.
3. Converting: A<—>B = B. This strategy is the most historically written and talked about. Many terms have been created to describe such coping including; assimilation, acculturation, and conversion. This strategy suggests a replacement, or more accurately describe a displacement of A to B. This is caused when a person has buried their 'old self' by the loss or negation of one culture by another and becomes uprooted from their past identity.
4. Hybridizing: A<—>B = AB, Ab or Ba. The upper and lower case designates the level of importance or significance attached to the identity of a person.

Based on my own experiences in international management, I concur that the clash of two diverse cultures in any work environment is a very sensitive, difficult and long lasting period for any organization. Such period is influenced by a turnaround of the

[11] Ch. Kwok-Bun, P.J. Peverelli, Peter J., Cultural Hybridization: *A Third Way Between Divergence and Convergence*, World Futures, Routledge Taylor & Francis Group, 2010, 66: 3, p. 219–242.

work force as well as global changes of the country's culture itself. There are three major factors that I observed that were paramount to the success of the process of changes.

1. Language of the workforce
2. Style of execution of the tasks
3. Rules and legal statues of the country the enterprise was govern by

The language of the workforce is of paramount importance. The employees create and influence the culture of the organization and it determinates the style and the ease/freedom of the Staff to share their thoughts. I observed first hand that the most frustrating matters were linked to incorrectly translated or ill drafted contracts due to the lack of knowledge and/or insufficient experience in language of the other country or its organizational 'double' meaning of key words.

Style of the execution of the task are also very valid, especially if the tasks dramatically differ from one way of accomplishing same task to the other, based simply on the origins of the organization and its culture. Diehard push of the 'correct' or the 'only right way' protocol by a novice international manager could unintentionally frustrate the Staff and lower down their morals. It is than very important to examine why we do things 'such way and not the other'. Perhaps an unexplored new way might be a better choice or could potentially dramatically enhance the final product. This experience could lead to updating the protocols or be an opportunity to enhance Staff skills. Different approach to same task might be influenced by the customers' preference or by the law that guides the process of the task i.e. document retention, accounting and tax processes.

Every organization abides to the governing laws. What one country justifies as allowed by law may not be as clear to another. This is especially important in details that may not be so obvious to the outside visitor. Such details are often found in policies that govern Human Resources, Accounting, security and IT i.e. staff awarding, use of company's cars, installation of new computer systems, bring your own devices (BYOD) to work policy, overtime pay, tax time schedules etc. Stated aspects of course do not exhaust the long list of possible conflicts in cross-cultural management however they are the ones that should be address first and influence the management to be extra sensitive to more subtle differences. The style such conflicts are dealt with and how organization culture is implemented by a new international manager will in return influence engagement or unintendedly cement the lack of engagement of the workforce of such organization. The greater the engagement the better and stronger the organizational culture would become. The indifference or straight antagonism of the workforce to the organizational culture will lead to yet greater isolation of the organization in the corporation creating a closed loop of frustration and ineffectiveness.

Summary

Managing of an international company is not an easy undertaking. Pitfalls such as failures in cultural integration, the lack of unified perception of the strategy and interpretation of order, can effectively bringing about losses in corporation's overseas branches and be a source of the waste of employees' potential, which combined with missed op-

portunities on international markets could make up a discouraging record of the organization overall. Ever expanding globalization calls for standardization of systems and its organizational procedures in companies operating on international markets. Nonetheless, the managers of the overseas units are expected to act respecting the law, work out methods, adhere to social and political systems, religion and the culture of the host country. This hard-to-learn quality of being able to reconcile these two seemingly irreconcilable, so distinct tasks is a key to success. Progressing globalization requires international managers to know and to know it very well the very cultural patterns and traditions of countries in which they happened to work and sell their products and services.

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Introduction to ISO 26000

The aim of this paper is to present ISO 26000, that was adopted in 2010 as a set of international guidelines covering all activities of organizations in the field of social responsibility. In developing this text, case studies as well as literature studies were used. The article is the introduction to further research of the author.

Introduction

The origin of following ISO standards is a response to the growing awareness of the importance of issues such as: quality, stakeholders engagement, sustainable development and social responsibility. The attitude of companies and organizations towards these new requirements determines their position in a competitive environment.

The main aim of the paper is to introduce to the subject matter of the ISO 26000. It also presents the historical background of the formation of the norm and the issues that covers. It is supposed to be an introduction to further author's research in this matter and on an implementation of the norm itself in the service' sector of the economy.

It is important to analyze the problems of the ISO 26000 with its unique among other norms and problems with legitimacy. The evaluation difficulties and widely describes the discrepancies between other standards like ISO 9001, ISO 14001, SA 8000, AA 1000, are an important issue.

The beginning of ISO 26000

The ISO 26000 standard setting process started out in 2001 with an initiative of the ISO Consumer Policy Committee (Schmidt, 2013). It was followed by the formation of a multi-stakeholder ISO Advisory Group by the Technical Management Board, which examined the various organizations and active programs in the area of social responsibility (SR) regulation, and it was advisable for the ISO to also become active in the field. Technical Management Board (TMB) approved Resolution 78/2002 establishing the Advisory Group on Social Responsibilities. The Group finally recommend-

ed the creation of guidance standard on social responsibility under certain conditions. Those conditions were the recognition that a social responsibility standard is qualitatively different from previous ISO standards, the respect for existing authoritative public regulation in the field and the political nature of certain issues, proper involvement of the ILO, and finally meaningful participation of interested parties (Recommendations to the Technical Management Board, ISO/TMB AG CSR N32). In 2004 ISO held a multi-stakeholder conference that endorsed the idea of ISO becoming active in the area. In the aftermath, the Technical Management Board circulated a New Work Item Proposal (New Work Item Proposal Guidance on Social Responsibility, ISO/TMB N 26000, October 1, 2004), which was adopted by the ISO Members (Table of replies on the New Work Item Proposal Social Responsibility, ISO/TMB N 26000, ISO/TMB/WG SR N 7, February 25th, 2005[)]. A working group on social responsibility (WG SR) was launched with a mandate to develop a SR standard (ISO 26000 Project Overview, p. 8).

Due to the "very densely populated" regulatory field that ISO 26000 was entering, particular importance was placed on high degree of representativeness through stakeholder involvement. ISO therefore formed six stakeholder groups (industry, government, consumers, labor, NGOs, and a final group including service, support research and others), which were to represent different interests within the ISO/WG SR. In total 450 experts participated, joined by 210 observers from ISO Member Countries and 42 liaison organizations (ISO 26000 Project Overview, p. 8).

What is worth mentioning, the whole complex project was financed through a donation system. The drafting process in case of ISO 26000 was immensely complex, due to its goal of being as representative as possible, the necessity of not contradicting public law, combined with the ISO's usual practice of reaching decisions through consensus (Diller, 2012, p. 505).

ISO also pursued a strategy of coherence. It clearly stated that it did not want to contradict or undermine public policy. Here, however, it seems that legitimacy concerns were the predominant motive. The different conceptions of legitimacy, and how they can impact an organization's authority, particularly in a transnational setting was outlined above. Legitimacy can be managed—it can be gained, maintained and repaired (Suchman, 1995, p. 578).

The ISO 26000 process is a good example of the increase in legitimacy claims that can be achieved through a cooperative approach. Various different actors brought the expectations of their own stakeholders to the table. These could not be ignored, but had to be integrated into the process. The mirror committees, member bodies of which were asked by ISO to set up in order to represent the respective national positions, had a similar effect. In the end, the process became highly complex. It took an enormous amount of effort to integrate the very different demands originating from the diverse groups (Schmidt, 2013, pp. 31–32). The examples presented later will, at least, prove the complexity of those efforts.

The evaluation of the standard

This standard has been facing both criticism and problems revealing a number of deficiencies that were not balanced out by the cooperative process. One concerns the intrusion of the ISO into the public policy domain. Janelle Diller, for instance, criticizes the fact that "ISO did not sufficiently develop and apply the necessary criteria to justify its decision to proceed in the field of SR or to define the scope of and processes for developing such a standard" (Diller, 2012, p. 529).

ISO 26000 was not as successful as expected. A reason for this could have been the decision to make it a non-certifiable guidance. ISO 26000 defines corporate social responsibility (CSR) and how it can be implemented into the companies. In this study 65 representative German water supply and distribution companies are analyzed concerning their management instruments and CSR contribution as well as their representation of a visible and credible social responsibility (Arnold, 2014).

The research by Brandsma [et al.] (2009) confirms this: between 55% and 60% of the respondents who work with the ISO-certified or related management system standards are the one considering applying ISO 26000 in their organizations. In addition, ISO has the extensive experience with the development and dissemination of standards and has the organizational capacity to do this. Significantly, the development of ISO 26000 has been based on the largest multi-stakeholder process that has ever been organized. In addition, the guideline is applicable to all organizations, in all countries, in all stages of development, all sectors, and does not conflict with other SR standards or demands—it has no intention of replacing these. The ambition of ISO 26000, as a generic, overarching SR guideline, is to enable its integration with any existing SR or CSR standard.

The research that was conducted by Brandsma [et al.] (2009) showed that most organizations that indicated an interest in ISO 26000 are still at an early stage in terms of SR implementation: 3.33% we are currently determining our attitude towards SR, 31.42% we took the first steps in implementing SR, 20.95% we are quite far in implementing SR, 9.05% we have finished the implementation of SR and are 'maintaining' it, 0.48% we have finished the implementation of SR and are finished with our SR activities, and 14.76% we have not taken any of the steps mentioned before. Organizations that have already developed SR strategies and initiatives are more likely to apply ISO 26000 to increase the credibility of their own SR claims, e.g. by referring to the guideline in their SR communications (Gorenak, 2014).

ISO 26000 among the other standards

ISO 26000 is designed to be compatible with existing ISO standards including ISO 9001 and ISO 14001 (although ISO 26000 is not itself a management system standard capable of certification). Thus, TNCs and other organizations that are currently using ISO 9001 and ISO 14001 standards may be well-positioned to apply ISO 26000, since the approach of ISO 26000 is aligned with ISO 9001 and ISO 14001. In short, ISO

26000, as a follow-on ISO standard to the ISO 9000 and ISO 14000 series, has a pre-existing platform at a conceptual/intellectual level, and at the level of marketplace recognition and acceptance (legitimacy and authority) by organizations around the world. The incorporation in ISO 26000 of the basic "plan-do-check-act" approach found in the ISO 9000 and ISO 14000 series of standards 18 is an example of how ISO has transposed in a bottom up fashion key concepts from private standards of narrow application (quality management and environmental management) to apply to the broad SR subject matter that is the focus of ISO 26000.

In terms of the profile of ISO and its standards in the business community, it is instructive to compare usage of its standards to those of other SR instruments that emanate from entities outside of ISO. There are about 5300 business participants in the UN Global Compact [UN Global Compact], 2300 facilities have been reported to be certified to the SA 8000 standard [SAI], and around 1400 corporate responsibility reports issued in 2009 are reported to have followed the GRI reporting guidelines [Sullivan, 2011]. It is possible that it is not a coincidence that AA 1000, OHSAS 18001, SA 8000 and IASE 3000—standards on specific topics related to SR that have emanated from outside ISO—have all adopted "1000" type nomenclature for their standards: the expression "imitation is the most sincere form of flattery" would appear to apply in this respect (and the actions of non-ISO entities to so name their standards can be considered an example of isomorphic institutional behavior) [DiMaggio & Powell, 1983, pp. 147–160].

Because of the high profile of ISO and its ISO 9000 and ISO 14000 series within the business community, the decision by ISO to develop an SR standard represents a significant opportunity to "mainstream" (or diffuse) the concept of social responsibility (and hence to institutionalize it) to a wide section of businesses and other organizations that have not heretofore been reached through the specialized SR rule instruments of other entities. The fact that experts from Account Ability (developers of AA 1000), Global Reporting Initiative (GRI), the UN Global Compact (UNGC), Social Accountability International (SA 8000), the Organization for Economic Cooperation and Development (OECD, responsible for the OECD Multinational Enterprise Guidelines), the International Labour Organization (ILO, responsible for the ILO Tripartite Declaration) and other international SR rule proponents participated in the ISO 26000 working group can be seen as recognition by these other SR rule developers of the bridging (and hence "mainstreaming") potential of ISO 26000.

About standardization (ISO)

At the second level, for a document to be accepted as an ISO International Standard, it must be approved by at least two-thirds of the ISO national members that participated in its development, and not be disapproved by more than a quarter of all ISO members who vote on it. In the case of ISO 26000, the standard was approved by 93% of participating member national standards bodies [ISO/TMB/WG SR N 196].

The ISO is a non-state rule developer and lacks the basis of authority with public entities, the standard ISO 26000 may represent a real democracy model and can achieve widespread public acceptance. In spite of this, ISO 26000 was developed with the significant participation of key inter-governmental entities, peak industry bodies, labor, consumer, environmental and non-governmental organizations from developed and developing countries. The standard was created through open, structured and transparent consensus-based process with agreement of all the involved parties [Webb, 2012, pp. 1–29].

Another researcher also supported that point of view. Halina Ward views the negotiation history of ISO 26000 as a rather successful example of the novel concept of "global democracy," but urges her readers to develop more suitable theoretical frameworks as well as practical tools that would improve future standards-setting processes [Ward, 2011].

The research results gathered from 759 large and medium-sized organizations in the market services sector from the Republic of Slovenia clearly present that social responsibility strategy of the particular organization is oriented towards its financial performance and sustainable development. In addition, the long-term implementation of strategy and vision and continuous improvement in the efficiency leads to meeting the fixed objectives.

The results also confirm the findings that the implementation of principles and components of socially responsible conduct in accordance with ISO 26000 are actually linked to the size and success of an organization with regards to its revenue, profit and operational growth. The hypothesis of the organizations which adopt social responsibility principles in practice to a larger extend achieve better results and gain higher profits [Peršič & Markič, 2013].

In 2015, 162 countries were part of ISO's worldwide membership. By the end of the year 2015, the organization had published a total of 21,133 International Standards and standard-related documents. Only in 2015, ISO International Standards provided practical tools for tackling many of today's global challenges, from managing planetary water resources to driving innovation forward [ISO Annual Report, 2015] .

The standard ISO 26000 may be helpful in assessing the degree of an organisation's involvement in building the expected relationships with its environment. Also prosocial activities may provide an important competitive advantage. It may be achieved by strengthening the relationships with stakeholders, improving the reputation and a growth of confidence, which, in terms of investor relations, brings measurable benefits (Bluszcz & Kijewska, 2015, pp. 441–444).

The standard ISO 26000 presents clearly characteristics and differences between social responsibility and sustainable development. It defines the principles of social responsibility in the seven terms: accountability, transparency, ethical behaviour, respect for stakeholders interests, respect for the rule of law, respect for international norms of behaviour and respect for human rights.

Another important but worth emphasising factor is stakeholders' identification and engagement. The idea of the standard is to integrate social responsibility throughout an organization, especially through the seven core subjects: organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues and community involvement and development.

Conclusion

Social responsibility is crucial for both, business and society. The standard of ISO 26000 is one of the most widely used social responsibility standards in the world. ISO's most popular management system standards are thoroughly appreciated, as indicated by the 2014 ISO Survey of Certifications, with a combined total of almost 1,500,000 certificates around the world. Global conversations and communication surrounding the release of the new versions further underlined the importance of these two standards. The hashtags used in ISO's social media garnered impressive results. We reached over 138,000 unique Facebook users for ISO 9001 alone – the highest-ranked post in ISO's Facebook history.

It is like Vice-Chair Staffan Söderberg said during the event hosted in Sweden by the Swedish Standards Institute (SIS), that was held in conjunction with the stakeholder advisory group meeting of the ISO 26000 Post Publication Organization: "The standards use continues to increase and will result in more companies and organizations speaking the same language when talking about sustainability and social responsibility". The implementation of the standard is an impressive challenge for the organizations. Like Peter Maas said, "We identified over 400 unique measures that organizations could 'pick up' to implement ISO 26000" [Maas, 2015].

It is allowed to state that the standard ISO 26000 fills the gap among hundreds of other standards and norms. Issued by the ISO, an organization formed of 162 countries-members, is compatible to other existing standards. Thanks to that every ISO-standarized organization is well-positioned to apply ISO 26000.

Among all the advantages expressed above there is one, perhaps the most important one – the standard ISO 26000 helps organizations to build real business community and is free from any form of certification. It means that is accessible and might be an interesting source of hints for organizations of every kind.

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Sustainable transport – an option or necessity. The example of Cracow

The paper provides a short overview of the most important issues behind the sustainability problems in urban transport. Significant growth of trade, followed by increasing demand for transport, as well as growing urban mobility force the authorities to work out complex solutions on transport organization. The global need to cut carbon emissions and air pollution, at the same time as improving human development, has created the demand for accessible and sustainable transport systems. The author uses the example of Cracow, CIVITAS1 prize for sustainable development winner.

The general impact of transport

The development of civilization is inseparably linked to the development of transport. That brings social, economic and environmental consequences. The general level of awareness about the impact of transport has increased, hence the interest in new systemic solutions in the area of transport. Especially if one realizes that adverse impact of transport and transport-related activities can extend far beyond the localities from where they originated. The advantages of increased mobility need to be weighed against the costs that transport systems pose.

A large majority of European citizens live in an urban environment, with over 60% living in urban areas of over 10 000 inhabitants[2]. They live in the same space and for their mobility share the same infrastructure. With growing freight and passenger transport, the efficient transport system is a challenge.

Transport can have various impacts on a community's economic development objectives, such as productivity, employment, business activity, property values or investment. Efficient transport system can improve overall accessibility (improve businesses

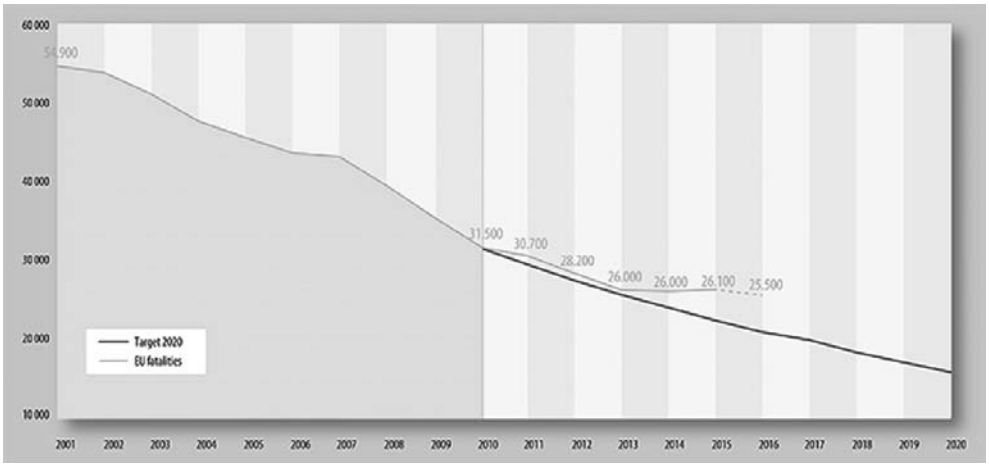
[1] CIVITAS is a network of cities dedicated to cleaner, better transport in Europe and beyond; civitas.eu

[2] Eurostat, 2016

ability to provide goods and services, and people's ability to access education, employment and services) and reduce cost of transport at the same time (including travel time, vehicle operating costs, road and parking facility costs, pollution).

As it comes to social aspects of transport, the most significant of these is its impact upon human safety (key indicator for passenger's safety are fatalities or injuries resulting from transport-related accidents). Undeniably, road transport causes most of these, in both relative and absolute terms.

Figure 1. Road fatalities in the EU since 2001



Source: https://ec.europa.eu/transport/road_safety/specialist/statistics_en

The high levels of noise and vibration caused by transport activities also give rise to social inconveniences (continued exposure to excessive noise- above 75 dB, typical of a busy urban street – can permanently impair human hearing).

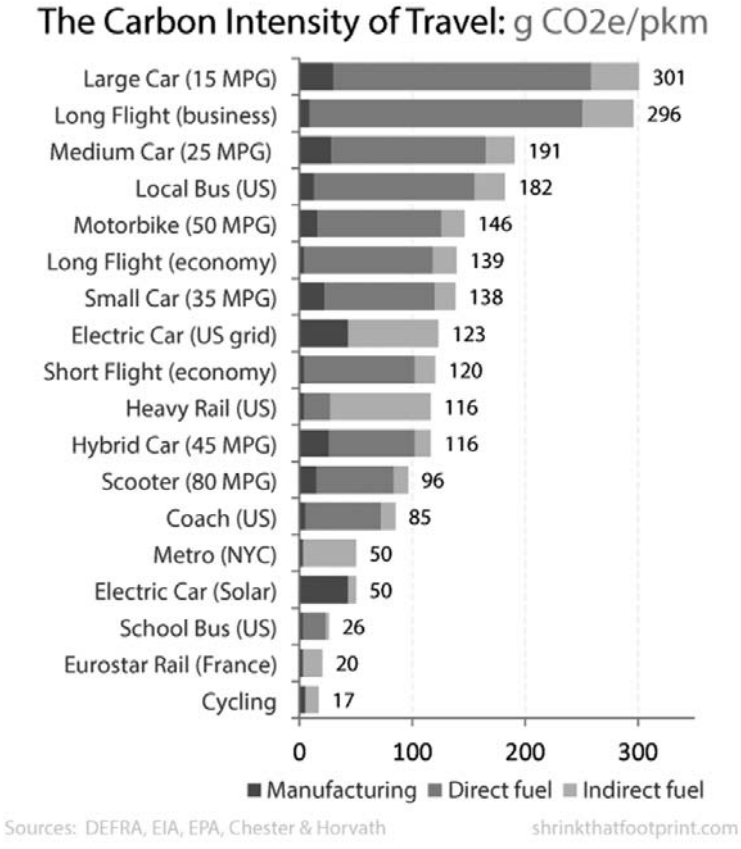
However, the development of transport has its significant benefits, eg. for rural or semi-rural population. Efficient transport system supports mobility of employees and facilitates access to social life in the city.

Beside visual intrusion on the landscape, development of transport affects the environment. Environmental aspects include all the adverse side effects of transport on the environment, including air and water pollution, noise, vibration, visual impacts, social impacts and waste disposal. The most widely discussed aspect of environmental impact of transport is not the infrastructure itself but the way it is used.

Urban mobility accounts for 40% of all CO2 emissions of road transport and up to 70% of other pollutants from transport[3].

[3] www.epa.ie

Figure 2. Comparing carbon intensity of different types of passenger transport (per passenger kilometre)



Source http://shrinkthatfootprint.com/5-elements-of-sustainable-transport

Environmentally friendly actions require not only significant development of new transport technologies, but also considerable changes in operating practices, both in the transport industry and in transport behaviour. It might be achieved through mode switching and – in the longer term – through changes in land-use planning.

The concept and issue of sustainability

Sustainability seems to become one of the most important issues of modern world. The key objective of sustainable development is to integrate economic, social and environmental policies at the local, regional and global levels (Ministerstwo Środowiska, 1999); Implementation of sustainable development is related to a fundamental change in how to proceed, taking into account the integrated interdisciplinary approach (Urbaniec & Halavach, 2008; Borys, 2011, pp. 75–81).

Given below are some definitions on what constitutes sustainability and sustainable development.

The World Commission on Environment and Development defines sustainability as "*a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations".*

"*Sustainable development is a dynamic process which enables people to realise their potential and improve their quality of life in ways which simultaneously protect and enhance the earth's life support systems*" (Forum for the Future)

In economics sustainability is defined as "*continued development or growth, without significant deterioration of the environment and depletion of natural resources on which human well-being depends*"[4]. This definition measures income as flow of goods and services that an economy can generate indefinitely without reducing its natural productive capacity.

There are few- more or less precise- definitions of sustainable transport. One follows closely the famous definition advanced in the Brundtland Report, describing sustainable transport as "*satisfying current transport and mobility needs without compromising the ability of future generations to meet these needs"*[5].

*Transport that minimizes harmful effects on the environment and the depletion of natural resources, such as walking, cycling, and fuel-efficient public transport, and hence can be sustained in the long term (*English Dictionary*)*

"Transport and mobility with non-declining capital, where capital includes human capital, monetary capital, and natural capital" (Black, 2010).

Summarizing the definitions above, sustainable transport should meet three conditions:

- the rate of use of renewable resources does not exceed their rates of regeneration;
- its rates of use of non-renewable resources do not exceed the rate at which renewable substitutes are developed;
- its rates of pollution do not exceed the assimilative capacity of the environment.

As it might be assumed, the definitions are concerned primarily with environmental sustainability, but there are social and economic factors as well, such as safety and the monetary cost of congestion, that should also be taken into consideration.

Benefits from sustainable transport system

Using more sustainable modes of transportation provides benefits both for citizens and the city. These include:

- reduced air pollution and related risks
- reduced greenhouse gas emissions
- reduced traffic congestion
- reduced dependence on non-renewable energy sources
- reduced transportation costs

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[4] http://www.businessdictionary.com/definition/sustainability.html

[5] Bruntland Report for the World Commission on Environment and Development (1992)

- support for local businesses and a vibrant economy
- increased physical activity
- increased social interaction
- healthier lifestyles and a better quality of life

Sustainable Transport at EU level and in National Policy

Transport is a major contributor to the economy (4.8% – or €548bn – in gross value added overall for the 28 EU countries), and sustains over 11 million jobs in Europe. At the EU level, an important role in the implementation of sustainable development is played by the Strategy for Sustainable Development of the European Union[6]. The European Commission worked out The Sustainable Urban Mobility Plan, a part of SUM package. The concept considers the functional urban area and assumes that plans are developed in cooperation across different policy areas and sectors, across different levels of authority and in cooperation with citizens. The Commission has actively promoted this concept for several years. Guidelines were developed, which provide local authorities with a clear framework for the development and implementation of such a plan. The role of member states is to promote those practices at national level and to ensure the right legislative and support conditions for their local authorities.

Major challenges for European transport are[7]:

- congestion – it costs Europe around 1% of annual GDP,
- oil dependency – despite improvements in energy efficiency, transport still depends on oil for 96% of its energy needs,
- greenhouse gas emissions – by 2050, the EU must cut transport emissions by 60% compared with 1990 levels, if we are to limit global warming to an increase of just 2°C.
- infrastructure quality is uneven across the EU.
- competition – the EU's transport sector faces growing competition from fast-developing transport markets in other regions.

The European Commission is working towards a form of mobility that is sustainable, energy-efficient and respectful of the environment. These actions should result in implementation mechanisms that could bring about a sustainable transport system predicated on the reduction of CO2 emissions and non-renewable resource use and which produces more socially equitable outcomes.

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[6] Approved in May 2001 by the European Council in Gothenburg, renewed in June 2006; It includes long term directions of social, economic and environmental changes. To support this development, the "Europe 2020 A strategy for smart, sustainable and inclusive growth" was adopted by the European Commission in 2010. It includes three interrelated priorities; smart growth, inclusive growth and sustainable development, which aims at reinforcing a more resource efficient and more competitive economy (European Commission, 2010; Jäger, 2009, pp. 5–11).

[7] www.europa.eu

Significant shift to clean and sustainable transport is essential to improve the quality of life and health of EU citizens and to meet the EU's climate objectives.

Polish law needs to keep up with that shift. In Poland the sustainable development concept has been recognized as a constitutional principle. According to Article 5 of the Constitution of the Republic of Poland, dated 2 April 1997, "the Republic of Poland shall safeguard the independence and integrity of its territory and ensure the freedoms and rights of persons and citizens, the security of the citizens, safeguard the national heritage and shall ensure the protection of the natural environment pursuant to the principles of sustainable development" (Konstytucja Rzeczypospolitej Polskiej, 1997, art. 5). The concept of sustainable development is also found in other legal acts:

- "Poland 2030. Development Challenges" (Boni, 2009),
- "The National Development Strategy 2020. Active society, competitive economy, efficient state", an update of the National Development Strategy 2007-2015, accepted by the Council of Ministers on 25 September 2012 (Council of Ministers, 2012)
- Transport Development Strategy adopted by the Polish Government, January 2013
- The Long-term National Development Strategy "Poland 2030. The Third Wave of Modernity", (Ministerstwo Administracji i Cyfryzacji, 2013).
- "Poland's Climate Policy – the Strategies for Greenhouse Gas Emission Reductions in Poland until 2020",
- "Strategy of Changing Production and Consumption Patterns to Favour the Implementation of Sustainable Development Principles",
- "National Transport Policy for 2006-2025"
- Ministry of Infrastructure and Development – support for local governments, e.g. Guidelines – Shaping Street Space in City Centers, December 2013
- Draft of National Urban Policy – Ministry of Infrastructure and Development, March 2014

Sustainable transport system in Cracow

Cracow is the second largest city of Poland with about 765,000 permanent residents (the Cracow conurbation totals some 1.5 million people)[8]. Over twelve million visitors take a trip to Krakow every year[9]. Many arrive and/or leave by air, but most take advantage of the fact that Krakow lies at a major European road and rail junction. That number of passengers is a challenge for the city, especially when it comes to transportation system. That makes improvement and rationalization of public transport necessary. Punctuality, speed, comfort, low cost, a dense network of connections, and the possibility of easy transfers are the main elements that can make people use the public transport.

[8] GUS 2016 r.

[9] According to Cracow Chamber of Tourism

On the 28th of August 2013 r. the City Council of Cracow released *The Plan for the Development of a Sustainable Public Transport System in Cracow*, that included the state of spatial development, the impact of transport on the environment, the requirements of sustainable development of public transport, in particular the needs of people with disabilities and people with reduced mobility.

The document defines such elements as:

- communication network (where the public transport is planned),
- evaluation and forecast of transport needs and preferences for the type of means of transport,
- the desired standard of transport services in public transport and the anticipated way of organizing the passenger information system.

Cracow authorities defined several purposes of transport policy:

- reduction of pollution emission and noise caused by motorization,
- decrease of demand for space and energy consumption derived from transport,
- improvement of access to all parts of the city,
- improvement of the environmental situation and public health in Cracow.

To achieve these goals, specific means were defined:

- rationalization and development of public communication,
- reduction of motorized traffic.
- introduction of bicycles as a means of mass transport in the city,
- integration of various kinds of transport, making pedestrian traffic, bicycle traffic, and public transportation a priority.

In Cracow one can find few systemic solutions to the problem of municipal transport that positively influence the sustainable development of transport. Municipal transport offers a number of sustainable commuting options including carpool matching services, subsidized bus passes, rebates on train tickets, and other convenient, cost-effective options that can significantly reduce transportation expenses. The city offers ca. 140 km of cycle routes and advanced bike-rental system. Public transport is using separated parts of roads. This means a punctual, easy ride on public transport and difficulties in using cars, especially in the centre of the city. Separated tram tracks make their use by buses possible. The main urban carrier MPK invested in environmentally friendly buses, that use solar or electric energy.

In 2016 the city won The "Transformations" Award for significant transformation and progress towards a liveable and smarter city through an integrated set of mobility measures.

The jury justified its choice as follows: "*attractive new pedestrian streets, fabulous new biking lanes, great new public transport routes, and an overall transformation around the city's UNESCO-designated old town. With one of the longest car-free street networks in the world and large scale reallocation of road space, along with significant improvements in limiting greenhouse emissions, Krakow has shined this year above the other contestants in this*

category". It was mentioned, that reducing cargo traffic in the city was also significant for the choice – Cracow invested in bypasses, that relieved city centre from trucks and reduced pollution.

Summary

One of the most crucial challenges that modern world faces is to develop transportation systems that ensure economic growth, but at the same time are sustainable and preserve the ecosystem. In an increasingly globalized world, with rapid population mobility and growing demand for goods, sustainability is not so easy to achieve. On the other hand, the growing level of environmental awareness among authorities and citizens helps to work out solutions to the challenges and opportunities that transport growth poses. Cracow is an example of a well-organized community, working towards sustainability, especially in the area of transport.

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Management Challenges in a Network Economy. Digital Transformations of Business Models

The aim of this paper is to determine the prospects for the business pursuit changes in the area of modern technology, which transform the reality around us. The conducted analyses indicate that the crucial change trends are: decentralisation, networking, application of modern technologies as well as the development of the modern information society. The expected changes may result in: a lower age of operational managers and profound elitism of strategic managerial positions, improved knowledge of all social and economic phenomena important in decision making, evolution of cost based business models towards the change from fixed costs to variable costs and changes of the current business models.

Key words: new technologies, management paradigms, information society, cloud computing

Introduction

In the 19th century the industrial revolution changed the social environment and gave rise to scientific management. The changes observed nowadays will result in a bigger technological revolution and the need for the verification of management rudiments and the indication of new elements of a new management paradigm. The paradigms to rule the contemporary reality were exceptionally accurately described by Robert Nasbitt in his work entitled *Megatrends* as early as in 1982. He pointed to such trends as decentralisation, networking, high technologies or information technology. Today, we can see these paradigms work in practical terms. Many areas of contemporary life are marked with new changes. It is a permanently increasing complexity of new technologies, the development of information and communication techniques, the aforementioned networking, globalisation, social innovations as well as higher customer

demands that pose new challenges for management. At present, we refer the term turbulence to describe the character of the environment and what we mean here is the rise in the novelty of change, the rise in the intensity, the rise in the pace of change and its growing complexity (Ansoff, 1985, p. 58) in business. Some changes have a bigger impact on the business pursuit than others. If we have a close look at the transformations in the business environment, we may risk a statement that the environment is determined by the access to information – the economy itself becomes informational because productivity and competitiveness depend on the application of information. It is global as management processes are of the global scope, either directly or thanks to the network connecting economic players. It is a network as under the new historical conditions, productivity and competition arise among corporate networks (Castells, 2007, pp. 85–86).

Information society

Castells also claims that the present day economy is not in contradiction with the industrial era, it constitutes its advanced development. In the former era, knowledge and information processing were also a source of productivity growth, but it is the development of information and communication technologies that allowed for their effective use. The most significant feature of today's economy is the implementation of productivity potential included in a mature industrial economy as a result of the shift to a technological paradigm based on information technologies (Castells, 2007, p. 105). It is accompanied by many social changes, also those related to corporate management.

Thus, we are living in the Information Society, which basically differs from the way the Industrial Society works. This term was made popular by Bell, Castells and Naisbitt. The term information society is derived from Tadao Umesamo, who used it in 1963 in his article on the evolutionary theory of society based on information industries. The Japanese understood that as a matter of fact it was about something more important than just the ordinary universality of computer technologies.

Increasingly more research centres and practitioners are posing a question related to the extent to which the new technologies and inventions as well as technological innovations emerging all the time can change modern business models. The presented article entitled Management Challenges in a Network Economy – Digital Transformations of Business Models includes the following items:

1. The introduction of the term information society,
2. Information management,
3. New technologies from the macroeconomic perspective,
4. IT in corporate management,
5. Cloud Computing – processing in the cloud (one of the most modern information technologies),
6. Business model changes.

Information management includes such activities as the introduction of new office work automation, management systems, customer relationship management (CRM), telecommunications systems construction, integration of information systems applied at different management levels, design of innovation and adaptation activities as well as the creation of conditions to allow for effective relationships between companies and the information market.

John Goddard already in 1992 indicated four related elements in the transition from a traditional to information society:

- information is becoming a „crucial strategic asset" the organisation is based on,
- computer and communication technologies create an infrastructure to allow for data transmission and processing,
- there is an extraordinarily fast growth within the commercial information sector,
- the growing informatisation of economy facilitates the integration of national and regional economies.

The development of information society means a possibility of prompt transmission of enormous amounts of information to any places in the world and the creation of information society, and the knowledge based economy led to the disappearance of traditional communication barriers between people. The corporate competitiveness depends on innovativeness and possessed knowledge.

Presently, the information reality is marked with the following characteristics:

- information is the most significant raw material,
- the effects of new information technologies penetrate all the areas of life,
- all systems applying these technologies have to follow the network logic,
- flexibility: not only processes are reversible; organisations and institutions may also be modified, and even thoroughly changed through the reconfiguration of their components,
- the convergence of every technique and technology into one integrated system, microelectronics, telecommunication, optoelectronics and computers are integrated and create information systems.

The most important characteristics of the new society and new economy shaping the current management may be indicated as follows (Grudzewski, Hejduk, Sankowska, 2008b; Senge, Scharmer, Jaworski, Flowers, 2004; Sztompka, 2007):

1. Knowledge and gradually also social capital replace economic capital as a basic source of value creation. They are the sources of productivity and growth.
2. In the knowledge based economy huge profits may be generated within the knowledge intensive sectors, but where they are generated is subject rapid change (Thurow, 2006, p. 22). Knowledge in these sectors is a source of competitive advantage provided that, contrary to other resources, it keeps developing while being used (Evans, 2005, s. 22).

3. Economy with regard to intangible assets works in a different way than in the case of tangible assets. In particular, it refers to the law of declining marginal effects. The growth in the use of an intangible factor, such as for example reputation, leads to the increase in marginal benefits on account of its use. It causes a growing interest in management soft elements like reputation or trust.
4. We are living in the world of networks and knowledge which include work network, social network, new ideas network, established experts network, strategic network and learning/ improvement network (Stephenson, 2006).
5. The last crisis and corporate scandals confirm the thesis that markets work effectively only when supported by social institutions based on trust and societies (Kay, 2003). The problem of trust acquires more and more significance.
   Already in the June edition of 2009 of Harvard Business Review there were a few articles devoted to the issue of trust (Kramer, 2009;Toole, Bennis, 2009; Podolny, 2009). They emphasized the problem of trust, which until recently had been ignored, remaining outside the mainstream of considerations. The arguments on the necessity for trust belong to the strongest to be put forward in social sciences;
6. The present time is more and more often called the *Age of Transparency*, when honesty and transparency (Bennis, Goleman, Toole, 2009) as well as trust are in need much more than ever.
7. An average corporate lifetime has become shorter due to a more intensified competition as well as changes in technologies or needs.
8. The profile of an employee is changing – an expert or a professional who, thanks to their knowledge, may create a corporate value. Spontaneous communities of experts, in compliance with the idea of Wikinomics provide new possibilities (Tapscott, Williams, 2008) thanks to the art of cooperation of companies, organisations and entities. Teaming is becoming a necessity when designing and providing goods and services.
9. Work is more and more complex in character and often comes as a result of cooperation of many entities. In countless situations we rely on efficiency, responsibility and good will of anonymous people.
10. There is a growing need for the development of appropriate organisational cultures based on social capital to allow for a sustainable development in the unstable, complex and globalised world.
11. We may observe a transformation of control based on hierarchical structures into the world of networked institutions, called heterarchy (Fairtlough, 2005; Ogilvy, 2002; Stephenson, 2006). The best example of a heterarchical network is relationships between neurons. We can observe a change in the central authorities depending on the context or competence.
12. We possess fewer and fewer well qualified talents together with the growing size of business pursuit. New technologies require high skills and preparation. In western societies young people unwillingly undertake natural of technical fields of study. It

will result in the shortage of staff connected with the "knowledge gap" due to the retirement of employees from the generation of baby boomers. For example in the energy sector an average age of employees is between 46 and 49, and a typical age for people to retire is 55 years of age (Lewis, 2007). A new function of management comes into being: organisational knowledge continuity management, which is staff related (Beazley, Boensich, Harden, 2002).

New technologies from the macroeconomic perspective

Presently, economy is based on creativity, popularisation and application of knowledge included in plans and strategic programmes, and new technologies play an important role in the economic growth stimulation and extension of employment possibilities. One can observe the use of economies of scale, reduction in administrative and financial costs, an easier access to private and public sectors of economy and improvement in their cooperation. In the last years there was an unexpected rise in migration of people from rural to urban areas. In 2007 it was recorded for the first time that the urban population (3.2 billion) exceeded the rural population of 3.1 billion (Rugemer, 2008). This trend will give rise to many problems connected with the protection of environment. It is also accompanied by the outflow of workers from the agricultural and industrial sectors to the knowledge sector.

More and more employees come from generation Y, whose life style basically differs from that of the generation of baby boomers. The recruitment of talented staff is a very important challenge for companies willing to have a leading market position. Generation Y have a different approach to work, they are more relationships and work friendly atmosphere oriented. They change workplaces more frequently, which, from the point of view of reduction in the value of human capital, constitutes a potential source of corporate losses. A new model of an employee is a freelancer (Koźmiński, 2004).

Besides the term of *knowledge based economy* introduced by OECD, another term is used today: *attention economy* to call the present day reality and to emphasize that in the world of constantly growing supply of information, the attention and ability to maintain it are becoming an important resource. There is a growing competition aimed at the acquisition of customers' attention. Attention economy refers to the transactions that do have a pure form of market transactions (for example an advertisement or product purchase), but assume non-market forms, such as an interesting presentation, acquisition of favour, trust, having a conversation, comradeship or friendship (Fazlagić, 2006, p. 24). It is connected with a skill of turning thoughts and minds of other people in the desired direction (Aluchna, Pindelski, Mrówka, Obłój, 2008, p. 16).

The role of managers is also changing in the modern world. A. Koźmiński forecasts the end of domination of managers (Koźmiński, 2008). The present change dynamics and new kinds of risk clear the way to leadership, which requires many different competences.

IT in corporate management

Information and knowledge are regarded to belong to the most important factors of business pursuit. The introduction of modern technologies allows for a better use of corporate assets, and a fast development of information and telecommunication technologies gives rise to the need for corporate reorganisation. There are new possibilities of organisation of work, and information systems provide tools which have no equivalents in the classical information processing. Their application may become a chance to acquire a considerable competitive advantage. Modern information technologies are very well matched with the paradigm of a learning organisation.

From the point of view of managers, the most important elements of the information technology are those that, adequately applied, allow for a considerable improvement in the quality or efficiency of the management process. Development activities in every area create demand for new, more efficient methods of data processing and coerce technological progress (application of mobile technologies or using social media for business purposes).

In order to cope with the current challenges, efforts should be made in the following directions:

- to support companies to adjust to the global and internally dependent competition;
- to use all possibilities of shifting to the information and knowledge based economy;
- to develop educational processes according to the requirements of the information civilisation;
- to support innovativeness with research development;
- to adjust the information infrastructure to small and medium-sized enterprises.

The structures and hierarchies go blurred, with many functions ascribed to them disappearing. We have to do more and more often with projects and undertakings and there are fewer and fewer repetitive activities. The values are created by the intellectual capital rather than by tangible assets. Tangible assets are volatile and temporary in character; the roles and functions of market entities are subject to change. Virtualisation processes change many areas of operation of companies which seek sources of competitive advantage in, for example, access to information, knowledge, customer and business partner relationships.

At this background, in this publication I intend to determine the prospects for further changes in business pursuit resulting from transformations in modern technology, which may radically transform the reality around us in the nearest future. The areas to be changed are closely connected with information technology, including the cloud computing technology. The common access to this technology gave rise to its mass scale adoption, and consequently the creation of new business models or restructuring of the existing models. The way modern companies generate profits largely depends on the applied information technologies.

Nicholas N.G. Carry describes two kinds of corporate information technologies in the article published in the *Harvard Business Review (HBR*) entitled "*IT doesn't matter":*

– proprietary technologies and what may be called infrastructural technologies. As long as they remain protected, proprietary technologies can be the foundations for long-term strategic advantages, enabling companies to reap higher profits than their rivals. Following this theory, companies should focus on the creation of value connected with proprietary technologies and build their business models around them. Infrastructural technologies, in contrast, offer far more value when shared than when used in isolation. Interestingly, as indicated by Carry, at an initial stage of development, the infrastructural technology may have the form of proprietary technology. A perfect example of infrastructural technologies and their common accessibility is the IaaS model of the Cloud Computing Technology.

Therefore, companies like Netflix, AirBNB or UBER , whose business models we admire today, decided to purchase the infrastructure in cloud computing and focus on the creation of values connected with proprietary technologies, i.e. SaaS services.

The changes I refer to in this article will generate common applications of the latest technologies not only in business, but also in the area of individual consumption, which will contribute to radical reduction in unit costs of information technology solutions as well as a fast growing demand for quality, productivity, computing power data storage of technological solutions in the consumption area. There will be very significant changes in the perception of identity of objects making up the technological environment surrounding humans with the human identity (which on its own may become dangerous).

Cloud computing

Cloud computing is treated today as the largest revolution in the area of popularisation of technology since the beginning of human civilisation, compared with the massification of the products of the technological revolution at the beginning of the 20th century.

At present, we are in the middle of this revolution (the third stage) consisting in the speed of transmission and accessibility of data, called connectivity revolution. Our civilisation has already gone through the first stage of fascination with the computer hardware and software and the second stage consisting in the admiration for the processing speed and the third one focusing on the zero cost of big data storage. Mankind is facing the last, fourth stage based on

the widespread accessibility to applications/tools making use of data in order to create information and knowledge improving the decision making quality.

Cloud computing is already a common technology in the area of consumer Internet. It is far less common in business, where this novel concept has not been stabilised yet and gives rise to much disinformation and confusion in the companies which are

trying to make use of it. Nevertheless, it is estimated that within only a few years the use of this technology will become widespread. Its development is driven primarily by:
- growing standardisation of search engines and their applications,
- growing miniaturisation and standardisation of IT devises,
- dynamic development of mobile devices.

This process primarily consisting in virtualisation of resources and IT tools has been observed since 2009, when the cloud computing model began to be gradually absorbed in the area of business. This process may run at the following stages:
- implementation of start-up applications in the cloud, with insufficient standardisation and competition and frequent anxieties of suppliers of goods and services about for example security;
- internal migration to a private cloud, but without the effect of scale, consequently without respectively large savings;
- initial domination of the private cloud, overcoming of a mental barrier of anxiety about the application of a public cloud (anxiety about data security);
- shift from the model of processing on request – generational exchange of business managers is necessary then (change resistance is very strong then).

A common use of services and tools in the cloud computing technology in the consumer sector will give rise to the final acceptance of this technology in the business sector, where especially in the area of small and medium-sized companies there are strategic benefits correlated with this technology as for example:
- significant rise in corporate flexibility and speed of reaction to dynamic business bargains,
- better and faster processing in the chain – "data, information, knowledge, understanding,"
- more effective protection of data and applications,
- ensuring better communication between people and providing them with empowerment,
- improved efficiency and effectiveness in undertaking activities,
- better use of resources to increase the value of IT,
- reduction in/shift of capital spending as well as (sometimes) operational capital,
- increased quality of services or launching new services and goods to maintain the corporate growth.

The application of the cloud computing technology, which poses a number of operational risks related to:
- migration of current applications/software and data to the cloud;
- access to the Internet;
- interoperationality between cloud and operator's choice;

- agreement flexibility;
- data security;
- relationships with the entities with which the user cooperates in the cloud.

It is commonly believed that today it is
– the greatest revolution in ICT since the shift from mainframes to the client-server computing concept;
– the greatest revolution in the way IT services are provided and consumed;
– an innovative concept of IT services organisation, which has not been stabilised yet and gives rise to much disinformation and confusion in the companies which are trying to make use of it.

The last stage of popularisation of this technology is giving access to applications/tools using the data to create information and knowledge improving the decision making quality. In the data separation scheme for cloud computing there is a term *cloud broker*. It is a modern model providing information technologies, including proprietary technologies, for organisations and end users. A marketplace operating in the scheme of a multilateral platform may be a cloud broker. Multilateral platforms associate two separate but mutually related groups of customers. Such platforms are valuable for one group of customers only if there is a chance to get in touch with the other group. The platform generates value creating conditions for representatives of different groups to cooperate. A multilateral platform gains in value attracting new users. This phenomenon is called the *network effect*. Around the platform an appropriate ecosystem of suppliers and recipients is built immediately. We can observe it on the example of distribution of mobile applications through Apple Store, Google Play or Windows Store. We can see a similar phenomenon in cloud computing. The providers of a computing cloud give access to the marketplace, around which software producers and buyers gather. Like new models providing business technologies appearing on the market, revolutionary changes they offer give rise to far reaching changes in business models.

R. Amit and Ch. Zott describe a business model as a content and structure of transaction, and also the management of these transactions designed in such a way as to create value through making the most of business chances.

Business model changes

According to M. Porter a business model is a description of corporate activity generating profit. It boils down to the definition of the role of organisation in the value chain in which it operates. In a complex approach, it is about a method adopted by a company thanks to which it will develop and use resources in such a way as to offer customers a higher value than that proposed by the competition. Thanks to it, the company will generate higher profits, and it may even gain and maintain a competitive advantage. K. Obłój defines a business model as a "combination of a corporate strategic concept and

the technology of its practical implementation, understood as building a value chain allowing for an efficient exploitation and restoration of resources and skills." He claims that a business model should answer the following questions:

- ☐ What will the company do?
- ☐ What are its basic resources and competences?
- ☐ In which way are the resources and competences configured in everyday operational practice?

K. C. Laudon and C. G. Traver distinguish eight key elements affecting business models:

1. Value proposition : why should customers buy from you?
2. Revenue model: how will you make money?
3. Market opportunity: on which market will you operate and what is its value?
4. Competition environment: who else operates on this market?
5. Competitive advantage: what advantages will your company bring to the market?
6. Market strategy: how do you intend to promote your products to attract customers?
7. Organisational development: what kind of organisational structure is necessary to implement your business plan?
8. Management team: what experience and skills do corporate leaders need?

All this makes companies extremely flexible if they want to survive on the market.

Business activity models and innovations are subject to "ageing" quickly. In order to remain at the leadership forefront, companies and their managers should look ahead into the future as the concentration on the present does not guarantee a competitive position any more.

Therefore, every day we watch the *new* business come into being, as the *old* inadequate systems are collapsing. In the knowledge based economy creativity, intelligence and ideas are key competences of *durable* business. It seems to be a proper formula of the *new business logic*. It requires understanding of many crucial areas of the present day business reality.

In the approach adopted by Alex Osterwalder called *business model canvas*, the reality in which a company operates is described by means of nine elements:

1. Customer Segmentation.
2. Value Proposition.
3. Channels.
4. Customer Relationships.
5. Revenue Streams.
6. Key Resources.
7. Key Activities.
8. Key Partners.
9. Cost structure.

In business models, like in architecture, we may distinguish certain patterns. "Pattern in architecture is the idea of capturing architectural design ideas as archetypal and reusable descriptions" said Christopher Alexander. John Hagel and Marc M. Singer created the term of unbundled corporation. This concept is based on the assumption that there should be three kinds of business activity: customer relationship management, product innovation and infrastructure management. iki/Business_Model_Canvas 26.03.2016 economic, competitive and cultural. Three indicated kinds of activity may coexist within one corporation, but it is optimal to unbundle them into three separate units, which allows for the elimination of conflicts and undesired compromises. The sector of cellular telephony is a good example of the unbundled corporation.

Conclusions

Modern technologies, especially in the IT area, have increasingly large impact on the operation of a modern company and set the direction of changes in corporate management systems, as well as in social life. The corporate structures and hierarchies go blurred, with many functions ascribed to them disappearing. There are new business models which nobody seems to have thought about until recently.

We deal more and more often with projects and undertakings and there are fewer and fewer repetitive activities. The values are created by intellectual capital rather than tangible assets. Tangible assets are volatile and temporary in character; the roles and functions of market entities are subject to change.

Virtualisation processes change many areas of operation of the companies which seek sources of competitive advantage in for example access to information, knowledge, customer and business partner relationships.

At this background, this paper determines the prospects for further changes in the business pursuit resulting from transformations in modern technology, which may radically transform the reality around us in the nearest future. Moreover, last year (2016) some breakthrough technologies able to change the world appeared on the market. The leading research companies, institutes and media publishers are forecasting further changes of this kind in the next years. The may become a breakthrough not only in corporate activities but also in our everyday lives.

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New Developments in anti-tax avoidance mechanisms

Anti-tax avoidance mechanisms and methods of avoiding double taxation can significantly predetermine the tax burden of international investment. The taxation of corporations or partnerships engaged in international activities will be associated with uncertainty to a greater extent, such as entitlement to treaty benefits. International planning opportunities become even more complex if the contracting states differ in their tax treatment of business transactions or investment. A related issue is the need by governments to protect the base of their corporation tax, inter alia through anti-tax avoidance mechanisms.

1. Introduction

One of the effects of a rapidly growing global marketplace is an increased use of tax planning instruments in international business transactions or investment. There is rather a plenty of different, often complex, problems related to international taxation. Taxation of multinational companies has recently come under review in connection with the BEPS project. Base erosion and profit shifting (BEPS) refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations.[1]

From the perspective of tax administration, anti-tax avoidance mechanisms and methods of avoiding double taxation play a key role. They can significantly predetermine the profitability of international investment. Two alternative methods exist for preventing the double taxation: (1) the taxes paid in the other country can be credited, or (2) the income concerned can be exempted.

Poland has more than 90 double tax avoidance treaties ("DTT") in place. Most of these were concluded after 1990 and conform to the Organisation for Economic Co-operation and Development (OECD) Model Tax Convention on Income and on Capital ("OECD-MC"). The OECD Model Tax Convention as an official recommendation for Double Tax

[1] For BEPS project see http://www.oecd.org/tax/beps/

Treaties concluded by many countries, including Poland. Its regulations, although unbinding, are widely accepted. First of all, OECD-MC aims at sustaining cross-border movements of goods, services, capital, technology and persons by providing legal means which help contracting states to exchange data and understand norms unequivocally.

It should be noted that representatives from over 70 jurisdictions[2] on 7 June 2017 signed a multilateral convention to implement tax treaty-related measures to prevent base erosion and profit shifting ("MLI"). The MLI does not override or amend existing bilateral tax treaties, but is applied alongside the covered tax agreements, modifying their application in order to implement BEPS measures.[3] The practical effects of its implementation will depend in particular on the choices and reservations made by the signatories.

The MLI will only enter into force three months after five countries have ratified, accepted or approved it. Once ratified, the MLI provisions chosen can potentially apply to all covered tax agreements specified by the countries, although a specific covered tax agreement will only enter into force after the parties to that treaty have ratified the MLI. The first modifications to covered treaties are expected to become effective during the course of 2018.

Polish authorities announced its position on 78 income tax treaties will be covered by the MLI. However, not all of these tax treaties are with countries that have signed the MLI. Poland's position Poland's position includes in particular the introduction of:

- tax credit method as a general mechanism for avoiding double taxation,
- limitation on benefits (LOB) clause,
- principle purposes test (PPT),
- real estate clause to the income tax treaties.

However, amendments to the permanent establishment provision should will not be introduced.

This article is designed to introduce the meaning and the consequences of the amendments resulting from the MLI for Polish tax practice. It aims to examine anti-tax avoidance mechanisms and methods of avoiding double taxation and to focus on the key modifications introduced by the MLI, such as tax credit method or prevention of treaty abuse.

At a minimum, tax treaties should include either:

- a principle purposes test (PPT) rule;
- a limitation on benefits (LOB) rule supplemented by a mechanism, such as a restricted PPT rule, that would deal specifically with conduit arrangements; or
- a combined approach.

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[2] See the list of signatories and parties to the MLI: http://www.oecd.org/tax/treaties/beps-mli-signatories-and-parties.pdf .

[3] See the final BEPS package for reform of the international tax system to tackle tax avoidance: http://www.oecd.org/tax/beps-2015-final-reports.htm including Action 15 Report: Developing a Multilateral Instrument to Modify Bilateral Tax Treaties

2. Methods of avoiding double taxation

The relevant aspects of the tax system include the extent to which worldwide income generated by a multinational company is taxed on receipt by the parent company.

A worldwide income of a Polish tax resident is subject to income taxation in Poland (country of residence). Residence of corporations for tax purposes depends on their seat or head office in the territory of Poland. Residents are liable to pay income tax on the entirety of their income regardless of where it has been generated. There is a clear differentiation between the unlimited tax liability and the limited tax liability. Taxpayers who do not have their seat or head office in the Polish territory, shall be liable to pay tax only on Polish source income (limited tax liability).

When a resident of one country earns income from a source in another country, the possibility of double taxation arises because one country may tax that income on the source principle whereas the other country may tax it on the residence principle. Generally, double taxation is eliminated by double tax treaties (Article 23 A/B OECD-MC). Levies paid in the state of source are exempt or credited against other incomes generated by the taxpayer in the state of his residence. Articles 23A and 24B of the OECD-MC provide 2 methods for elimination of double taxation to diminish beneficial owner's overall tax burden:

- "exemption method" enabling to diminish worldwide income with the amount of income generated in the state of source excluding it, thereby, from further taxation in Poland;
- "credit method" which allows crediting the appropriate amount of tax paid abroad against the tax levied in the state of residence (Poland).

In the current double taxation avoidance treaties concluded by Poland, the exemption method is dominant in terms of business income and labor income. Using this method means that income sourced in the other treaty country is not subject to Polish tax. Therefore, the exemption method eliminates double taxation. However, such income will still have an effect of raising tax rates on other income items (this is known as exemption with progression).

The credit method is currently less common and applying in particular to dividends, interest or royalties. Foreign-sourced income is taxed in Poland but the tax paid in another country is subtracted. However, the maximum amount of tax credit is the amount that Polish tax rules would require as the tax on the income concerned. Consequently, if the foreign-paid tax is higher than the maximum tax credit, the difference will not be credited. An example of such a treatment includes in particular the situation where foreign tax rates are higher than the corresponding rates in Poland.

Therefore, the credit method may either diminish or remove the overall tax burden on incomes – if the tax rate in Poland is lower than the tax rate in a foreign state. All income generated by taxpayers is subject to exactly the same treatment from a tax standpoint, regardless of where the income was generated. Therefore, foreign income is treated by the credit method in the same way as domestic income.

In many tax systems a distinction between "passive" and "active" income is present. Passive income is typically defined to include, for example, interest, royalties or capital gains. The tax credit method applies often to passive income arising abroad.

As a result of the MLI implementation[4], the approach of Poland will change significantly in favor of the credit method. The MLI provides three options that can be chosen by each contracting jurisdiction. Each country may choose to apply Option A, Option B, Option C, or may choose to apply none of the options. Where each contracting country chooses a different option or where one contracting country chooses to apply an Option and the other chooses to apply none of the options, the Option chosen by each contracting country shall apply only with respect to its own residents.

Option A

Provisions of a Tax Agreement (DTT) that would otherwise exempt income derived or capital owned by a resident of a contracting country from tax in that country for the purpose of eliminating double taxation shall not apply where the other contracting country applies the provisions of the DTT to exempt such income from tax or to limit the rate at which such income may be taxed. In the latter case, the first-mentioned country shall allow as a deduction from the tax on the income of that resident an amount equal to the tax paid in that other contracting country. Such deduction shall not, however, exceed that part of the tax, as computed before the deduction is given, which is attributable to such items of income which may be taxed in that other country.

Such a regulation corresponds to the standard tax credit method.

Option B

Provisions of a Tax Agreement (DTT) that would otherwise exempt income derived by a resident of a contracting country from tax in that country for the purpose of eliminating double taxation because such income is treated as a dividend by that contracting country shall not apply where such income gives rise to a deduction for the purpose of determining the taxable profits of a resident of the other contracting country under the laws of that other contracting country. In such case, the first-mentioned country shall allow as a deduction from the tax on the income of that resident an amount equal to the income tax paid in that other contracting country. Such deduction shall not, however, exceed that part of the income tax, as computed before the deduction is given, which is attributable to such income which may be taxed in that other contracting country.

Such a regulation also corresponds to the standard tax credit method.

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[4] See Article 5 MLI – Application of Methods for Elimination of Double Taxation.

Option C

Where a resident of a contracting country derives income or owns capital which may be taxed in the other contracting country in accordance with the provisions of a Tax Agreement (DTT), the first-mentioned contracting country shall allow:

i) as a deduction from the tax on the income of that resident, an amount equal to the income tax paid in that other contracting country;
ii) as a deduction from the tax on the capital of that resident, an amount equal to the capital tax paid in that other contracting country.

Such deduction shall not, however, exceed that part of the income tax or capital tax, as computed before the deduction is given, which is attributable to the income or the capital which may be taxed in that other contracting country.

This means that a regulation providing for the tax credit method shall apply in place of provisions of a Tax Agreement (DTT) that, for purposes of eliminating double taxation, require a contracting country to exempt from tax in that contracting country income derived or capital owned by a resident of that contracting country which, in accordance with the provisions of the DTT, may be taxed in the other contracting country.

3. Prevention of Treaty Abuse

One approach is based on the so-called „principal purpose test" (PPT) where the treaty benefit would be denied if it was viewed as one of the principal purposes of the relevant transaction; the second approach is a „limitation on benefits" rule (LOB), following essentially the typical clause included in treaties signed by the US. In essence, the LOB clause is designed to prevent access to tax treaties where an entity is owned or financed from abroad or where its shares are traded on a foreign stock exchange.

Article 7 of the MLI offers three options for implementing the minimum standard to combat treaty abuse.

Option 1: Principal purpose test (PPT) alone

Treaty benefits can be denied if one of the business' main purposes in locating business in a particular country is to access the relevant tax treaty.

A benefit under the DTT shall not be granted in respect of an item of income or capital if it is reasonable to conclude, having regard to all relevant facts and circumstances, that obtaining that benefit was one of the principal purposes of any arrangement or transaction that resulted directly or indirectly in that benefit, unless it is established that granting that benefit in these circumstances would be in accordance with the object and purpose of the relevant provisions of the DTT.

It shall apply in place of or in the absence of provisions of a DTT that deny all or part of the benefits that would otherwise be provided under the DTT where the principal purpose or one of the principal purposes of any arrangement or transaction, or of any person concerned with an arrangement or transaction, was to obtain those benefits.

Option 2: PPT and a simplified or detailed limitation on benefits provision (LOB)
The LOB clause is broadly designed to limit treaty benefits to companies with sufficient presence in the relevant country, based on their legal nature, ownership and activities.

According to the Simplified Limitation on Benefits Provision, a resident of a contracting country shall not be entitled to a benefit that would otherwise be accorded by the DTT, other than a benefit under provisions of the DTT:

a) which determine the residence of a person other than an individual which is a resident of more than one contracting country by reason of provisions of the Covered Tax Agreement that define a resident of a contracting country;
b) which provide that a contracting country will grant to an enterprise of that Contracting Jurisdiction a corresponding adjustment following an initial adjustment made by the other contracting country, in accordance with the DTT, to the amount of tax charged in the first-mentioned contracting country on the profits of an associated enterprise; or
c) which allow residents of a contracting country to request that the competent authority of that contracting country consider cases of taxation not in accordance with the DTT, unless such resident is a "qualified person" at the time that the benefit would be accorded.

The idea behind a simplified LOB is that it may be more easily included in a multilateral instrument, and the contracting countries would then fine-tune it in their bilateral negotiations for their respective treaties. Also, a simplified LOB should be simpler than a full one, to the extent that the PPT could take care of the remaining complexities.

The simplified LOB would cover: individuals, governments, publicly traded entities, entities 50 percent or more beneficially owned by the above persons, active business, derivative benefits (i.e., entities owned 75 percent or more by equivalent beneficiaries) and competent authority discretionary relief (the relief being available where there are clear non-tax reasons).

Option 3: A combined approach
A detailed LOB could be supplemented by a mechanism (treaty-based or otherwise) that would deal with conduit arrangements not already dealt with in the tax treaty. The LOB proposals provisionally include a 'derivative benefits' clause, which would allow a treaty country to look through to the shareholders where the shareholders would also be entitled to benefits under a treaty. Negotiating states would be given the flexibility to restrict the clause to dividend income.

New proposals include optional clauses on the treatment of Collective Investment Vehicles, competent authorities' considerations for discretionary relief and the ability to take into account regional groups (e.g. the European Union) when drafting clauses.[5]

[5] There are also proposed amendments to the Commentary on the OECD Model Tax Convention, such as discussion of what constitutes an 'active business' for the purposes of LOB.

4. A switch-over clause

Given the inherent difficulties in giving credit relief for taxes paid abroad, states tend to increasingly exempt foreign income from taxation. The unintended negative effect of exemption method is that it may encourage untaxed or low-taxed income.

Switch-over clauses are commonly used against such practices. The taxpayer is subjected to taxation (instead of being exempt) and given a credit for tax paid abroad. In this way, companies can be discouraged from shifting profits out of high-tax jurisdictions towards low-tax territories, unless there is sufficient business justification for these transfers.[6]

The relevant sources of income are: (1) profit distributions; (2) proceeds from the disposal of shares; and (3) income from a permanent establishment.

5. Economic substance test

The economic substance test disallows the tax benefits associated with a transaction if the transaction was deemed to lack economic substance or a business purpose. Basically, any transaction shall be treated as having economic substance only if both of the following two conditions are satisfied:

– entering into the transaction changes the taxpayer's economic position in a meaningful way apart from the income tax effects it may have; and
– the taxpayer has a substantial business purpose for entering into such transaction (apart from its income tax effects).

There has to be an objective expectation of profit apart from tax benefits. There must be a non-tax business reason for the transaction Not all transactions have to show an expectation of profit. A profit is not required in cases where the tax benefit is supposed to induce companies to make investments that would otherwise be uneconomic absent the tax subsidy. The transaction has no to be a "tax product". Business decisions have to be made for reasons such as profit motive, improvement of business position (market share), growth risk reduction, control, leverage.

The General Anti-Abuse Rule (GAAR) provisions are intended to prevent the creation and use of artificial legal arrangements to avoid payment of tax. The GAAR does not affect the applicability of specific anti-abuse rules.

Polish fiscal administration also uses an economic substance test to identify sham transactions that exist solely to reduce or eliminate taxes. The goal of this approach is to prevent taxpayers from subverting the legislative purposes of tax law. Tax avoidance is defined as an act carried out primarily in order to achieve a tax benefit, contrary in the

[6] See also the COUNCIL DIRECTIVE (EU) 2016/1164 of 12 July 2016 laying down rules against tax avoidance practices that directly affect the functioning of the internal market ("Anti Tax Avoidance Directive").

circumstances to the object and goal of a provision of a tax act and states that tax avoidance shall not result in a tax benefit, if the mode of action was not genuine.[7]

Arrangements may be considered as genuine if operations are unreasonably divided or consisting of mutually nullifying or compensating elements, or if intermediaries are unreasonably involved.

6. Summary

International corporations may seek to shift profits to low tax jurisdictions to avoid the tax levied in high tax countries, inter alia through mispricing cross-border transactions. An important issue is the need by governments to protect the base of their corporation tax, inter alia through anti-tax avoidance mechanisms which may lead to double taxation or non-taxation.

The Double Tax Treaties, in principle, enable granting of an exemption or taxation at a reduced rate on certain income, or alternatively offsetting tax paid in the country of source against the tax payable in the country of residence, in this way preventing double taxation.

In the multilateral convention to implement tax treaty-related measures to prevent base erosion and profit shifting ("MLI") certain targeted anti-avoidance clauses are also proposed, together with changes to the title, preamble and Commentary on the OECD Model Tax Convention to clarify that the prevention of tax evasion and avoidance is one of the purposes of a double tax treaty. At a minimum, tax treaties should include either:

- a principle purposes test (PPT) rule;
- a limitation on benefits (LOB) rule supplemented by a mechanism, such as a restricted PPT rule, that would deal specifically with conduit arrangements; or
- a combined approach.

While the LOB provides a relatively objective set of tests for determining whether an entity has been formed, acquired, or operated for treaty shopping purposes, the PPT is transaction-oriented and allows a contracting country to deny treaty benefits based on a subjective determination of whether a transaction or arrangement has been entered into with a principal purpose of obtaining treaty benefits.

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Role of certification units in management systems improvement

The present paper includes results of literature and empirical studies on identification of potential role of units certifying management systems in improvement of these systems. The paper presents inter alia considerations on the essence of certification services and results of empirical studies on Lloyd's Register Quality Assurance which allowed identification of activities of this unit towards participation in improvement of their clients' management systems.

Introduction

The purpose of the present paper is to clarify certification service as one allowing to improve management systems subject to certification procedure as well as identification of empirical practices undertaken by one of the leading certification units related to its participation in its clients' management systems improvement.

Firstly, the authors will depict certification service treating it as a professional service.

Further on, empirical studies model will be presented. Latter part of the paper is dedicated to answering research questions which embrace such issues as:

- scope of certification currently offered by certification unit,
- types of services complementary to certifications offered by the studied unit,
- methods used by the studied unit to inform its clients about possibilities to use its services.

1. Essence of certification services

Certification is to be understood as an independent third party activity which demonstrates that adequately marked products, methods and services are compliant with a specified norm or with other specified normative document. If it is management sys-

tem that is subject to certification, then its key task is to show that the system is in compliance with the norm being model for its functioning.

Referring to regulations of European Union and Polish laws it is necessary to highlight the fact that contrary to certification of products, certification of management systems is voluntary (Łunarski, 2006; *Nowoczesne* ..., 2004). Its being optional translates as lack of regulations in this respect. Certification is carried out by independent certification units credibility of which has been approved by way of accreditation. Accreditation means formal recognition of competencies of a given unit (in this case a certification unit) to carry out evaluation of compliance and to issue certificates.

As a consequence of accreditation processes and development of certification, businesses seeking the services of management system certification have at their disposal offers of a number of certification units. In case of Poland these are both national units (all accredited by PCA) and foreign (only partially accredited by PCA). Foreign units, as Urbaniak (2004) rightly points out, till now demonstrated little interest in Polish accreditation issuing certificates on the basis of the following accreditations: British UKAS (United Kingdom Accreditation Service), German DAR (der Deutscher Akreditierungs Rat), and American RAB (Registrar Accreditation Board).

The most common certification units on the Polish market are:

- amongst national units: Polskie Centrum Badań i Certyfikacji, Polski Rejestr Statków, Zetom-Cert, Urząd Dozoru Technicznego,
- amongst foreign units: Bureau Veritas Quality International, Lloyd's Register Quality Assurance, Societe General de Surveillance, RW TŰV, TŰV Rheiland.

Bearing in mind that third party audit, i.e. management system subjected to certification procedure, is voluntary one can pose a question "what drives company management to take this step?". F. Havard (2002) attempted to classify decision factors for quality management systems and identified two types of them. In his opinion management of one group of enterprises with positive experience and achievements would like to have them independently evaluated and recognized. This motivation is accompanied by hope and expectation that such credibility given to the company will increase its turnover and market share. The remaining companies it turn, which according to F Havard, are more numerous, were either forced or convinced by their major buyers to obtain certificate within a given time-frame. Regardless of the original premises for certification part of management expectations from certifying auditors becomes clear in the course of cooperation between the company and the certification unit. Empirical studies (Jedynak, 2005) showed that the qualities most wanted from the auditors were subsequently:

- consultation interpreted as auditor's creative work towards improving management system and suggestions how to solve problems of organization,
- realism, interpreted as realistic approach towards applying norms in real life,
- competencies, interpreted as scope of auditor's understanding specifics of company and industry where it operates.

Individuals, working as certifying auditors, in order to meet their clients' expectations and formal requirements of certifying units, must have high competencies. These competencies act for businesses as guarantee of professional certification service and of creating added value thanks to auditors' comments indicating necessary and/or potential improvements in management systems.

Apart from competencies, second key issue referring to certifying auditors is overriding requirement to avoid conflict of interests. Ensuring impartiality and independence of auditors is the fundamental principle of certification and certification units are burdened with this responsibility. Representative of ISO and IAF list the following typical threats to auditor's impartiality (*Third* ..., 2005):

- Threats resulting from direct conflict of interest. They have emotional, financial or personal character and are related to situations with financial relations between the evaluated company and auditor directly or with their members of family.
- Threats to impartiality of revision of management system. Occur when auditor, or individuals known to them, participated in developing management system.
- Family threats. Occur when family relations exist between auditor and the audited.

Potential unsuccessful counteraction of certifying units against such threats would form a significant factor for lowering credibility and loss of reputation not only themselves but also loss of credibility towards the entire idea of certification.

Certification unit visit in order to carry out audit is possible only after management system has been implemented and internally evaluated and when first corrective actions have been introduced. Meeting these requirements proves that all steps of Deming's cycle have taken place in a company before certifying auditors' visit, even though certain lack of maturity of introduced solutions is still acceptable (Sokołowicz and A. Strzednicki, 2006).

For management system certification to take place, company management must select certifying unit. In the course of making this decision the following criteria might prove useful (Jazdon, 2001; Sokołowicz, Strzednicki, 2006):

- the number of accreditations held by certification unit proving its significance on the world scale,
- the number of certificates granted by the unit to date,
- key customers' opinion and their potential preferences regarding certifying unit,
- specifics of domestic and foreign markets where the certificate will be used along with recognition of the unit on these markets,
- certification unit experience in evaluation of normalized quality management systems of organizations from industry where the organization operates,
- location of certifying unit or of its subdivision,
- price for certifying service.

M. Urbaniak (9/2006), who carried out unique studies on determinants for selection of certification units on Polish market showed not only what variables are taken into account by company management, but also which of these variables are used more often and which less. Amongst the most frequent ones there were reputation of certify-

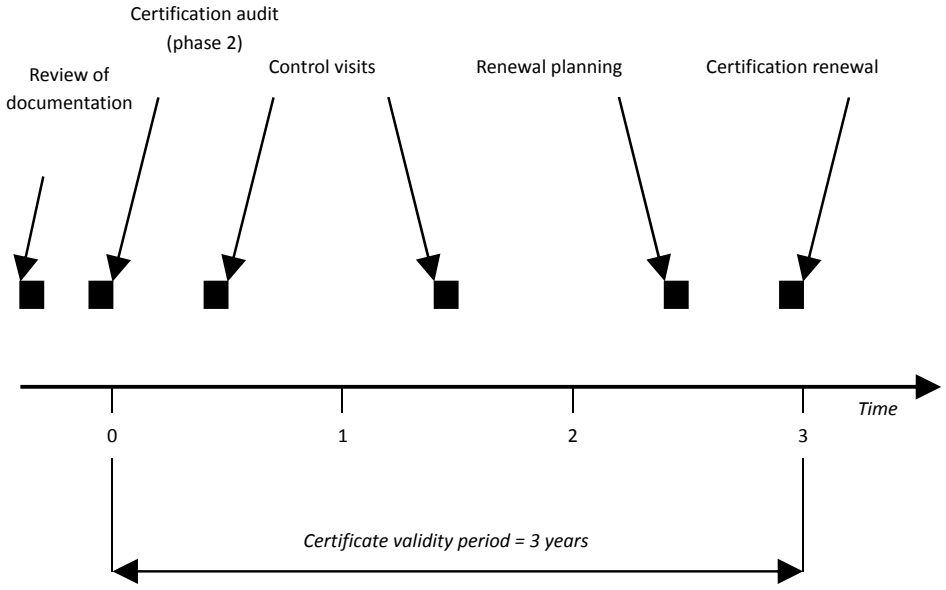
ing unit, attractive pricing, consultants' suggestions, specialization in a given field. Other criteria were mentioned far less often.

Company representative where certifying unit has already been chosen reaches out to an office of this unit in order to establish principles of cooperation. This contract should result in:

- signing agreement between parties,
- final or estimated number of audit days for all visits throughout the life of certificate,
- appointing certifying auditors who will carry out the first stage of certification.

Within the entire certification cycle auditors of the certification unit carry out obligatory types of visits presented on Picture 1 and described successively below.

Picture 1. Obligatory visits of certification unit within entire certification cycle of quality management system



Source: Jedynak, 2007

Review of documentation (Phase 1)

The key objective of this visit is to verify if management system documentation meets the requirements of the norm regarded as the model. Therefore, the basic audit method at this stage is study of presented documentation. What is more, during documentation review:

- degree of system implementation is initially established. Due to time restrictions, it is established by getting acquainted with provisions on internal audits, management review, corrective actions and preventive actions.

- course of next visit is planned. Because of the above mentioned tasks it is required to review documentation in the company office which enables discussion of doubts between auditor and management representative, explanation of solutions prepared by the company and critically evaluated by auditor and consequently convincing them to these solutions, including in the plan for next visit conditions of the company such as time limitations of individual employees or organizational units, required audit time for individual processes or requirements, location of different company premises and resulting time lost on commuting, possibilities to provide guides for auditors, precise explanation to company representative methodology and principles of the next audit phase.

Basic result of review of documentation is auditor's confirming readiness of the company to proceed to phase 2. Potential criticism in audit report refer to inadequacies in system documentation.

Certification audit (Phase 2)

It is carried out if revision of documentation finished successfully. Time distance between phase 1 and phase 2 usually depicts the scale of problems which the company needs to improve consequently to phase 1 diagnosis. During phase 2 it is verified if resolutions of system documentation have been introduced and initial judgements regarding its effectiveness and efficiency are made. Auditors' procedure follows analogical stages and techniques as it did in case of internal audit. Thus, the following methods are employed: revision of documentation and resolutions, interviews with employees, observations of processes and activities, sampling. Furthermore, auditors check efficiency of corrective actions taken against problems indicated during previous visit. Certification audit results in:

- general confirmation of compliance (lack of compliance) of the management system with norm requirements,
- recommendation (or lack of it) to approve management system within a specified scope and to issue certificate,
- indicating areas which need special attention of the company management (weak points of the system),
- indicating areas proving efficiency of the system (strengths),
- detailed critical comments supported with evidence for the company not meeting the requirements,
- plan of audit visits at the company.

From the point of view of general audit result ranks of comments, given by the auditors to audit observations are not negligible. On the one hand they have formal nature (the so called high non-compliance rules out recommending the company for system approval and issuing certificate), on the other one they illustrate scope of exemptions of the existing solutions from existing requirements.

In case of positive course of certification audit, auditors schedule next visits, accepting that period of validity of certificate usually lasts 3 years, and during this pe-

riod regular control visits are required. Planning results in drawing up a programme of control visits. It is assumed that sum of scopes of audits during all control visits should give a full scope of system approval. Based on auditors' recommendations and after the so called technical review, certification unit office issues certificate for the organization.

Control visits

Their purpose is to periodically check how management system is maintained and improved. Because of limited time of these visits (often 1 person day) their scope covers each time the so called obligatory points, verification of which according to provisions allows regular checks of the system and confirmation if the system is still compliant with the norm requirements. Apart from the obligatory points, selected areas or processes at the company are also subject of audit. Moreover, at each visit after certification audit, auditors are obliged to review and potentially "close" previously noticed nonconformities (*Guidance for reviewing* ..., 2005).

Certificate Renewal Planning

It is a specific kind of control visit (the last one in a single certification cycle) when auditor, apart from elements typical to a standard control visit, additionally draws up a plan for renewing the certificate in relation to its expiring validity.

Certificate Renewal

It takes place before expiring validity of certificate and proceeds in analogical way to certification audit. Auditors' positive recommendation and positive result of technical review result in issuing certificate for the next 3 years. Over this period control visits are made.

Apart from the above mentioned, typical types of visits paid by auditors from certifying unit there can be other types of visits, such as:

- change to scope. Takes place when a company wants to change the scope of approval of management system.
- corrective visit. Takes place when auditors found significant non-compliance at their previous visit. The purpose of this visit is to verify efficiency of corrective actions taken.
- gaps analysis. Takes place before review of documentation. It is carried put on the request of the company which wants to know extent of their preparation to certification. Auditors then indicate necessary directions for improvement of management system.
- special visit. It takes place most often when norm being the model for management system undergoes change. The purpose of this visit is to identify the degree of compliance of changes made in management system against requirements of updated norm.

2. Model of empirical studies

Carried out literature studies formed the foundation for identifying subject of empirical studies. Among others, key research question was formulated as follows: To what extent certification units can contribute to improvement of management systems of organizations being their clients. This question was extended in the form of the following detailed questions:

- question 1. How broad scope of certification is currently offered by certification units in Poland?
- question 2. What services complementary to certification are offered by certification units?

In empirical studies case study method was employed. As the subject of research one of the leading certification units was purposefully chosen – Lloyd's Register Quality Assurance. It is a British unit active on markets in 120 countries, including Poland. It was assumed that research findings made for this unit would not be representative for the entire certification services market in Poland, yet will reflect existing good practices in the studied scope.

In the studies the following research techniques were used: interview with representatives of the studied unit and analysis of content of its documentation available on Polish website. Staff from customer cooperation office (specialists for planning audits and sales as well as practising certification auditors) were respondents.

3. Research results

3.1. Scope of certification services provided by the studied unit

Consequently to interviews carried out with studied respondents the following findings have been made:

- current scope of certification services provided by the studied unit in Poland is shaped by the headquarters located in Coventry and is similar to scopes functioning in other offices.
- staff of the Polish division can initiate expanding scope of certification services. It is, however, a hierarchical process involving supervising office in Prague and Amsterdam and final preparation and approval in Coventry. To date, such initiatives proved unsuccessful, as a result they were basically not welcome.
- customers of this unit during ongoing meetings as part of audits and during contacts with the office voice, not infrequently, the need to expand scope of services in Poland. In such cases the office in Poland can reach out for resources from other foreign offices if they offer the certification service of interest to the customer.

Table 1 presents current scope of certification services offered by the studied unit.

Table 1. List of standards forming the basis for certification in the studied certification unit

Subject of provided certification services	Standard being the point of reference in evaluation
Quality management system for aerospace industry	AS 9100
Quality management system for manufacturers or companies packing sets for chain stores	BRC CP
Quality and safety management system for packaging in food industry	BRC IoP
Quality management system for manufacturers of medical devices	ISO 13485
Good manufacturing practices for cosmetics industry	ISO 22716
Quality management system	ISO 9001
Quality management system for automotive industry	ISO/TS 16949
Management system food safety packaging standard	PAS 223
Food safety and hygiene management system	BRC Food
Programme for certification industrial manufacturing of safe feed materials	EFISC
Food Safety System Certification	FSSC 22000
Good Manufacturing Practices and Feed Safety Assurance	GMP + FSA
Hazard analysis and critical control points	HACCP
Safety and quality system for trade in raw materials and commodities in food supply chain	IFS Broker
Food safety system management	IFS Food
Management system for entities providing logistics services in food industry	IFS Logistics
Food safety management system	ISO 22000
Emissions trading system	EU ETS
Occupational Health and Safety Assessment Series	OHSAS 18001
Environmental management system	ISO 14001
Energy management system	ISO 50001
Management system for information security	ISO/IEC 27001
Business continuity management	ISO 22301
Security management system for the supply chain	ISO 28000
Facility security requirements	TAPA/FSR

Source: prepared by the authors

It can be noticed that this range is wide which is evident both in the large number of management areas covered by certification service and by industry dimension. It is clear that next to universal standards, certified in organizations from different indus-

tries, the studied certification unit is strongly orientated towards providing services for food industry.

For each standard listed in Table 1 the studied unit offers a complete certification service. In information materials dedicated to customers employees of the studied unit explain possibilities and advantages of introducing standard as well as benefits from using certification service provided by this unit. The main sources of these benefits, indicated both in information materials and confirmed in interviews, are high competencies of auditors based among others on many years experience in auditing and industry knowledge.

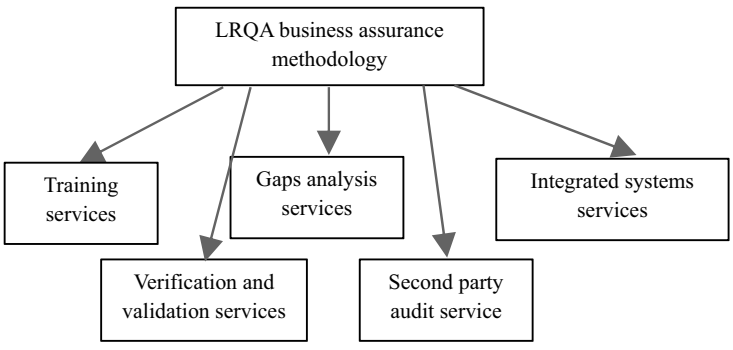
3.2. Additional services complementary to certification services provided by the studied unit

Similarly to studies on basic certification services, also research on complementary services began with interviewing respondents. In this case a different picture of these services emerged, which is as follows:

- only part of services complementary to certification services is shaped centrally in the Coventry office. These are mostly the services which are subject to external evaluation, such as e.g. accredited auditor courses. Majority of complementary services is initiated locally in Poland.
- in the process of local services initiation they are expected to be validated before launching them. The validation is however carried out with the use of Polish office internal procedures by employees hired in Poland. Consequently, starting and providing the services in question proceeds far more flexibly.

Interviews with respondents and analysis of information materials of the studied unit allowed mirroring the structure of provided additional services (see Picture 2).

Picture 2. Structure of additional services provided by the studied certification unit



Source: prepared by the authors

The studied respondents indicated that in the researched field of additional services LRQA Business Assurance, management system evaluation methodology intro-

duced a couple of years ago, is of overriding importance. It is auditing methodology the main purpose of which is generating added value for clients and is based on building trust in cooperation with clients, treating protection of current and future organization results as one of audit objectives, much consideration given to client's risk analysis and evaluation during certification, introduction of the so called theme visits dedicated to in-depth analysis of selected problems voiced by the client, orientation towards continuous improvement of client's management system. The methodology is a significant complement of purely formal certification procedure.

Training services constitute an extremely important area of additional services. Current scope of these services in the offer of the studied unit is exceptionally rich and embraces both open trainings for participants from different organizations and closed ones (adjusted to specifics and needs of a given organization). The trainings cover:

- In the area of updating ISO 14001:2015 standards – norm changes, ISO 9001:2015 – norm changes, preparation to ISO 9001:2015 – practical training workshops, ISO 9001:2015 for internal auditors.
- In the area of quality management: course for internal auditor of quality management system, course for internal auditor of integrated management system, course for leading auditor of quality management system, course for quality management system agent, workshop for auditors of quality management systems, meaning and interpretation of ISO 9001:2015.
- In the area of food safety: course for internal HACCP auditor, course for internal ISO 22000 auditor, interpretation of BRC Food 2015 standard, meaning and interpretation of BRC loP, meaning and interpretation of IFS Food.
- In the area of environment and energy: course for suppliers audit, course for internal auditor of environment management system, implementation of energy management system according to ISO 50001:2011, requirements of the ISO 14001:2015 norm.
- In the area of work hygiene and safety: suppliers audit, course for internal auditor of health and system management system, requirements of system according to PN-N-18001 and OHSAS 18001.
- In the area of information safety: meaning and interpretation of ISO 27001.

As it can be noticed, provided training services largely cover the above discussed scope of certification services. They address both the issues related to maintaining particular standards and the roles of people in management systems (agents and auditors).

Another group of additional services is related to validation and verification. These are services aimed at helping clients to meet legal requirements and improve activities connected with greenhouse gases. Services provided by the studied unit enable to confirm accuracy of adopted design and documentation methods as well as reliability and credibility of given information.

In turn, gaps analysis is a service provided before starting the certification process. Objective of this service is to demonstrate for management where organization is lo-

cated when it comes to compliance with standard and to make evident what corrective actions are required. Thus this service improves client's knowledge and identifies existing threats.

Second party audit service is intended to evaluate client's supply chain partners. The service is provided in numerous industries and is to deliver knowledge about partner's impact on sustainability and safety of chain supply.

Final of the complementary services is connected with integrated management systems. The studied unit offers in this respect a wide range of services supporting clients in implementation and maintenance of management systems developed on the basis of more than one standard.

Discussion of results and summary

The carried out studies enable to conclude the following:

- growing competition on certification services market and increase of clients' expectations foster the one hand expansion of certification services range and on the other one introduction of additional services indicating synergy with certification.
- in the studied certification unit the scope of provided certification services is a consequence of global policy in this respect which can be the source of risk of failing to comply with the requirements of the local market.
- the scope of certification services of the studied unit is oriented towards areas and industries. Food industry offer is dominating which can be explained with great interest of this industry businesses in management system certification.
- the studied certification unit provides numerous and diversified complementary services. Here, training services are in majority. Content and scope of these services address to a great extent the needs which occur during implementation and management system maintenance.
- empirical studies carried out by the authors have certain limitations resulting from the nature of research methodology. Since it was a certification unit that was the subject of the study, research findings cannot be generalized to the entire population of certifying units.
- the carried out studies can however be the foundation for further research programmes exploring impact of certification services on improvement of management systems.

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Transition to the new edition of management system standard as an example of organizational change

The present paper includes results of literature and empirical research aimed at clarifying specifics of transition to a new management system standard regarded as an exemplification of organizational change. The paper presents, inter alia, consideration of the change of the ISO 9001 standard of 2015 and impact of this change on organizations applying this standard in construction of quality management system, analysis of two management system design methods of referential nature in the course of adapting organization to the requirements of the new standard, as well as results of empirical studies diagnosing approach taken by the studied organization towards change in quality management system inspired by the change of ISO 9001 standard.

Introduction

The purpose of the present paper is to present the adaptation of quality management system to the requirements of the updated ISO 9001 standard as an example of organizational change.

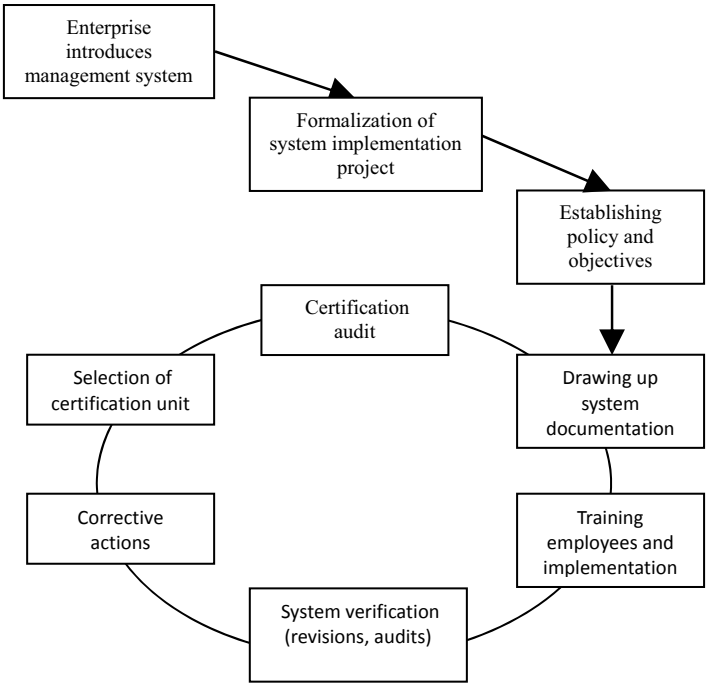
The authors, as a preliminary remark, illustrate the context and scope of changes related to publishing the new ISO 9001 standard in 2015. It is also related to sketching the picture of an organization which has already introduced quality management system now in need to adjust to the requirements of the new standard.

Next, the paper introduces two fundamental methodologies of designing management system which can inspire when selecting approach assumed in change of quality management system. Authors' considerations are completed with illustration of methodology and results of empirical research depicting a selected organization where quality management system has been adjusted to the requirements of the new standard. Authors make an attempt to identify the dominating approach used in this organization to introduce changes in the quality management system.

1. Change of ISO 9001 standard as a premise to use quality management systems

Classic cycle characterizing implementation and improvement of normalized management systems in organizations proceeds as on Picture 1.

Picture 1. Single cycle of normalized quality management system in an enterprise.



Source: Jedynak, 2007

However the change of standard, which forms a set of requirements for management system, is an additional stimulus to alter the presented cycle. It can be stated that implementation, evaluation, improvement and certification of the system must reoccur ISO 9001 standard, which is in focus of the present paper, has been present in Polish organizations since 1995. That year it was introduced in 130 organizations. The number of standard introductions was beaten in 2009 when 12707 had the standard implemented. In 2014, in turn, the system was present in 9608 organizations (Zając, 4/2016). While in 2012 the ISO 9001 standard was implemented in 1101272 organizations around the world.

Evolution of the ISO 9001 standard is concisely presented in Table 1.

Table 1. Changes in ISO 9001 standard

Year	Standard	Main changes
1987	ISO 9001:1987	First norm embracing systemic quality management
1994	ISO 9001:1994	Minor changes in the standard content
2000	ISO 9001:2000	Major changes. Introduction of process approach
2008	ISO 9001:2008	Minor changes, mostly specification of certain concepts
2015	ISO 9001:2015	Final amendment. Significant changes related to the norm structure and to introduction of risk management requirements

Source: Authors' own elaboration based on (Kobylińska, 1/2014)

As it can be seen, in the following years the scale of changes in ISO 9001 varied. The last change of 2015 is nonetheless of great importance. Obviously, the bigger scope of changes in the standard requirements the greater challenges to the organizations which these changes are obliged to include in their management systems.

When designing changes in the ISO 9001 standard in 2015, a series of assumptions was made (*Revision*…, 2015; Kobylińska, 1/2014):

- providing organizations with adequate set of requirements regarding quality management systems for the next 10 years,
- greater standard adjustment to all types and sizes of organizations,
- focus on efficient process management in order to ensure expected results,
- including changes in technology and quality management system that have taken place since 2000,
- facilitation of implementation and interpretation of requirements by organizations, their suppliers and certification companies,
- employing simple language and style in order to improve comprehension and to ensure consistent interpretation of requirements.

In contrast to ISO 9001:2008 the new standard of 2015 was based on seven key principles outlining quality management philosophy (*ISO 9001:2015*, 2015): 1) customer orientation, 2) leadership, 3) people engagement, 4) process approach, 5) improvement, 6) facts-based decision making, 7) relation management. Compared to the previous edition systemic approach was removed, while mutually beneficial relations with suppliers was expanded to all stakeholders.

In an effort to briefly present the nature of changes in the ISO 9001:2005 standard, it is necessary to list above all (*Revision*…, 2015; Zając, 4/2016):

- far greater emphasis on leadership and engagement of top management,
- better adjustment to business processes management,
- understanding issues from the organization environment,
- understanding requirements of parties interested in company operations,
- integration of *risk-based thinking*,

- greater emphasis on applying process approach,
- focus on the role of results, especially when it comes to product compliance and process effectiveness,
- greater emphasis on knowledge management,
- highlighting the importance of improvements and innovations,
- including technological changes in management systems, together with the role of outsourcing and changes in IT,
- promoting using up-to-date quality tools in management systems,
- introducing terminology allowing flexible use of existing documents and solutions in organizations.

What is also worth noting is the fact that the change of structure of ISO 9001 norm and its adjustment to the previously amended structures of other standards improved ISO 9001 compatibility with other standards and facilitated integration of management systems.

In relation to the standard change *International Accreditation Forum* developed guidelines for planning transition to the new edition of ISO 9001 addressed to all parties involved in certification and accreditation. These guidelines included a prompt comment that (Guidance Documents…, 2015) *"scope of changes necessary for a given organization will be determined by maturity and efficiency of its present management system, organizational structure and practices"*.

Total set of activities recommended to organizations previously using ISO 9001:2008 includes (Guidance Documents…, 2015):

- identification of organizational differences which are to be taken into account in order to meet new requirements,
- developing implementation plan,
- providing adequate training and awareness of all parties which influence organization efficiency,
- up-dating the current quality management system in order to meet the amended requirements and ensuring verification of its efficiency,
- if applicable, establishing reaching out to a certification unit in order to prepare the transition.

The above presented recommendations of *International Accreditation Forum* suggest rather evolutionary approach towards introducing changes in the management system.

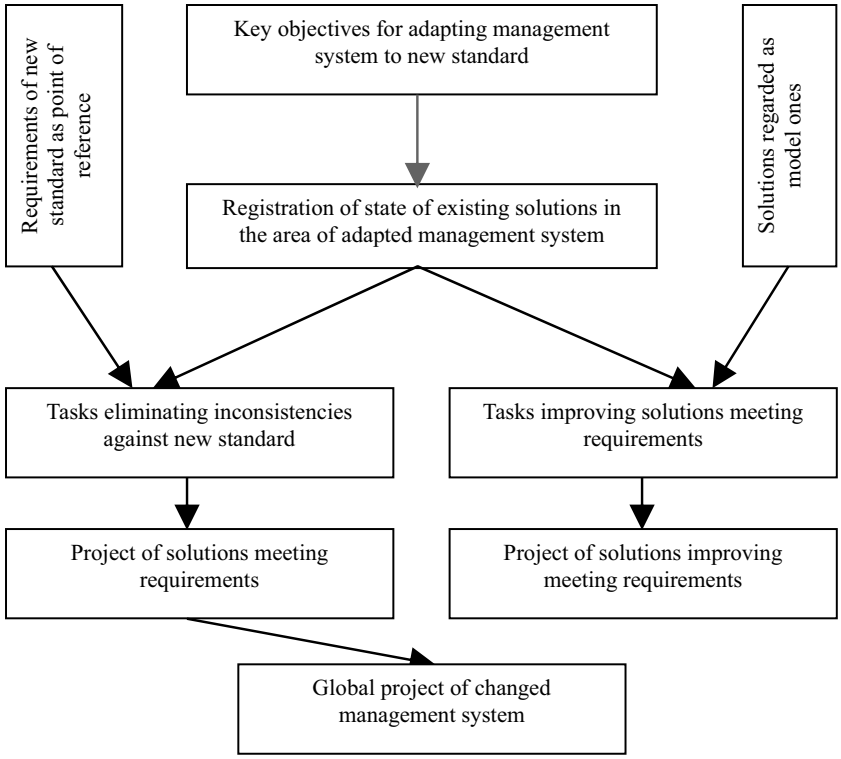
2. Selected methods for designing management systems as potential approaches towards adaptation of new ISO 9001:2015 standard

Participants of process of adaptation of normalized management systems to the requirements of new ISO 9001:2015 standard can reach for, inter alia, two below presented methodological approaches. The first one being diagnostic approach and the other one prognostic, both popularized by J. Trzcieniecki (1979).

Quality management system adaptation with the use of diagnostic analysis method

In the process of diagnostic analysis the existing state of organizational solutions are compared with the required condition. Standard practice with the use of this approach is presented on Picture 2.

Picture 2. Scheme of quality management system adaptation in diagnostic analysis method



Source: Authors' own elaboration based on (Jedynak, 2011)

Applying diagnostic approach in adaptation of normalized quality management systems to requirements of new standard involves:

- firstly – identifying basic prerequisites for adaptation system in organization,
- next – registering existing state of organizational solutions in the area covered by the management system,
- then – comparison of existing condition with requirements binding for organization and solutions regarded as model, based on that formulating project tasks to eliminate identified lacks and to improve solutions which meet requirements yet are not regarded as fully satisfactory,
- consequently to the previous activities embracing current state and analysis – designing management system solutions reflecting goals of its adaptation.

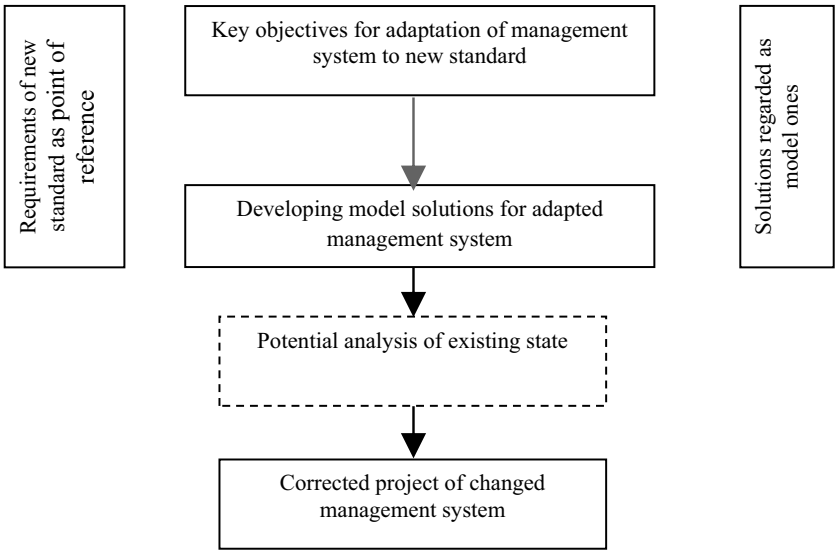
The discussed approach has the following advantages:

- very well accords to the situations in organizations where normalized management systems have been introduced and own solutions have been developed which might need only to be completed and improved,
- leads to evolutionary adaptation of management system,
- limits risk of organizational dysfunctions as a consequence of introducing changes to management system.

Adaptation of quality management system in prognostic method

Approach relevant to prognostic method is rooted in the concept of ideal system authored by G. Nadler. The starting point for this method is thus not the existing condition by a model system. Standard practice with the use of such approach is presented on Picture 3.

Picture 3. Scheme of quality management system adaptation in prognostic method



Source: Authors' own elaboration based on (Jedynak, 2011)

Applying prognostic approach in adaptation of normalized quality management systems to requirements of new standard involves:

- firstly – identifying basic prerequisites for adaptation system in organization,
- next – developing solutions in the area relevant to the management system based on binding requirements and solutions regarded as model ones,
- then, if necessary, establishing existing condition before change of management system,

- and finally, provided the existing condition has been registered, correcting the management system project.

The discussed approach has the following advantages:

- fosters developing original solutions free from habits or existing organizational practices,
- matches well to the situation of newly established organizations where organization life cycle and normalized management system life cycle are in similar stages.

In case of applying prognostic method in organization where management system already exists and requires changes, there is a risk of organizational dysfunctions resulting from too different approach to the shape of the system in comparison to the existing solutions.

3. Methodology of empirical research

Carried out literature studies formed the foundation for specifying the subject of empirical studies. Among others, key research question was formulated: what approach in quality management system adaptation to the requirements of ISO 9001:2015 standard was used in the studied organization?

Complementary to this question are detailed questions:

- Question 1. How did works related to adaptation of quality management system to the new ISO 9001:2015 standard proceed and who was involved?
- Question 2. What kind of preparations were required to introduce the new standard in the studied organization?
- Question 3. Qualities of which approach towards adaptation of management system (diagnostic analysis or prognostic approach) dominated in the studied organization?

Case study method was employed in empirical studies. As the subject of research the company Moris sp. z o.o. located in Chorzów, Poland, was selected as it is one of the first organizations to make the effort to adapt their quality management system to the requirements of the new ISO 9001:2015 standard and successfully completed certification process for compliance with this norm.

Furthermore, the study made use of the following research techniques: interview with representatives of the studied unit, analysis of documentation of quality management system before and after introducing changes, as well as Action Research technique related to participation of one of the authors of the present paper in certification audit of the studied organization. Respondents included: company owner, plenipotentiary of quality management system, managers of all departments, selected specialists.

4. Research results

4.1. Course of works related to adaptation of quality management system of the studied organization to the requirements of ISO 9001:2015 standard and related preparations

Owing to interviews carried out by the authors with selected respondents (owner and plenipotentiary), the following time-line of adaptation works was sketched:

- taking interest in changes in the ISO 9001 standard, still before their final publishing. At this stage organization obtained and translated for their own needs DIS version of the standard. The objective was to verify if requirements of this new standard would involve other than organizational engagement of the organization, e.g. investment needs.
- participation of Plenipotentiary in an open training on interpretation of requirements of new ISO 9001:2015 standard held by a cooperating certification unit.
- discussion of the management and making decision to carry out adaptation of the quality management system to the requirements of new standard. A formalized schedule was accepted covering 8 months starting with initiating works to finish with a visit of certification unit.
- establishing contact with an auditor from a certification unit in order to receive advice on the course of adaptation works.
- plenipotentiary's participation in another open training, run by cooperating certification unit, on designing changes with respect to requirements of the new ISO 9001:2015 standard.
- plenipotentiary's running internal trainings on requirements of the new standard.
- developing amended documents for quality management system and go life.
- training internal auditors with respect to requirements of the new standard, in the form of closed training.
- evaluation of meeting new requirements (internal audits, management revision).
- introducing improvements in management system and visit of certification unit.

As it can be noticed, the presented course of action included most of good practices in this respect. However, the organization did not use potential possibility to order at certification unit a special visit aimed at gaps analysis.

4.2. Identification of approach taken by the studied organization in order to adapt quality management system to requirements of new standard

In order to identify which of the approaches suitable for adaptation of standard in the research organization was applied and to what extent, in the first place a diagnostic tool was developed which embraced criteria helping identify qualities of both above mentioned approaches. Next, based on presented in section 3 research techniques actual state was identified. The research findings are included in Table 2.

Table 2. Sheet for identification of approach to adaptation of ISO 9001:2015 standard applied in the studied organization

Diagnostic approach quality	Organization's approach					Prognostic approach quality
1. Firstly, reflection on the objectives of adaptation of the new standard			v			1.Firstly, reflection on the objectives of adaptation to the new standard
2. Requirements of the new standard were familiarized			v			2. Get acquainted with the requirements of the new standard
3. Model solutions of other organizations were identified and looked at closely			-			3.Identification and getting familiar with solutions of other organizations recognized as model
4. Registration of state of existing solutions		v				4. Drawing up new formal documents compliant with the philosophy of the new standard
5. Gaps between to-date solutions and requirements of new standard were analysed		v				5. Quality management system designed following only the new approach
6. Existing terminology referring to system formalization was kept		v				6. Introduction of literally new terms functioning in new standard
7. Existing and useful documents, not required in the new standard, were kept	v					7. Resigning from all documents not required in the new standard
8. No new documents were introduced, only the existing ones were completed			v			8. All document in the quality management system re-issued
9. Workers responsible for processes improved existing formal documents	v					9. Workers responsible for processes only evaluated new documets
10. Old structure of resposnsibilites and powers in the quality management system is kept		v				10. Old structure of resposnsibilites and powers in the quality management system was changed

Source: Authors› own elaboration

In the above sheet first three criteria are shared for both approaches. The study found that in the organization objectives related to adaptation of quality management system to the requirements of new standard were set. These objectives referred to, on the one hand maintaining the certificate as a condition for cooperation with numerous clients, and on the other hand perspective of top management showed high hopes with professionalisation and formalisation of risk management practices. Getting acquainted with requirements of the new standard took shape of participation in external and internal training as well as discussion among individuals responsible for adaptation. Interestingly enough, in the course of standard adaptation consultant's assistance was not sought due to high competences of Plenipotentiary. Since the studied organization was one of the first ones in Poland to make to effort to introduce the requirements of the new standard it was not yet possible to learn about solutions of other organizations. It can be said that in a way achievements of the organization were pioneering.

When it comes to the adopted starting point in the process of designing quality management system, the organization applied guidelines of diagnostic approach to a greater extent. Solutions existing in quality management system were analysed, confronted with requirements of the new standard and gaps were analysed. The analysis did not take a fully formalised shape, i.e. a complete report on the analysis was not drawn up.

In the amended quality management system to-date terminology was maintained to a large extent (procedure, instruction, quality book terms and other existing demonstrations of formalisation remained). At the same time a number of new terms, which did not have equivalents in the previous system, were introduced (e.g. risk assessment sheet, context of the organization sheet).

Basically, all binding documents not required by the new ISO 9001:2015 standard were kept. It was assumed that they had a number of assets: improve employee adaptation, limit mistakes and errors risk, protect organizational knowledge, are useful in case of distractions (e.g. clients' complaints). Next to existing documents, several new ones were introduced, addressed mostly to risk management practices and to monitoring and measuring achievements of organization.

Works related to transformation of to-date binding formal documents were delegated to process owners who previously had been trained on standard requirements. What is more, the entire responsibility and authority structure remained and was completed with new requirements from the ISO 9001:2015 standard. Changes concerned in particular the owner of the organization (increasing the leadership role) and key process owners, who received new responsibilities related to risk analysis and monitoring.

In general it can be concluded that approach of the studied organization with respect to adaptation of the new ISO 9001:2015 standard drew to a far greater extent from diagnostic analysis rather than prognostic method.

Results discussion and summary

The carried out research allow to draw the following conclusions:

- One of the fundamental prerequisites for introducing changes in normalized quality management systems is the change of standard specifying requirements for such systems. The scope of changes taking place in standard requirements translates into the scope of changes necessary in quality management system.
- Change of ISO 9001 standard of 2015 was regarded as significant what justifies the statement of its great impact on the shape and scope of changes required in quality management systems developed on the basis of this standard.
- Approach of organization it will apply while designing adaptation changes in quality management system can draw on methodological approaches to designing management systems known as diagnostic analysis method and prognostic method.
- In the studied organization the assumed approach demonstrated to a greater extent qualities of diagnostic analysis method. It was thus evolutionary approach related to improvement existing condition rather than a radical change.

- The course of changes in the studied organization addressed basically all requirements provided for such situations in, among others, document drawn up by *International Accreditation Forum*. From among available tools the organization did not use only potential possibility to purchase gap analysis service at certification unit.

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The Board Model as a Key Issue in the Polish System of Corporate Governance

Previous studies mostly discussed how to improve corporate board structure and processes. Therefore, they examined the relationship between the appointment of independent directors, board committees or female directors and firm performance. Although results of this research were ambiguous, they contributed to the growth of our knowledge on corporate boards. In or study we argue that these bodies still need enhancement, and institutional changes are also necessary. We present the point of view that these changes are especially important in systems of corporate governance with a two-tier board model, such as the Polish system of corporate governance. We argue that countries, where such model work, should consider the implementation of the optional board model and the introduction in law of the choice between one-tier and two-tier board structure. However, the main aim of this article is the description of the main features of the Polish board model and the directions of its possible changes.

Introduction

The role, structure and efficiency of corporate boards were widely discussed in the literature worldwide (Mallin, 2011; Nadler *et al.*, 2006). The discussion became more intense and the critics more vociferous after the waves of managerial frauds, when these bodies turned out inefficient in the supervision of top managers and at the same time they were not able to protect shareholders from losses (Uzun *et al.*, 2004; Zahra, *et al.*, 2005). But in the literature it was also emphasized that despite their failings and contradictions, the critics of these fiduciary tools is like Churchill's critique of democracy, that is the corporate boards are the worst possible tools, except for all the alternatives (Ward, 2003). Hence, corporate boards still play a crucial role in public companies and potentially are the most important device of shareholder value creation (Carter and Lorsch, 2004).

At the same time some authors tried to discuss how to improve board structure and board processes. Therefore, they examined the impact of the appointment of independent directors (Koerniadi and Tourani-Rad, 2012), board committees (Klein, 1998; Lam and Lee, 2012), female directors (Ahern and Dittmar, 2012; Campbell and Minguez-Vera, 2008) or generally boards diversity in terms of age, gender and directors' nationality (Randøy *et al.*, 2006) on firm performance. The results of this research were ambiguous, but they contributed to the growth of our knowledge on corporate boards. In our study we argue that these bodies still need enhancement and institutional changes are also necessary. We present the point of view that these changes are especially important in systems of corporate governance with a two-tier board model exist, such as the Polish system of corporate governance. However, the main aim of this article is the description of the main features of the Polish board model and the directions of its possible changes.

The article consists of three sections. In the first section, the origin and main features of the one-tier and two-tier board models are depicted. Moreover, we also present here board models in Europe, including their changes which have occurred in recent years. At the end of the section the advantages and disadvantages of both board models are also described. The second section deals with the functions and composition of the Polish two-tier board model. Amongst others we present the results of our research on board structure. In the third section we present the opinions, the results of research and our point of view on the institutional changes of board models in Europe and also of the Polish board model. Finally, the summary and main conclusions are presented.

Corporate board models

1. Origins and main features

There are two corporate board models. The one-tier model, where companies are run by a unitary boards. These boards are composed of outside and inside directors. Outside directors are members of a company's board of directors, but at a same time they are not the employees of company. Inside directors are typically top executives. In the two-tier board model there are two boards, i.e. the management board and supervisory board. Management boards consist of only inside directors. Supervisory boards are composed of only outside directors.

The two-tier board model stems from the tradition of 17th century Dutch companies. In 1623 it was adopted by the Vereenigde Oost-Indische Compagnie (the Dutch United East India Company). This company was established in 1602 and became a symbol of the Dutch maritime trading power (Cadbury, 2002; Morck and Steier, 2005; Pawlak, 1996; van Bekkum et al., 2010). After that the functioning and development of a two-tier model was strengthened by subsequent amendments to the German company law in the 19th and 20th centuries. The history of German two-tier board model was described in details by Morck and Steier (2005). Firstly, the German Company Law of 1870 shaped the two-tier board model to protect small shareholders and the public

from self-serving insiders. Then, the Company Law of 1884 forbad board members sitting on the both supervisory and management board. Simultaneously, it thrusted "the duty of become informed" on supervisory board members. But much of the modern foundations of German corporate governance was established by the National Socialist and their Shareholder Law of 1937. This law impose directors' duty to all stakeholders, especially to the Reich. After the II World War the innovation of stakeholders rights remained unchanged. Moreover, it was strengthen by the Codetermination Act of 1976 (*Mitbestimmungsgesetz*). Amongst others the Codetermination Act shaped the structure of supervisory boards and ensured that in companies with more than 2000 workers half of these boards consist of employees' representatives and a half of shareholders' representatives. In meantime the-two tier board model was took up in other countries. Today, a two-tier board model works e.g. in Austria, Estonia, Germany, Poland and Slovakia and Denmark. But it is worth mentioning that the Danish corporate board model is often called semi-two tier one, because unlike to other countries with a two-tier model, the members of the management board can also be the members of the supervisory board. Moreover, they may take up to 50% of the seats in this body. Although the same person cannot be the chairman of the supervisory board and the CEO, i.e. the chairman of the management board (Rose, 2005).

The one-tier board model derived from the tradition of 17th century English companies. For the first time this model was used in the East India Company founded in 1600. The governance structure of the East India Company consisted of the Court of Proprietors and the Court of Directors. The Court of Directors fulfilled most of the functions of a today's unitary board. It was responsible for the running of the company and composed of the Governor, the Deputy Governor and sixteen directors. The Court of Directors met often and appointed several subcommittees, which dealt with specific areas, e.g. purchasing, sales or correspondence (Cadbury, 2002). However, this Court became the model for the today's board of directors. Monks and Minow (2011) reported that also the boards' structure and composition changed surprisingly little. Nowadays, in EU countries an one-tier board model operates in Belgium, Cyprus, Greece, Spain, Ireland, Malta, Sweden and Great Britain.

Furthermore, in some countries, that is in Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Lithuania, Luxembourg, Latvia, Portugal, Romania, Slovenia, Hungary, Italy and the Netherlands, it operates so called optional model and companies can choose between one-tier and two-tier board model. E.g. in France from 1966 companies can choose between one-two and two-tier board model, but initially French companies could appoint only unitary board (*Conseil d'Administration*). This board was composed of inside and outside directors, but the number of inside directors could not exceed one third of the total number of members (Charkham, 1995). After the change of law, the French company Commercial Code gives companies three options, i.e. unitary board structure, headed by an all-powerful chairman (*Président Directeur Général*; Chairman and CEO), who combines both the supervisory and executive functions;

a unitary structure but with separate positions of Chairman and of CEO; a two-tier board structure composed of a management board and a supervisory board, where the positions of the chairman and the chief executive being necessarily separated. But currently, a large majority of companies upholds a traditional unitary board model. (The European Commission, 2009).

Table 1. Corporate board models in EU countries

Board model	Country
Two-tier	Austria, Estonia, Germany, Poland, Slovakia
One-tier	Belgium, Cyprus, Greece, Spain, Ireland, Malta, Sweden, Great Britain
Optional – one-tier / two-tier	Bulgaria, Czech Republic, Croatia, Denmark, Finland, France, Hungary, the Netherlands, Lithuania, Italy, Luxembourg, Latvia, Portugal, Romania, Slovenia

Source: authors' construction based on The European Commission, Study on Monitoring and Enforcement Practices in Corporate Governance in the Member States, 2009 and F. Belot, E. Ginglinger, M.B., Slovin, M.E. Sushka, 2014. Freedom of choice between unitary and two-tier boards. Journal of Financial Economics, 112, pp. 364-385.

Outside Europe a two-tier board model works e.g. in China and Indonesia, although in reality China created an unique board model (Ding *et al.*, 2010; Tricker, 2009; Xi, 2006). Typically for a two-tier board model, Chinese boards consist of management boards and supervisory boards, but management boards includes also independent outside directors. Moreover, this model embodies the China's traditional concept of employees being masters of enterprises, hence the supervisory boards consist of workers' representatives and other members. But unlike to German law, Chinese company law does not specify the proportion of shareholders' representatives and employees' representatives, although it requires that at least a third of supervisory board should consist of workers' representatives. In detail, the proportion of supervisory board's members is stipulated by corporate charts. Interestingly, the supervisory boards in China are one of two monitoring organs in Chinese system of corporate governance The second ones are considered independent directors on management boards, who often are appointed to various board committees. Because of its specify, the Chinese two-tier board model is considered by some commentators as closely aligned to the Japanese board model, because although the Japanese model is an one-tier model, it provides for the independent outside directors to form a separate committees outside the board (Tricker, 2009).

2. Advantages and disadvantages of both board models

The two-tier and one-tier board models have their advantages and disadvantages. Hence scholars and practitioners have not reached the consensus on the potential of board models. They underlined that problems with information asymmetries, dominant CEOs and group dynamics exist in both models (Maassen and Van Den Bosch, 1999;

Pettigrew and McNulty, 1995). Accordingly they mentioned that regardless of structure corporate boards need most of all knowledge, information, power motivation and time (Bezemer *et al*., 2014, Conger, *et al.,* 1998). Generally, most of the research has been conducted in countries, where an one-tier board model exist, hence this model seems to be better known worldwide. But some authors also described two-tier boards. E.g. Bacon and Brown (1977) distinguish the four characteristics of them:

1. Two-tier structures separate in a tangible way the direct management of a company and the function of supervising and overseeing the management function. In countries with a single board, these functions are perceived as separate and to some extent are carried out separately. But since some individuals bear the responsibility for both they can become muddled and the supervisory function may become weakened in the process;
2. The physical separation into two bodies not only results in delineating and defining the two functions of management and supervision, but assures that one person is not asked or expected to do both;
3. The two-tier structure changes – and to an important degree diminishes – the role of the traditional director. The supervisory body is not granted direct managerial authority over company affairs;
4. A two-tier structure may insulate supervisory directors from the degree of liability that, in some countries at least, is attached to serving as a director on a single board.

Moreover, some characteristics of two-tier board structure were described by Aste (1999), Bezemer et al. (2014), Bohdanowicz (2014), Cadbury (2002), Jeżak (2010), Jungman (2006), Millet-Reyes and Zhao (2010), Spisto (2005), Tricker (2009); van Bekkum et al., 2010 and others. They highlighted that the difference between both models do not concern only their composition. The unitary boards and two-tier boards differ from each other seriously. Most of all, unitary boards are responsible for the supervision of executive activities, strategy formulation, accountability and policy making. In contrast, in two-tier board model supervisory boards are responsible for the supervision of executive activities and management boards for strategy formulation, accountability and policy making (Tricker, 2009). Hence, supervisory boards' meetings are often overloaded with financial information and are dominated by figures, which do not say nothing on the development of corporate and business strategy. In reality, supervisory board can comment on top managers' actions and suggest alternatives to plans, but initiative lies to the management board. Furthermore, Cadbury (2002) adds that there is little opportunity for interaction between supervisory and management board in the development of plans and policies. It stems from the separation of responsibilities between both boards and the relative infrequency of supervisory board meetings. In contrast, in an one-tier board model strategies and plans are developed through debate and argument between board members and senior managers. Unitary boards meet more frequently and combine the potential and energy of all board members on the companies' affairs.

Additionally, it appears that supervisory boards' members in a two-tier board model have less access to information on companies than non-executive directors in an one-tier board model. Sometimes they also suffer from information overload and their insufficient adjustment to considered problems. It mostly comes from supervisory board meeting infrequency, other liability and activities of a supervisory and management board and the responsibility for the provision of information by management board. The quantity, quality, timing and focus of information provided by top managers is the area of great challenge for supervisory boards. The absence of relevant information may also undermine of supervisory boards' members ability to ask management critical questions. Asking these questions seems to be another problem, since supervisory board members have to struggle with defensive behaviors of top managers and little support within supervisory board. Hence, these questions are posed by individual supervisory boards' members, but not as the group as whole or they are abandoned to avoid an awkward situation during the meeting (Bezemer *et al.*, 2014).

Former studies underlined also the positive features of a two-tier board model. First of all, in a two-tier board model the members of supervisory board are at least theoretically independent of the CEO and other members of the management board. Since they are the members of two various bodies, they do not suffer from the conflict of loyalty. In a unitary board model the board members have the loyalty to the company, but also to their board colleagues. Moreover, the management board and supervisory board have clearly defined by law and bylaws functions. The members of both boards know precisely what their relevant legal duties are and can concentrate on their tasks. In contrast executive directors in an one-tier board model play a dual role, i.e. they have to turn direction into action and fulfill the duty of supervision.

Furthermore, in a two-tier board model supervisory board's members are clearly representatives of various constituencies, i.e. shareholders, bankers, employees etc., and the linkage between shareholders, supervisors and top managers is clear. Hence, the two-tier board model is designed to deal with the representation of stakeholders' interests. In view of this, this model can be recognized as the better for the systems of corporate governance and companies which move by the way of the shareholders' and workers' co-determination, because a two-tier board model enable the interests of employees to be represented on the supervisory board without involving them directly in the management of the company (Cadbury, 1995).

The Polish two-tier board model

In Polish joint-stock companies the two-tier board model is obligatory. Corporate boards consist of two bodies, specifically management boards and supervisory boards. The management boards are composed of only internal directors, while the supervisory boards consist solely of external directors. According to the Polish company law both boards have various functions. The management board is responsible for managing the company. It is the powerful and real decision-making body. Its main functions comprise

the formulation of a strategy and managing of company's operations. Sołtysiński (2013) mentioned that the management board is the only permanent body in the companies and jurisprudence has developed the principle of presumption of competence of the management board in all matters when the law does not empower the general meeting of shareholders or the supervisory board to perform a given function.

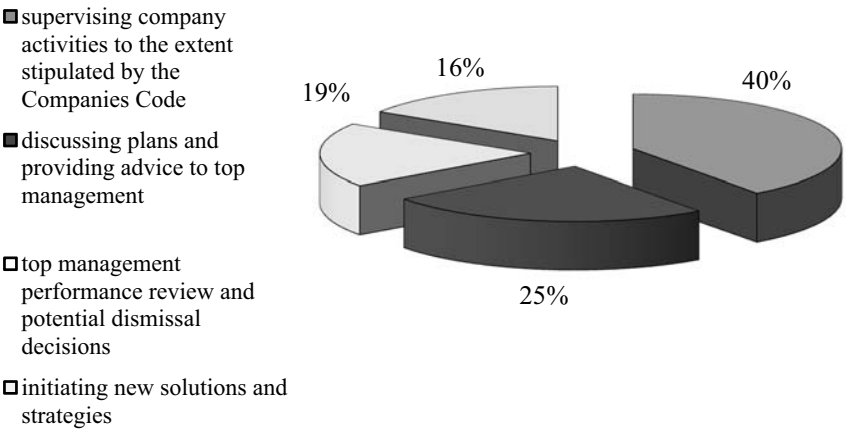
The supervisory board exercises day-to-day supervision in all areas of the company's activity. According to Polish company law this board cannot issue commands to the management board. Its duties include:

1. Evaluating company financial reports for their compliance with accounting standards and the company's present situation;
2. Evaluating top management's proposals for profit sharing or loss coverage;
3. Appointing, dismissing and suspending top management members;
4. Establishing remuneration policies for top management..

Moreover, the responsibilities of the supervisory board can be extended by shareholders through provisions contained in the articles of association. It is commonly found that their duties also include approving long-term plans and annual budgets, selecting external auditors, representing companies in disputes with their management, approving issue prices, accepting unified texts of the articles of association, granting approval for the purchase or sale of real estate, giving investment guarantees, assuming financial obligations, raising equity capital, purchasing shares of significant value, purchasing or selling movables, establishing or liquidating company divisions, setting up new subsidiaries, granting procuration, and sale of preferred shares or their exchange for ordinary shares (Bohdanowicz, 2014; Jeżak, 2010). Moreover, Sołtysiński (2013) underlined that in practice they often pass resolutions advising the management board to consider a concrete project or express opinions on a project presented by the management board.

Our questionnaire research, involving a group of 86 supervisory boards' members of Polish listed companies, demonstrated that Polish supervisory boards devoted most of their professional time (65%) to the implementation of control functions, that is, to supervising their company's activity to the extent stipulated by the Companies Code and to appraising management performance. Two other functions, that is providing advice and using own initiative, were deemed of secondary importance (figure 1).

Picture 1. Supervisory boards' functions of the Polish listed companies. How supervisory boards' members believe boards do balance their functions



Source: J. Jeżak, L. Bohdanowicz, B. Kaźmierska-Jóźwiak, Z. Matyjas, 2016, Rola rad nadzorczych w procesach formułowania i realizowania strategii spółek, Lodz: Wyd. UŁ.

The same questionnaire research evaluated also the hierarchy of supervisory boards' duties. According to the respondents, i.e. supervisory boards' members, the most important were: evaluating management board's performance, approving corporate strategies, establishing executive remuneration policies and selecting new management board's members. Relatively low on the respondent's agenda were ranked such important supervisory boards' activities as: participation in investment planning, ensuring of dividend payments, supervision of the executives' development plans, as well as mediating between stakeholders (table 2).

Table 2. To what extent should the supervisory board perform the following activities. Views of the supervisory board's members

No.	Type of activity	Mean (1-5 scale)*	Standard deviation
1.	Evaluating management board's performance	4.66	0.77
2.	Approving corporate strategy	4.57	0.77
3.	Establishing executive remuneration policies	4.41	0.92
4.	Selecting new management board's members	4.35	0.97
5.	Monitoring management board's key decisions	4.30	0.78
6.	Protecting the company's reputation	4.30	0.97
7.	Controlling the company's debt	4.14	0.83
8.	Participating in the formulation of corporate strategy	3.85	1.07

9.	Succession planning in the company	3.72	1.16
10.	Ensuring growth in shareholder wealth	3.58	1.22
11.	Participating in investment planning	3.21	1.12
12.	Ensuring of dividend payments	3.13	1.25
13.	Supervising the executives' development plan	2.98	0.96
14.	Mediating between top management and stakeholders (shareholders. employees. banks and other creditors. local government. etc.)	2.72	1.22

** Scale: from 1= least important to 5= most important.*

Source: J. Jeżak, L. Bohdanowicz, B. Kaźmierska-Jóźwiak, Z. Matyjas, 2016, Rola rad nadzorczych w procesach formułowania i realizowania strategii spółek, Lodz: Wyd. UŁ.

According to the Polish company law the minimum number of management board size is one, but the management boards of Polish listed companies usually count more members. Table 3 reports the mean, minimum, median, the first and third quantiles and maximum for management board size of the non-financial Polish listed companies between 2008 and 2015. The mean for the whole period counts 2.9932. In 2008 it amounted to 3.0978 and then decreased to 2.9062 in 2014 and to 2.9184 in 2015. Median counts 3 members and maximum counts 11 members. Maximum for the period calculates 11 members. The firs quantile, median and the third quantile show that most companies have management boards which consist of more than minimum number of members. Previous research showed that management board size of the Polish listed companies is positively related to managerial ownership, foreign ownership, company size, company age and number of female directors (Bohdanowicz, 2010).

Table 3. Management board size of the Polish listed companies between 2008 and 2014

Year	Mean	Min	1st quantile	Median	3rd quantile	Max	N
2008	3.0978	1	2	3	4	11	317
2009	2.9969	1	2	3	4	11	322
2010	3.0659	1	2	3	4	10	334
2011	3,0607	1	2	3	4	11	346
2012	2.9689	1	2	3	4	10	354
2013	2.9584	1	2	3	4	11	361
2014	2.9062	1	2	3	3	11	373
2015	2.9184	1	2	3	4	11	380
All	2.9932	1	2	3	4	11	2787

Source: Authors' own calculation.

Similarly, table 4 describes the mean, minimum, median, the first and third quantiles and maximum for supervisory board size of the non-financial Polish listed companies between 2008 and 2015. The Polish company law assumes that the minimum number of supervisory board's members counts 3 for private companies and 5 for public companies. The mean of supervisory board size for the whole period amounts 5.6882 and remained almost unchanged. In 2008 it counted 5.6719 and in 2015 amounted 5.6526. The median counts 5 members, the third quantile 6 members, and the maximum 15 members. These results show that more than 50% companies appointed supervisory boards, which count only minimum number of members. Moreover, research showed that supervisory board size of the Polish listed companies is positively related to foreign ownership, company size, company age and number of female directors, but negatively related to managerial ownership (Bohdanowicz, 2010).

Table 4. Supervisory board size of the Polish listed companies between 2008 and 2014

Year	Mean	Min	1st quantile	Median	3rd quantile	Max	N
2008	5.6719	5	5	5	6	13	317
2009	5.6708	5	5	5	6	13	322
2010	5.7216	5	5	5	6	13	334
2011	5,7110	5	5	5	6	13	346
2012	5.7034	5	5	5	6	13	354
2013	5.6981	5	5	5	6	15	361
2014	5.6783	5	5	5	6	15	373
2015	5.6526	5	5	5	6	15	380
All	5.6882	5	5	5	6	15	2787

Source: Authors' own calculation.

Generally, the Polish supervisory boards are perceived as passive and they rather react to the situation of the company rather than take part in shaping its policies and strategies (Jeżak, 2010). They suffer from similar problems like supervisory boards in other countries, where two-tier board model exist. For example, Ding *et al.* (2010) mentioned that Chinese supervisory boards are weak monitoring devices and at least three factors contribute to their ineffectiveness, that is the lack of information that is crucial for exercising their monitoring duties, the lack of expertise to fulfill their monitoring role, and the lack of legal supports to take actions.

Changes in Europe and need for them in the Polish two-tier board model

There is no single model that would be universally acceptable and considered to be superior. Although Tricker (2009) underlined that there was a time when countries which employed the two-tier board that this was a superior model to the unitary board and at one time the European Union tied to impose this model on all com-

panies in member states. This proposal encountered much resistance in the one-tier board countries.

However, the discussion on the institutional changes of corporate board models has a long tradition. As it was mentioned, in sixties of the previous century France introduced in the law of 24 July 1966 the optional model. But in January 1977 in Great Britain it was published a report by the committees chaired by Lord Allan Bullock (Master of St. Catherin's College, Oxford), that is Report of the committee of inquiry on industrial democracy. This report was mostly the representation of workers on the boards of the companies for which they work and was the subject of political and public debate held by the British Parliament, the Trades Union Congress (TUC) and the Confederation of British Industry (CBI). On the occasion a debate was conducted largely with the reference to German law on whether the introduction of workers' representation on the board should be accompanied by the introduction of a two-tier board model in place of a unitary board in Great Britain. During the discussion it was highlighted that in Great Britain full boards meet on average only once a month and often delegate their responsibilities to the senior management. It may resemble the two-tier board model, but there is a serious difference. Whereas in the United Kingdom the division the powers between the board and senior management is a matter for a board itself to decide, in Germany the law determines the division of powers between supervisory and management board. Then the Committee recognized that the German-style boards in the United Kingdom would become a reactive and passive body, which meet three or four times a year and hear reports from top managers. Hence the Committee started to discuss the model similar to Danish semi two-tier model, where executives and non-executives were permitted to seat on the supervisory board, but they found that in reality little would be gained. Finally, the Bullock Committee concentrated on its main task and concluded that the crucial question is not one-tier versus two-tier board model, but rather the board functions upon which the workers' representatives are represented (Davis, 1978).

Discussion on the potential changes of the UK board model showed that an one-tier board model in practices is a quite flexible body. A structure and functioning of a unitary board can be freely shaped and adjusted to the ownership structure, company size and other factors. An one-tier board can take o form of the all executive director board, the majority executive director board or the majority non-executive board (Garratt, 2003; Tricker, 2009). The all executive director board is found today in companies, which do not reach the stage at which is a need for non-executive directors, that is in many small companies, family owned companies and start-ups, and also in subsidiary companies operating in corporate groups. But growing companies may feel the need to add non-executive directors to gain additional expertise or represent the interests of external stakeholders, e.g. capital lenders. Nonetheless in the United States, the United Kingdom and other developed countries most listed companies now have the majority non-executive director boards.

Despite this, at the beginning of the XXI century several countries followed the way traced by France and introduced the possibility of choice between an one-tier and two-tier board (table 5). These countries have both the French and German legal code heritage. Thus, Belot *et al.* (2014) suggested that in this way there has been a slow, but steady, increase of competition in national regulatory within European Union and this competition brings to mind the competition for chartering among US states.

Table 5. Adaptation of an optional board model: Examples from EU countries

Country	Original board structure	Year of adaptation	Legal code heritage
Bulgaria	Two-tier board	2008	German civil law
Croatia	Two-tier board	2008	German civil law
Denmark	Two-tier board	2010	Scandinavian civil law
France	One-tier board	1966	French civil law
Hungary	Two-tier board	2006	German civil law
Italy	One-tier board	2004	French civil law
Luxemburg	One-tier board	2006	French civil law
The Netherlands	Two-tier board	2013	French civil law
Portugal	One-tier board	2006	French civil law
Romania	One-tier board	2006	French civil law
Slovenia	Two-tier board	2006	German civil law

Source: authors' construction based on F. Belot, E. Ginglinger, M.B., Slovin, M.E. Sushka, 2014. Freedom of choice between unitary and two-tier boards. Journal of Financial Economics, 112, pp. 364–385.

For now, some countries did not go this way and cling to the traditional model. It also applies to countries where a two-tier board model is employed and in addition where the co-determination between shareholders and employees does not exist. An example of a such country is Poland. Thus, in Poland there are approximately 11,000 joint-stock companies, including about 350 listed on the main market of the Warsaw Stock Exchange and about 400 listed on the New Connect (alternative stock exchange for small companies run by the WSE). All joint-stock companies have to appoint management board and supervisory board. Sometimes their functions are duplicated by other corporate governance mechanisms. For example state-owned companies and subsidiaries in corporate groups are often also supervised by the departments of corporate governance. In addition, there are companies owned by their top managers, where management board is a key authority and supervisory boards are appointed, because this is required by law, but they are inactive. Furthermore, some studies showed that the Polish supervisory boards are generally passive, reactive and not engaged in the process of the formulation of corporate strategy (Jeżak, 2010; Jeżak *et al.*, 2016; Rudolf *et al.*, 2002). In view of this, there were studies, which argued that also in Poland legislators should give companies the opportunity to choose between

an one-tier and two-tier board model (Jeżak, 2010; Nartowski, 2005; Siemiątkowski, 2004). Until now, it has no effect.

Conclusions

Our study shows the main features of a two-tier board model and the examples of changes in board models around Europe. Moreover, in details we described the Polish two-tier board model. We also underlined its imperfections and amongst others we pointed out that supervisory boards are perceived as passive and reactive. Moreover, they have often restricted access to information on companies and are play a weak role in the process of strategy creation. Hence we argue that the Polish system of corporate governance need some institutional changes. Accordingly the Polish legislators should consider the implementation an optional model, i.e. the possibility of choice between an one-tier and two-tier board model by companies. These changes were made in many European countries at the beginning of the twenty-first century. This is all the more important that as mentioned Belot *et al.* (2014) competition in national regulatory at EU level.

The implementation of an optional model would also increase the elasticity of corporate boards. Companies in countries where this model exist can appoint an traditional board model or a new one. Hence, Polish companies could choose between a two-tier model and one-tier model with its composition adjusted to ownership structure or company size, that is unitary boards with majority of inside or outside directors.

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Theoretical dilemmas of human capital management

Human capital is a young category in social sciences, also in management sciences. This results in definition problems. The purpose of the article is to specify the essence of human capital, especially from the perspective of an organisation. These deliberations determine the approach to assessment of human capital. They also affect the management concept. Analysis of the problem indicates the need for improvement of the assessment of human capital at the level of the organisation by considering qualitative criteria included in the "4 C" model. The characterisation of the essence of human capital requires a specific approach to implementation of personnel functions in an organisation. The solution is the modern concept of human capital management.

Introduction

The notion of "human capital" arouses controversies and dilemmas of definition nature and is even treated as a sign of a certain "new trend"[1]. Identification of its essence has implications for the measurement and concept of management. Therefore, the objective of the article is to present the method of assessment of human capital in the scale of an organisation, as well as present a new perspective in implementation of personnel functions.

1. The essence of human capital – definition dilemmas

Values embodied by people have been the subject of interest of the classics of economics since the mid-17th century. They included William Petty, Adam Smith, Jean-Baptiste Say, Adam Muller, Fridrich List, Irwing Fisher, Robert Owen, as well as Alfred Marshall, the author of the statement "The most valuable of all capital is that invested in human beings".[2] Initially,

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[1] Zawiślińska I., Osiński J., *„Kapitał ludzki" – neoliberalna nowomowa i fikcja posiadania*. In: Współczesny matrix. Fikcja w życiu gospodarczym, politycznym i społecznym. Publishing House of the SGH Warsaw School of Economics, Warsaw 2015, p. 45

[2] Domański S.R., Kapitał ludzki i wzrost gospodarczy, PWN, Warsaw 1993, p. 31

this issue was discussed only in the macroeconomic perspective. With time, it was more and more often also examined at the microeconomic level – of individuals and households. The term of human capital was used for the first time in the subject literature by Theodore Schultz in 1961.[3] The basis for this terminology is the definition of capital introduced by Irwing Fisher, understood as an "asset that produces a flow of income".[4] The research of Theodore Schultz and Garry Becker, conducted in the 1970s and 1980, resulted in creation of the modern theory of human capital. The implementation of econometric models in this theory was used to explain many significant socio-economic processes, and its validity was confirmed by the creators being awarded twice with the Alfred Nobel Prize, in 1979 and 1992. Identification of the essence of human capital underwent a substantial evolution. The minimalistic definitions of Schultz (1961), Mincer (1962), or Becker (1964), identified human capital only through the prism of education and training. As a result of development of new theories of growth, they were expanded with physical health and other abilities that improve individual accumulation of knowledge and skills. The subsequent enrichment of the interpretation of human capital results from the interest of sociology and political sciences, which brought the attention to the impact of standards and institutions on the quality of human capital. The subject literature contains numerous descriptions of the essence of human capital common for the macroeconomic and individual perspective. According to Ryszard Domański, "human capital is the resource of knowledge, skills, health, and vital energy, contained within every human being and within the society as a whole, specifying the capacity to work, to adapt to changes in the environment, and the possibility to create new solutions".[5] A comprehensive attempt was made by the definition suggested by Alessandra Faggian and Philip McCann, according to which human capital covers "knowledge, skills and competencies embodied by individuals and social relationships, which result in increase in productivity".[6] The theory of human capital was translated into the context of management sciences in the 1990s, due to the realised role of human capital. The real importance of human capital is proved by the fact that, in the last two phases of socio-economic development, i.e. in the knowledge-based economy, and in the current phase, in which transformation of knowledge into innovative solutions becomes an important objective, namely in the creativity-based economy, the factors determining success are the factors associated with human capital: knowledge and creativity of the workers. According to the World Bank, human capital and social capital are the source of 2/3 of the wealth of nations.[7] Human capital is considered to be the key factor shaping the level of

[3] Leśniewski M.A., Wspieranie rozwoju kompetencji menedżera w zarządzaniu miękkim przedsiębiorstwem – ujęcie modelowe. Rynek – Społeczeństwo – Kultura no. 4/2016, p. 65

[4] Grodziski J., Rola kapitału ludzkiego w rozwoju gospodarki globalnej. Publishing House of the Gdańsk University, Gdańsk 2003, p. 50

[5] Domański S.R., Kapitał ludzki i wzrost gospodarczy. Spis Publishing House, Warsaw 1993, p. 20

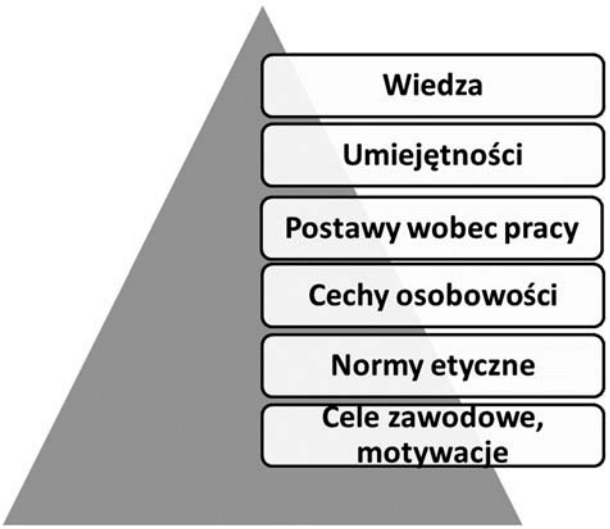
[6] Golejewska A., Kapitał ludzki, innowacje i instytucje a konkurencyjność regionów Europy Środkowej i Wschodniej. Natolin European Centre, Warsaw 2012, p. 31

[7] Przybyszewski R., Kapitał ludzki w procesie kształtowania gospodarki opartej na wiedzy, Difin, Warsaw 2007, p. 22

competitiveness. The strong dependence between these variables is proven by Pearson's linear correlation factor at the level of 0.736 between the place taken by Poland in the ranking of competitiveness of the World Economic Forum and the position of human capital in the ranking.[8] Therefore, the dogma of the contemporary management consists in the belief that human capital is the most valuable asset of a company and the main source of creation of goodwill, in place of financial and tangible capital.

In management sciences, human capital is examined in the individual context, and its value is formed by the following factors: knowledge, skills, attitudes, and personality traits, including health and psychophysical condition, capabilities, as well as professional goals, motivation and ethical standards /see: Fig. 1/.

Figure 1. The essence of human capital from the point of view of an individual



Polish	English
Wiedza	Knowledge
Umiejętności	Skills
Postawy wobec pracy	Attitude towards work
Cechy osobowości	Personality traits
Normy etyczne	Ethical standards
Cele zawodowe, motywacje	Professional goals, motivations

Source: prepared by the author

[8] Wosiek M., Tendencje rozwoju kapitału ludzkiego w Polsce przez pryzmat międzynarodowych porównań. Nierówności Społeczne a Wzrost Gospodarczy, no. 2/2014, p. 260

Human capital from the point of view of an individual is identified with the competence potential of an employee, which has a certain value and is the source of future income. It seems desirable to expand the scope of potential benefits with the professional satisfaction reached. Such a definition results in the possibility to perceive the employee as a capitalist, managing the capital he has at his disposal, which he makes available on specific terms.[9] The essence of this business is to manage one's own professional career, for instance using the individual development contract (IDC). The object of interest of management sciences also covers human capital from the perspective of an organisation. Its basis is the claim that human capital in an organisation consists of intangible assets embodied by employees, which are lent to the employer on the basis of specific employment relations.[10] Therefore, it is a serious simplification to use the term "human capital of an organisation". Traditionally, human capital in an organisation is treated as the sum of individual human capitals.[11] Such an approach, in my opinion, is ungrounded, since a set of factors determining individual capital does not reflect all factors that affect its value in the scale of an organisation. It is thus appropriate to make a distinction due to the different structure and the determining factors. For this reason, I propose a holistic model of human capital in an organisation, which assumes that the competence potential of employees is the key factor but does not determine the value of human capital. In the real world, teams formed by renowned professionals or excellent talents do not always achieve success. /See: Fig. 2/. The model of the Scandinavian company Skandia, popular in the literature and in the practice of management, pointed out to the fact that human capital in an organisation is determined not only by competencies, but also by interpersonal relations, including the ability to share knowledge, and trust, as well as the system of values and standards observed by the co-workers, resulting from the organisational culture existing within the company.[12] It seems desirable to enrich this set with other factors and the element related to social work environment, namely the organisational climate, which affects satisfaction of employees, their commitment and other attitudes that determine the efficiency of operation. Current atmosphere inside the organisation often has greater impact on the behaviour of employees than the applied standards, views and rules of behaviour, and even organisational and technical conditions. The importance of the climate and its impact on

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[9] Zawiślińska I., Osiński J., *„Kapitał ludzki" – neoliberalna nowomowa i fikcja posiadania.* …op. cit., p. 59

[10] Juchnowicz M., Pracownicy jako kapitał. In: Zarządzanie kapitałem ludzkim. Procesy-narzędzia-aplikacje (ed.) Juchnowicz M. PWE, Warsaw 2014, p. 34-35

[11] See: Fitz-enz J., *The ROI of Human Capital.* AMACOM, New York 2000, p. XI; Roos J., Roos G, Dragonetti N.C., Intellectual Capital – Navigating in the New Business Landscape, Macmillan Press, 1997, p. 36

[12] Skuza B.: *Zarządzanie kapitałem intelektualnym na przykładzie Grupy Skania. In: Zarządzanie wiedzą w przedsiębiorstwie, (ed.) B.* Wawrzyniak, Publishing House of the Kozminski University , Warsaw 2003, p. 202.

Figure 2. The structure of human capital in the organisational perspective – the "4C" model

Polish	English
KAPITAŁ LUDZKI	HUMAN CAPITAL
KOMPETENCJE • wiedza, • doświadczenie, • umiejętności, • postawy, • uzdolnienia, • osobowość, • zainteresowania, • kondycja fizyczna, • motywacja.	COMPETENCIES • knowledge, • experience, • skills, • attitudes, • talents, • personality, • interests, • physical fitness, • motivation.
KONTAKTY INTERPERSONALNE • style przewodzenia, • stosunki międzyludzkie, • zdolność do dzielenia się wiedzą, • zaufanie, • system komunikacji i informacji.	INTERPERSONAL CONTACTS • leadership styles, • human relations, • ability to share knowledge, • trust, • communication and information system.
KUTLURA ORGANIZACJI • system wartości i norm, • zwyczaje, rytuały, • wzory zachowań, • symbole.	ORGANISATIONAL CULTURE • system of values and standards, • customs, rituals, • behavioural patterns, • symbols.
KLIMAT ORGANIZACYJNY • atmosfera panująca w organizacji	ORGANISATIONAL CLIMATE • atmosphere in the organisation

Source: prepared by the author

organisational achievements is confirmed by empirical research findings.[13] As a result, the model of the structure of human capital in the organisational perspective, specified as the "4 C" model, consists of four elements:

- competencies, namely knowledge, skills, attitudes, abilities, psycho-physical condition, styles of activity, personality, standards and other qualities that, when used and developed in the process of work, lead to achievement of results consistent with the strategic intentions of the organisation,
- interpersonal contacts, including human relations, as well as the system of communication and information in the company,
- organisational culture, namely the formal and informal system of thought and behavioural patterns in the organisation, and
- organisational climate, namely the atmosphere prevailing in the organisation, experienced subjectively by employees, dependent on individual personal characteristics of employees and organisational conditions.

The indicated components of human capital interact with each other in the process of value creation. Human capital in the organisation is formed as a result of interrelationships and interdependencies of the aforementioned elements.

2. Assessment of human capital

Defining the essence and the constituent elements of human capital determines the method of assessment.

At the level of an individual, assessment of human capital is rich and diverse in terms of methods and criteria. The assessment criteria are developed systematically, from quantitative formal criteria (e.g. diplomas, certificates, years of employment) to qualitative criteria, namely the level of alignment with the requirements, standards (e.g. knowledge test, tests of professional skills, assessment of the values held). The assessment methods are also systematically perfected, thanks to the application of numerous socio-psychological techniques and tools.[14] The subject literature and good practices prove that the optimal solution is to use competence systems in the management process, above all, at the stage of recruitment and selection, as well as assessment and management of professional career paths.[15]

In macroeconomic scale, the assessment of human capital takes the following criteria into account: 1. qualified workforce availability, 2. constant in-service training ratio, 3. percentage of adults (over 15 years old) with the ability to read and write, 4. number of university students (enrolment ratio at this level of education), 5. number of academic teachers per one student, number of Internet users (per 1000 inhabitants), 6.

[13] Cafferkey K., Dundon T., Explaining the black box: HPWS and organisational climate. Personnel Review, London No. 5/2015, p. 666–688

[14] E.g.: Rostkowski T., Danilewicz D., Praktyki zarządzania kapitałem ludzkim w doradztwie zawodowym, Difin, Warsaw 2012, Padzik K., Ocena pracowników. Wolters Kluwer, Warsaw 2013,

[15] Prokopowicz P., Żmuda G. Król M., Kompetencyjne testy sytuacyjne w rekrutacji, selekcji i ocenie pracowników. Teoria i zastosowanie. Wolters Kluwer, Warsaw 2014

number of Internet users (per 1000 inhabitants), 7. expenses for public education (% of GDP). An exemplary assessment method is international analysis with the use of the human capital ratio, calculated as an arithmetic mean of partial ratios, assessed in the scale of 1-10.[16] Studies conducted according to this method identify the position of Poland as 27th among the 40 assessed countries. /See: Fig. 3/

Figure 3. Ranking of countries in terms of human capital level

Polish	English
1. Dania	1. Denmark
2. Szwecja	2. Sweden
3. Islandia	3. Iceland
4. Norwegia	4. Norway
5. Belgia	5. Belgium
25. Włochy	25. Italy
26. Hiszpania	26. Spain
27. Polska	27. Poland
28. Czechy	28. Czech Republic
29. Grecja	29. Greece
36. Filipiny	36. Philippines
37. Brazylia	37. Brazil
38. Chiny	38. China
39. Turcja	39. Turkey
40. Indie	40. India

Source: on the basis of: Wosiek M., Tendencje rozwoju kapitału ludzkiego w Polsce przez pryzmat międzynarodowych porównań. Nierówności Społeczne a Wzrost Gospodarczy, no. 2/2014, p. 261

[16] Yeh-Yun Lin C., Edvinsson L., National intellectual capital: comparison of 40 countries, New York, 2011, p. 19–20

The literature on the subject also includes various concepts of the assessment of human capital in the scale of an organisation.[17] Numerous reservations are raised against these methods concerning their methodologies and their credibility, practical usability. An example of an original approach is the method of dimensioning based on the structure of human capital in the organisation according to the 4C model presented above.[18] Its application allows for an interdisciplinary and comprehensive measurement of quantitative and qualitative characteristics of human capital. The developed tool also allows for expressing the values of the available human capital in monetary units.

3. Evolution of the resource-based concept – towards human capital management

The context of functioning of the organization, the prominent trends of the contemporary economics, such as behavioural economics and new institutional economics, as well as the new paradigms of management sciences have created premises for the development of subsequent management generations. This results in significant consequences for the personnel function. The main determinants of changes include the new organisation models, the need for constant development, the increase in the interest in employees' emotions, which results in shaping of long-term satisfaction and commitment of employees, value-based management, building of social capital by means of "strategic partnership".[19] As a result, due to pragmatic idealism, rather than – as claimed by Zawiślińska and Osiński[20] – subordination to the neoliberal ideology, management 3.0 emphasises such values as leadership, entrepreneurship and partnership. This creates the necessity of replacing, in practice, the concept of human resource management with a completely new concept of human capital management (Fig. 4). The change has more than just the semantic aspect. It is not limited to introduction of measurement and valuation to the implementation of the personnel function[21], and the strategic objective of this function is not only to provide the rate of return on equity from the point of view of the investor.[22]

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[17] E.g.: Łukasiewicz G., Kapitał ludzki organizacji. Pomiar i sprawozdawczość. PWN, Warsaw 2009, Lipka A., W poszukiwaniu wyceny kapitału ludzkiego. In: Zarządzanie wartością kapitału ludzkiego organizacji (ed.) Lipka A., Waszczak S., Katowice School of Economics, Katowice 2007,

[18] Pomiar kapitału ludzkiego przedsiębiorstwa – perspektywy badawcze. https://www.parp.gov.pl/, / date of access 14.06.2017/

[19] More on this topic: Juchnowicz M., Założenia koncepcji zarządzania kapitałem ludzkim. In: Zarządzanie kapitałem ludzkim… op. cit., p. 129-140

[20] Zawiślińska I., Osiński J., „Kapitał ludzki" – neoliberalna nowomowa i fikcja posiadania... op.cit, p. 44,61

[21] Armstrong M., Baron A., Zarządzanie Kapitałem ludzkim. Oficyna a Wolters Kluwer business, Cracow 2008, p. 39

[22] Jamka B., Czynnik ludzki we współczesnym przedsiębiorstwie: zasób czy kapitał? Oficyna a Wolters Kluwer business, Warsaw 2011, p. 339

Figure 4. Comparative analysis of the resource-based concept and human capital management

Aspect	Resource-based concept	Human capital concept
Role	Strategic resource	Source of value creation
Basis for the system	Strategy	Organisational culture, values
Purpose of management	Productivity	Increase in the value of intellectual capital of the organisation
Financial significance	Cost element	Profit leverage
Relation with employees	Employed	Internal client + partner
Growth in competence potential	Development	Investment with a specific rate of return
Shaping of the employees' attitudes and behaviours	Motivating	Commitment

Source: prepared by the author.

Human capital management is a new stage in the development of this function, which combines consequent business approach with behavioural models. In practice, this means basing of the management process and tools on competences and humanisation of employment relations. The modern set of instruments proves that this is a fully shaped management concept.

Conclusions

Treating the values embodied by employees as human capital obligates to measure quality in a holistic manner, namely taking account of the group of factors determining its quality from the perspective of the organisation. It also creates the need for consistent application of the concept of human capital management to the implementation of the personnel function in the context of contemporary organisations.

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Network organization as an emerging organization. Influence of ICT[1] on transformations of management structures

The development of Information and Communication Technologies (ICT) resulted in transforming the hierarchical organizations into networking flexible ones. In the circumstances of identifying a new type of organizations, the notions as 'organization' and 'synergy' should be revised. The organizations with individual elements that build up a network have altered their attitude towards the problem of a global optimum. Individual elements that can be called 'junctions,' strive to optimize local optima instead of the traditionally approached global optimum. The article offers a hypothesis that a networking organization is formed when all its elements gain profits. What is needed to form it is the consensus of all the constituent elements. The management of networking organization is supported by the contemporary ICT tools that help to manage the network. Intellectual capital is the most important element of a networking organization. A new organizational form is becoming fully competitive against traditional organizations with the fixed position in the market. A comparison of the model of business functioning of a traditional and a networking organization has been made. The model shows what economic conditions should be met to form networking organizations. It presents as well practical examples of relations between traditional and networking organizations. The suggested further research into the issue has been outlined in the text.
Keywords: **Information and Communication Technology, hierarchical organization, networking organization, synergy, global optimum, local optimum.**

[1] Information and Communication Technologies

Introduction

The article dwells upon the changes going on in the functioning of an organization in terms of the Information and Communication Technologies (ICT) development. The contemporary ICT channeled the founding of networking organizations, i.e. the forming of new opinions on paradigms 'organization' and 'synergy.' Within the new conditions of founding networking organizations and ICT development, these traditional notions originating in the systems theory, need to be revised. This in particular concerns the naming of organizations that we treat as superior to the notion 'synergy.' In the management sciences there exist widely applied terms formulated by the founders of the systems theory, i.e. L. von Bertalanffy (1969), A. Backlund (2000), B.Wilson (2000). According to the systems theory, the management sciences apply a paradigm that claims that an organization is a system where constituent elements (sub-systems) work for the good of the whole (a global optimum). As a consequence, an organization is gaining a total effect higher than in case of summing up individual effects of constituent elements (sub-systems). The adopting of this paradigm justifies the approach that what is important is a global optimum while local optima for individual elements of an organization are not so significant. What is important is the organization as a whole. It works according to a marketing motto of 'a big can do more.' As a consequence, what is desirable is such a state where the system of power and knowledge transfer is available for the whole organization. The fact that individual elements of the organization may report a loss is of smaller importance.

Networking organization concept

Development of ICT created a new type of organizations that is the networking organizations. The networking organizations, with their individual elements building up a network, reported an altered attitude towards a global optimum. Individual elements that can be called junctions, strive to optimize local optima. The product of the whole organization is not so important for individual elements of a networking organization. In a new situation, a networking organization is founded only when it is profitable for all constituent elements (junctions) (see J. Kisielnicki, ed., 2008). As we are going to demonstrate further on, these elements of the organization that have not reported direct profit, show resistance to the automatic founding of an organization that ignores their new situation. The unfamiliarity with a new paradigm to the effect that an organization is founded only when its all elements gain profit frequently provokes strong resistance to forming a new organization. Many newly established corporations report conflicts that are sometimes quite serious. A hypothesis can be formulated to the effect that a networking organization as a contemporary type of an organization is founded only when all constituent elements gain profit on its being founded. In other words, the founding of a networking organization requires a consensus on the part of all constituent elements. The networking organization management infrastructure is provided by contemporary tools offered by ICT, and particularly that support the network management.

There is no generally accepted definition of the notion of a networking organization. In the literature it is frequently defined by its properties. M. Townsend, L.

Coen, K. Watson (2017), D. Kirpatrick (2011) as well as G. Hamel (2007 and 2011) analyze organizations from the angle of management. They claim that the future of management lies in self-governed teams oriented towards a fast and effective communication and competences development. A networking organization should work in this way.

We assume that a networking organization is voluntarily founded by different type of organizations. The organizations set up unions, which is facilitated by ICT. The aim of such unions is to bring profits for all the participants. The profit of individual elements (organizations) should be higher than in case of individual organizations forming networking organizations acted in a traditional way. The duration of a union is fixed by an organization that as the first sees the further existence of the union as unfavorable. The remaining organizations may continue a networking union if they deem it purposeful. A new union, also a networking one, continues to function without the organization that left it. These new systems may enter into unions with other organizations. As a consequence, a brand new networking organization is founded. The key property of a networking organization is the swiftness of operation offering a possibility to adjust to the new conditions of the 'changing world.' Internet gives this ability, therefore it can be ascertained that this organization is a 'child' of global computer networks.

According to the above, a networking organization is the organization that meets the following criteria:

- founded voluntarily, with its members forming different unions to accomplish a common purpose,
- duration of an union is fixed by each of members of the organization. The decision on its dissolution can be made by a member who as a first resolves the existence of the union and leaves it,
- organization functions in cyberspace. The cyberspace is determined by the following two basic elements:
  - computer systems situated in different places of physical space, able to receive or send information,
  - global computer networks able to carry the information, or enabling communication among the existing computer systems.

The relations among the elements of a networking organization assume the form of various ties determined by the adopted communication procedures and protocols and the legislation in force. The latter is not always adjusted to the changing world. A particular property of cyberspace is its multidisciplinary character of ties and impossibility to define its boundaries through physical measurements.

On certain practical aspects of the functioning of a networking organization

I would like to present the examples of three different behaviors of an organization in the real world. There was no consent to provide detailed figures however the presentation will concern behaviors of the organizations within the process of changes.

The examples demonstrate that an ignorance of business proceedings differences between networking and traditional organizations causes conflicts that sometimes need an intervention of high-ranking state administration. After some time, decision-makers became aware of their wrong decisions and in a consequence conflicts were settled. Finally they decided to build one networking organization instead one traditional organization. Therefore they could achieve less profit. However the less profit is compansated with savings and higher efficiency in unit networking organizations. Additionally, managers, working in networking organizations, were more efficient than in a big traditional corporation. Communication channels have been shortened and managers were closer to their teams and workers.

Examples contain many different relations between traditional and networking organizations. Particular attention is paid to Example I for which the mathematical business model (MBM) is presented. Using this model we can calculate founds required by the mining company in order to prevent it from closing. This funding has been used to build one company consisting of 14 plants belonging to the mine. Example II shows a transformation of the traditional company into networking organization. Example III shows people resistance to change which did not allow to build a networking organization. For this example MBM is presented as a general model only due to a lack of permission for detailed data publication.

Example I. Complex coal mines. Fourteen mines in a networking organization. Certain aspects of the price policy and coal export solutions were a subject of negotiations. The mines had different owners, including the State Treasury. The coal quality and technical conditions of mining varied in individual mines. The organizational structure was transformed in 2012. The mines were taken over by one owner who introduced a hierarchical management system, typical for traditional organizations. Therefore, a networking organization was replaced with a traditional one. The economic calculation showed that the closing-up of one mine would bring profit to the newly formed organization (now composed of 13 mines). The workforce of the closing-up mine refused to agree to the liquidation and staged an underground protest. Miners working in 13 mines threatened with a solidarity strike. As a result of multilateral many-hour negotiations with the presence of the Prime Minister, a solution was adopted requiring putting capital into the 14th mine. The social respects forced decision resulted in a lower profit of the whole system of 14 mines. In the new circumstances of coming back to the networking management system there is no social tension. Each mine is profitable. Obviously it was not the best solution from the owner's point of view. However, leaving the traditional management system would entail considerable economic losses and social unrest. (Author's own elaboration is based on data from the Ministry of Economy PR-2014).

Example II. Sugar factories in a certain region of the country worked independently. All seven plants had traditional management systems. Their economic results differ in different years. Despite the various threats, factories managed to coordinate

work and they formed a networking organization. They settle accounts and distribute the gained profits according to the algorithm accepted by all sugar plants. Each plant is an element of the networking organization. Although the networking organization system has operated for five years, every year individual plants reported beneficial results. The networking organization consists of marketing, sales, training, legal, operation departments and ITC development department (including one set of information, or data warehouses). (Author's elaboration is based on experts' opinions prepared for the Sugar Industrial Group, 2011–2013).

Example III. Ministry of Science and Higher Education in Poland decided to launch a universal open hosting and communication platform for networking of knowledge resources of science, education and open knowledge society throughout the country. The platform was a starting point for building a nation-wide scientific and technical information system. Therefore, a traditional organization was established, consisting of 17 scientific centers selected from the best universities. The activity of the newly established traditional organization failed. Universities did not want their groups of researchers let go. They even rejected financial bonuses in the form of investments in the infrastructure. Universities are independent administrative bodies. Eventually, they accepted a proposal of establishing networking organization with Universities, implementing SYNAT (in Polish: System informacji Naukowej i Technicznej), the system of scientific and technological information. The project finished successfully. (Author's elaboration is based on documents of the Ministry of Science and Higher Education, and the SYNAT project; J. Kisielnicki, 2013).

Organizations described above have invested considerable founds on the ICT modernization over the recent three years. The examples show the following shifts: Example I – a networking organization to a traditional one and then coming back to the networking one; Example II – a traditional organization to a networking one; Example III – failure in the establishment of traditional organization and acceptance of a networking form. Therefore, there are many situations where networking organizations are replaced with hierarchical (traditional) ones. In such circumstances a global optimum is replaced with local optima. The management system changes into more flexible one having a free transfer of information and knowledge. Networking organizations operate in larger dimensions than traditional ones.

The European Union (EU) can be recognized as a new type of an emerging networking organization. The countries that join it make the decision independently expecting benefits stemming from the membership. In practice, every country joining the UE does it for own benefits. This way we are having an optimization within particular countries (local optima – in network nodes) but not a global optimum within UE. Countries outside the Union fear that a potential membership would deteriorate their political and economic condition. EU does not possess all the properties of a networking organization. E.g., it is not possible to leave it freely; it also has authorities that may take certain decisions in the Member States.

The paradigm of 'organization' and 'synergy' notions in the context of the emergence of networking organizations and ICT development

A paradigm according to T. Khun (1985) means the description of what is shared by all members of a certain scientific discipline, and exclusively by them. And vice versa; the sharing of a common paradigm makes a group of somehow dispersed people be such a discipline. A paradigm as such is a collection of notions and theories forming foundations for a certain science. Theories and notions that form a paradigm are rather unquestionable; at least until a paradigm is cognitively creative. It also means 'a model.' A paradigm can be treated as a well-ordered collection of beliefs, approaches or assumptions shared by scientists of a given discipline. A paradigm can be also described as a model scientific achievement shared by a certain scientific community as well as the process of scientific cognition itself. Therefore, it is a model, multimodal methodological approach adopted by a certain community of practitioners. What is important for us is an ontological aspect of a paradigm. The ontological models reflect an intrinsic structure and the ways of functioning of a part of reality under study. It is believed that out of a collection of paradigms pertaining to management sciences, two notions: of 'organization' and 'synergy' need being revised. These two paradigms are linked with the generally ruling systems approach.

The classical literature on management sciences argues, similarly to T. Kotarbiński (1975), that an organization is a kind of the whole determined by the attitude of its constituent elements to itself. Therefore, it is the whole where all the components cowork to bring about the success of the whole. Similar descriptions of an organization are offered by A.F. Stoner, C. Wankel (2016); K.C. Loudon, J.P. Loudon (2016); R.W. Griffin (2013). In other words, an organization can be seen as a certain hierarchical structure directed towards accomplishing a purpose or purposes. These rules, however, do not work in the conditions of emerging a new type of organizations, namely networking organizations. The setting up of a new type of an organizational system, i.e. networking organizations, offers a revised approach to the issues of the contemporary management theory. In networking organizations we can recognize new values absent in the traditional organizations. This, however, poses new threats.

The analysis of the notion 'organization' requires a closer look at how one of the most popular paradigms, i.e. synergy functions in traditional and networking organizations.

Synergy means such cooperation of an organization and its elements that is more effective than the sum of their separate actions. The phenomenon of synergy can be described as the one where the elements constituting a system, here: an organization, give a result somehow higher than a simple sum of effects produced by each separate factor. Therefore, synergy is a universal prerogative operating everywhere in micro- and macro-management.

What entitles us to claim that the two paradigms function not always according to the rules of the classical management theory? It is the paradigm of synergy that is

a spirit's movement of establishing organizations. The classical management theory argues that in an organization each of its constituent elements faces a task to act for the good of the whole. This does not concern a networking organization. Such organization is established to contribute to the success of all the elements that form it. As practice shows, individual entities forming networking organizations are interested above all in what will they gain on the establishment of the organization and then in what will the established organization achieve as a whole. Some directions of applying ICT in management sciences resulted in the presently referred to 'new face of management' with a networking organization as one of its images. The description of a network is one of the most important ideas behind the coining of the organization science (M. Castells, 1996). The term of a 'networking organization' was popularized by P. Drucker (1998), R.E. Miles and C.C. Snow (1992), A.I. Oliver and M. Ebers (1998) inter alia. The functioning of a networking organization requires different management mechanisms than those in traditional organizations. It has to be accentuated, however, that the term of a 'networking organization' is not popular. P. Senge (1990) refers to such type of organizations as the 'learning organizations.' Meanwhile, M. Hammer, J. Champy (1994) call them 're-engineering organizations,' and J.B. Quinn, (1992) – 'intelligent organizations.' There also exists the term 'virtual organizations.' The authors who apply it claim that the term 'virtual' originates in the Latin words of 'virtualis,' i.e. effective, and 'virtus,' i.e. might. 'Virtual' also means theoretically existable; see J.A. Byrne, R. Brandt (1993); W. Davidow, M. Malone (1992); W. Faisst (1997); J. Kisielnicki, ed., (2008). The analyzed type of a new organization may be included in the class of emerging organizations, i.e. the so-called emergent systems (L. Markus, A. Majchrzak, L. Gasser, 2002).

Addressing a traditional organization as a system we are talking about the rules of synergy. The total result of the functioning of the whole organization is higher than the sum of the results of separately functioning elements. That is why there are frequent situations when individual organizational elements being the parts of a larger traditional organization report losses, but due to the effect of synergy, the whole (the organization) scores a success. Such a situation has been described earlier in three examples.

A networking organization gives synergy effects too, however the most important is that each constituent element can gain profit for itself. If it does not report profits, or does not expect reporting them, it does not form it, i.e. does not enter the organizational system. That is why a networking organization can be called an egoistic organization in a good sense of the term. The intellectual capital is the most important element of a networking organization. If the managing staff shows unique competences and relevant intellectual capital while forming a network organization, it may make a new organizational form becoming fully competitive towards traditional organizations with the fixed position in the market and higher financial assets. This way the interconnected small organizations may become fully competitive towards even the largest organizations. Each entity being a component of a network organization should show unique competences to testify it is an attractive partner, i.e. it offers what others cannot for the

common good. In network organizations, contrary to traditional ones, there exists the notion of 'distance.' Elements forming a network organization as well as its clients are as far from one another as one 'click.' One can say that one's organization is where one's computer (laptop) is, and frequently the ICT development suffices it to have a multifunction cellular phone (smartphone). The effectiveness of organization's performance is strongly determined by issues linked with the knowledge transfer and moral standards of the managing staff and employees of such an organization. High moral standards and entailing trustworthiness are in our opinion the key elements that determine the effective functioning of networking organizations (J. Kisielnicki, 2008).

A networking organization as a new form of organization's functioning

Founding and functioning of a networking organization was channeled by the ICT development. This technology helps improve the management and offers ever more effective tools. In management it is common to strive to make decisions by applying the following communication chain:

D (data) – I (information) – K (knowledge) – W (wisdom)

We may acknowledge that information plays a key position in this chain. It assumes different forms; frequently being processed (knowledge, wisdom), or raw (data). The information in management is treated as idiosyncratic resources that help solve a wide range of problems. Management deals with issues linked with decision making while the application of information and knowledge means solving various problems pertaining to the functioning of individual entities in the conditions of shortages of such resources as soil, workforce, capital and entrepreneurship. Decisions made in these domains should heed practical, unlimited needs of society. To meet these needs, or to face the problem of shortages, different decision making procedures are being applied. They in turn help settle the question of the allocation of the resources. The contemporary theory of management sciences, supporting in this field economics sciences, deals with the process of making decisions aimed to obtain a way the contemporary society should face problems stemming from the phenomena of shortages of resources, including information and knowledge.

The information and knowledge management is the essence of the contemporary phase of the development of management sciences. That is why it seems that we are witnessing the emergence of a new stage of the development of the management sciences discipline that can be referred to as the information and knowledge management school. The knowledge-based organization is not only a state that should be achieved, but also the continuous process that should be progressively developed. According to Z. Gackowski (2012), the knowledge development proceeds along an ascending and expanding spiral from primary information, through factual data, secondary information and data, knowledge and concepts to the still blurred notion of wisdom. This is concordant with the ascertainment that the future of the decision making theory lies in the implementation of an economic model based on information and knowledge. The

ICT, and especially computer networks, gives us possibility to find networking organizations as global organizations applying information and knowledge management and ever more advanced tools supporting the decision making processes.

The contemporary global organization, assuming it is a networking organization, functions in cyberspace. Here the time of information transfer and sharing knowledge, as well as the duration of the decision making process, is very short and frequently expressed as microseconds. From the wide range of tools accessible to contemporary managers and executives the following new possibilities offered by ICT should be mentioned:

- the setting up of global information networks, e.g., the Internet, enabling the creation of new organizational forms for different branches, such as e-trade, e-learning, e-banking, e-administration,
- access to large information resources and to large dispersed data bases and data warehouses and knowledge bases enabling the information and knowledge transfer in unprecedented alignments at unprecedented speed and intensity,
- tools supporting management, e.g., MIS (Management Information System) advisory systems, and in particular ERP (Enterprise Resource Planning) and BI (Business Intelligence) complex services.

The development of the ICT-related tools is aided by the cloud computing technology (T. Velte, R. Velte, 2009; B. Rosenberg, 2014). Nevertheless, as noted by R.S. Burt (2005), due to cultural limitations the capacity of networks and the functioning of networking organizations are not fully used.

Mathematical Business Model (MBM) of a networking organization

The aim of the mathematical business model (MBM) is a formal representation of the situation when we want to transform a hierarchical (traditional) organization into a networking one. This situation has been described in the Example I. To prove the hypothesis that the paradigm of synergy works to a limited extent in networking organizations, let us compare the business model of the functioning of a networking organization. The model shows what conditions should be met to form networking organizations. We can use it to compute at which profits (in the model named bonuses) hierarchical (traditional) organization is willing to enter into coalitions with other organizations and be a part of the network organization.

While considering the business model of a networking organization let us adopt the following dependencies:

Ω – is a set of all organizations under consideration where O_i is an i- exact organization, with $\forall O_i \in \Omega$.

Each exact organization may form unions (alliances, system).

We may choose between the following:

Ω complex (a system understood as a subset of cooperating organizations selected from the Ω set) of networking organizations W, where $W_k \in W$ – is a k- exact net-

working organization, with $\forall W_k \subset \Omega, \quad L(W_k) > 1$ where $L(W_k)$ – the size of a networking organization,

Ω complex (a system understood as a subset of the Ω set) of hierarchically (traditionally) interrelated organizations T, where $T_l \in T$ – is an l- exact hierarchical (traditional) organization, with $L(T_l)$ is the size of a hierarchical (traditional) organization.

An O_i organization cannot simultaneously belong to the complex W and the complex T, i.e.

$$O_i \in T \Rightarrow O_i \notin W$$

and

$$O_i \in W \Rightarrow O_i \notin T$$

The criterion of appraising the organization's functioning is achieving a certain economic effect. In simple terms, we are assuming that such an effect can be provided by an individual profit (there can be, of course, any other effect) of $Z(O_i)$.

An organization that strives to increase profits faces the following options:

1. to increase profit as a result of networking relations – to obtain the profit of $Z_{Wk}(O_i)$ – this is the profit of an i- organization when $\forall O_i \in W_k$,
2. to increase profit through hierarchical (traditional) ties – to obtain the profit of $Z_{Tl}(O_i)$ – this is the profit of an i- organization when $\forall O_i \in T_l$.

The following takes place, respectively:

$Z_{Wk}(O_i) > Z(O_i$, *and* $Z_{Tl}(O_i) > Z(O_i)$,

where $Z(O_i)$ means the profit obtained as a result of the independent functioning of the O_i organization with the absence of any ties and strategic alliances. Otherwise the organization would not seek any change of the hitherto relationships.

An organization strives to obtain the highest possible profit and builds virtual relationships only when its profit of $Z_{Wk}(O_i)$ is higher than that in traditional ties, or when it works independently.

The hierarchically (traditionally) interrelated organizations do not maximize individual profits (of each organization) but they maximize the total profit for an organization as a whole.

Calculating total profits we get:

- for hierarchical (traditional) organizations

$$Z(T_l) = \sum_{j=1}^{L(T_l)} Z_{T_l}(O_j) \geq \sum_{j=1}^{L(T_l)} Z(O_j) where \forall O_j \in T_l$$

- for networking organizations

$$Z(W_k) = \sum_{j=1}^{L(W_k)} Z_{W_k}(O_j) \geq \sum_{j=1}^{L(W_k)} Z(O_j) where \forall O_j \in W_k$$

Traditional organizations maximize the profit for an organization as a whole while networking organizations maximize the profit for each constituent organization.

Therefore, the following dependencies appear for hypothetical complexes:

- the profit of a complex

$$Z(T) \geq Z(W) \vee Z(T) < Z(W)$$

- but the profit of an individual organization

$$Z_{T_l}(O_i) \leq Z_{W_k}(O_i)$$

A networking organization also strives to maximize the profit over a short time. This results from the fact that the decisions here are being made in rapidly changing conditions. Hierarchical organizations maximize the profit, too, but within longer periods.

The probability of obtaining profit depends on the following elements, inter alia, (there are, of course, other premises):

- speed and flexibility of adjusting to the changes with the obvious supremacy here on the part of networking organizations,
- the position of an organization in the market with hierarchical (traditional) organizations having an advantage over networking ones.

Let us take P_n as a probability of earning profit by an organization where n means a factor determining this probability. We are then considering the relationship between $P_n(Z_{Tl})$ and $P_n(Z_{Tk})$. If a probability of earning profit is higher for a hierarchical (traditional) organization, the strivings should lead to founding such an organization. However, in the circumstances when at least one of the organizations that can join a hierarchical (traditional) organization may earn a higher profit in a networking organization, or:

$P_n(Z_{Tl}(O_i)) < P_n(Z_{Wk}(O_i))$,

it refuses to join such traditional organization and strives to form a networking organization. This is irrespective of whether the whole organization under the rule of synergy could obtain profits in the context of its condition before establishing of a network relationship. Nevertheless, depending on a position of the remaining organizations, it can be forced to join a traditional organization.

Possible decision-making situations:

- the O_i organization within a networking organization would obtain the profit of $ZW_i(O_i)$, $ZW_k(O_i)$ is the profit of an i- organization,
- the O_i organization within a hierarchical (traditional) organization would obtain the profit of $ZT_i(O_i)$, with $ZW_i(O_i) > ZT_i(O_i)$,
- the remaining organizations that may form a hierarchical (traditional) organization with O_i
  - would obtain the profit of $ZW_i(O_i)'$ within a networking organization,
  - would obtain the profit of $ZT_i(O_i)'$ within a hierarchical (traditional) organization,

– with the appearance of $ZT_i(O_i)' > ZW_i(O_i)'$.

Therefore, these organizations are willing to offer a bonus to the O_i organization.

– let us take $PZ(O_i)_1$ as a bonus for joining a hierarchical (traditional) organizations.

If the O_i organization does not obtain a bonus of $PZ(O_i) < ZT_i(O_i)' - ZW_i(O_i)'$, it will strive to join a coalition of other organizations of the W set that do not belong to the rival T_j subset. However, without the O_i organization it may happen that a traditional organization fails to achieve the expected effects and such an alliance will be never set up. What we were trying to prove is that the notion of synergy is functioning within a limited boundaries and it is being replaced in this type of unions with the broadly understood notion of profits that are not necessarily economic ones. It can be assumed that the PZ(Oi)i as a bonus for joining a traditional Organizations, is that element which causes changes in redistribution of the expected profit in the networking organization. As described examples show, not always there are clear situations.

In the Example I, a synergy has been reduced by the amount of the effort to invest in 14 mines, which was the situation described in the MBM. However, in Example II, the network organization establishment achieved synergies and helped to survive the crisis in all sugar factories. Example III shows that the creation of a network organization may meet very strong resistance to change in existing hierarchical (traditional) organizations. Then there is an obligation to take such decisions, which, although not bring the expected economic effect is synergistic but will operate for the benefit of society. MBM allows simulating different decision variants and choosing the one which might not be an optimal decision however satisfactory decision.

Conclusions and directions of future research

- Information and communication technologies (ICT) have allowed transforming hierarchical (traditional) organizations to new ones. These new organizations are called networking organizations are characterized by eliminating indirect links in information channels and through creating the so-called hubs they enable management decentralization and democratization. In networking organizations performance is optimized in network nodes in the first place. As it was demonstrated with the business model, the planning of basic elements in the economic calculation is carried out in a different way than in case of traditional organizations. In networking organizations there is the primacy of local optimization over the global optimization.
- Owing to the ICT development and access to the Internet, Big Data tools and Cloud Computing technology, the functioning of a networking organization becomes ever more global. If we are striving for fast effects but have limited resources, our strategy should be the founding of networking organizations.
- The limited size of the article makes it difficult to properly dwell upon all the signaled issues. Of course, networking organizations not always attain supremacy

over the hierarchical (traditional) ones. The speed of making decisions especially in emergencies, as practice shows, is obviously higher in hierarchical (traditional) organizations. In a networking organization the decisions should be agreed on thus causing delays. Nevertheless, a hypothesis can be formulated to the effect that with the joint taking decisions in networking organizations there is a larger share of management in the conditions of fuller knowledge than in traditional organizations. The further research is planned to go exactly in this direction.

- In this study, we also observes changes in the management system. It must be highlighted that the role of a manager and methods of management have changed. A manager, due to variable models of functioning, becomes a trainer, not a boss. Management in networking organizations requires high skills, especially in the communication area. This issue will be a subject for a further research.

It has been assumed that the article in this form is a voice in the discussion on the changes in management sciences brought about by the ICT development.

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Levels of hybridity in healthcare sector

The main force hybridising healthcare sector is the increasingly dominant policy agenda aiming at the containment of public spending for health. Governments, in order to maintain near-universal medical coverage for all their citizens, begun to implement New Public Management principles and other instruments the purpose of which is to increase the efficiency of the sector. These tools have brought to healthcare new business-like logic which is in many areas contradictory to the previously dominant logic of medical professionalism, and demanding implementation of new governance and control practices. The extant literature suggested that there are three levels of hybridisation, in other words, three levels where the logics cohabitate: a sector, an organisation, and an individual. Building on the literature analysis, we proceeded to identify another, and in our view, the most important level of hybridisation in medical providers (e.g. hospitals) – the subunit level. We claim that to increase healthcare efficiency policymakers and managers should shift their focus deeper into healthcare providers, to subunits, where the medical services are produced and the institutional logics which determine values, beliefs and rules frame actors behaviour.

Introduction

Hybridity is not only an inevitable feature of non-profit sector (cf. Brandsen, van de Donk, & Putters, 2005) but it affects companies as well as public administration. Hybridity has been brought to public administration and third sector organisations in a large proportion by New Public Management (NPM) paradigm introducing business-like logic contrasting with their indigenous social or public administration practices. Companies, on the other hand, which for centuries complied with business logic begun to adopt Corporate Social Responsibility as integral part of their day-to-day activities and consequently acquire additional social logic building up their hybridity. These lead to the situation, that classical division into market, state, and civil society

organisations is no longer clear. Hybridisation also increased in healthcare sector significantly changing its demands for governance and control. Hybridisation has also brought to organisations new roles which are to some extent contradictory, such as a clinical and managerial role (von Knorring, de Rijk, & Alexanderson, 2010) which are linked to different identities (Skelcher & Smith, 2015).

There is a large body of knowledge concerning hybridity in a wide variety of sectors, such as culture (Glynn & Lounsbury, 2005), business (Greenwood, Díaz, Li, & Lorente, 2010), civic society and social entrepreneurship (Dacin, Dacin, & Tracey, 2011), higher education (Murray, 2010), professional services (Smets, Morris, & Greenwood, 2012) and healthcare (Scott, Ruef, Mendel, & Caronna, 2000; Reay & Hinings, 2005; 2009). However, there is a significant gap in the literature how hybridity emanates in different levels of a particular sector. In this chapter, we are going to, at least partially, address this gap theorising about hybridity on different levels in the healthcare field. Identification of levels of hybridity, in other words, levels at which the main norms, beliefs, and work practices are considerably changing while still being multiple and to some extent contradictory enables to properly design governance and control processes.

The main force hybridising healthcare sector is the increasingly dominant policy agenda aiming at containment of public spending on medical services. Governments of developed countries in order to maintain near-universal medical coverage for all their citizens begun to redesign healthcare systems. They have been implementing the mix of instruments, such as market-like competition, privatisation of providers and payers and bureaucratic control mechanisms into the sector changing power relations among main actors. Each of the tools is bringing elements of other models hybridizing the sector on one or many levels producing unique national healthcare systems. The aim of the process is the optimisation of service delivery on the key performance measures like equality of access, costs for the budget and for the patient as well as quality and safety.

There has been a well-established conviction in the literature that healthcare organizations in general and hospitals, in particular, are professional bureaucracies (Mintzberg, 1979; Ruston, 2006), however more recent studies suggests that application of new mixes of varied governance and control mechanisms and different patterns of medical practices are deepening the internal hybridisation of providers. For example, L. Lamothe and Y. Dufour claim that hospitals are no longer *"professional bureaucracies"* but are more loosely coupled organisations called by them *"diversified professional federations"* (2007, p. 68), what means that their internal structure might be more complex and loosely coupled. This complexity and internal atomisation of healthcare providers might be responsible for the important problem of care continuity and coordination even inside one hospital. Thus, in order to improve healthcare performance it is important to investigate how hybridisation emanates inside healthcare field, and particularly inside medical providers. Especially interesting are questions: how many levels of hybridisation exist across healthcare field? At which level governance and control mechanisms should be addressed to maximise healthcare performance? There-

fore, the aim of our study is to deepen the understanding how hybridisation emanates across healthcare sector. And particularly to identify levels on which multiple norms, values, believes and work practices change to such extent that they require different governance and control methods, as well as, to recognise which level is crucial for healthcare performance.

Hybridisation seems to be a crucial concept to explain the ongoing processes in the health care. The analysis could be built on the different levels. Macro perspective on hybridisation could be identified on the level of the society, the whole national health care system. On the mezzo perspective there is hybridity perceived in the health care unit (e.g. hospitals or department). Micro level is concentrated on individuals in an organization. The micro-hybridisation is connected to identity and actions of social actors (Sułkowska, 2016).

It should be highlighted, that the purpose of this exploratory study is to develop understanding from patterns of contemporary research rather than to test hypotheses. We contribute to the existing knowledge by synthesising the literature about hybridisation and connecting it to healthcare sector, especially by indicating particular levels on which hybridity emanates and affects actors behaviour. By building the research upon the work of others, we are going to help to better explain this complex interrelationships and arrange the elements so that readers could immediately see the relationships between them.

Institutional logics

An institutional logic is the fundamental theoretical construct for the research of organisational hybridity. It refers to a set of belief systems and associated practices and is the organizing principle that shapes actors behaviour (Scott et al., 2000; Lounsbury, 2002; Suddaby & Greenwood, 2005; Thornton & Ocasio, 2008; Reay & Hinings, 2009). Institutional logics can be defined as "*socially constructed, historical patterns of cultural symbols and material practices, assumptions, values and beliefs by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their daily activity*" (Thornton, Ocasio, & Lounsbury, 2012, p. 51).

C. Skelcher and S. R. Smith claims that *"logics give identity and meaning to field actors"* (2015, p. 437) but the contradictions essential to a multiplicity of logics offer the space within which actors can absorb, exploit, reinterpret and even manipulate these material practices, assumptions, values, beliefs and rules, thus transforming identities, organizations, or society (Thornton & Ocasio, 2008; Greenwood et al., 2010; Skelcher & Smith, 2015). Institutional logics having material, cultural and symbolic constituents can provide normative guidelines for social actors. For example, logic of medical professionalism can emphasize autonomy and the pursuit of quality without necessarily paying attention to efficiency and costs while business logic can accentuate efficiency, and also quality but with direct relation to cost containment and strategic position of the product or service. Unlike in logic of medical professionalism, business logic is linking

quality requirements with market segments, for example higher quality for luxury products for rich people than for other market segments.

Hybridity

Organizing principles, control modes and competition arenas in a sector transform in the response to larger social and political changes often induced by the competition within and between social groups. It is especially so, when after the political or social changes a new group of professionals or new organisations are encroaching into the sector and are challenging the old groups. Then, the whole sector can become a realm of battle for power and control over the labour process (cf. Hannan & Freeman, 1985). Also changes in rules of access to resources may significantly affect competition within a sector. In these circumstances, organisations trying to adapt to new environment acquire different organisational forms hybridising the sector. Hybridity then, allows them to present different sets of organizational characteristics needed to obtain social legitimacy and access to resources that give them the opportunity to survive and develop (Hannan & Freeman, 1985). In a changed sector only those organisations can survive which strictly adhere to certain well-established forms or pretended to comply with the expectations of the environment or political climate at least in its visible external actions (cf. Meyer & Rowan, 1977; Aldrich & Fiol, 1994). In other words, the sector is hybridising when, in pursuit of new opportunities or because of protection against the collapse, organizations deliberately or accidentally due to unforeseen changes acquire different organizational forms. The sector could be recognised as hybrid if within it operate organisations cultivating different mechanisms of coordination, for example: private outpatient clinics run by physicians coordinated according to community/clan mechanisms where trust is the main control device and public bureaucratic providers where the governing principle is the authority.

Hybridity in healthcare field

In the first half of the twentieth century, three separate models of healthcare systems emerged (Lewandowski, 2015). National Health Service also called the "Beveridge model" after the British social reformer who designed the system. In this model, medical services were provided and financed by the government from taxes. Multi-payer health care system based on social compulsory insurance (Bismarck model). Insurers and providers in this model did not belongs to the state but mostly were non-profits. While free market model, developed mostly in the US was similar to the Bismarck model, but insurance was voluntary for citizens and insurance companies were for-profit enterprises. Also many providers were for-profit entities. Thus, the first two systems were lead according to non-profit social aid logic and the third one was in consonance with the market (business) logic.

Over the past decades, however, the three systems have changed. The drive for hybridisation in the US system was its inefficiency in covering large groups of citizens: the

older ones and the poorest. The US system has not become compulsory and state owned but increasingly demands more and more federal and state governments' interventions bringing to it more and more social aid logic. The main examples are the established in 1965 programs financed from payroll taxes called Medicare that provide health insurance to Americans aged over 65 and Medicaid that insures families and individuals with limited resources. The hybridisation in the US system has been further deepen by the introduction of The Patient Protection and Affordable Care Act ("Obamacare") in 2014 significantly expanding the range of social aid delivered by the system. Contemporary change in 2017 in USA goes further into the hybridisation because the trend to introduce the universal coverage of health care (The Patient Protection and Affordable Care Act) has been reversed under administration of president Trump (Oberlander, 2017). In Europe where the universal coverage is the foundation of the systems, the main cause for hybridisation was the need of cost containment, reduction of waiting times for medical treatment, increase in the choice of providers and improvement of overall quality and efficiency. Governments and legislative bodies were responding to these claims frequently following NPM approach trying to arouse market-like competition in the healthcare field. They often used privatisation and commercialisation of both providers and payers (cf. Braithwaite, Travaglia, & Corbett, 2011; Basu et al. , 2012) as well as more market oriented ways of contracting medical services for their citizens (Saltman, Durán, & Dubois, 2011).

In consequence, the three systems are transforming in ways that blur the boundaries between the established typology and became strongly hybridised, since many different types of organisations perform similar tasks in the healthcare field, for example medical providers could be: public politically headed bureaucracies, corporatized public entities, public–private-partnerships, private enterprises as well as non-government organisations (cf. Braithwaite, Travaglia, & Corbett, 2011; Bode, 2013; García-Lacalle & Martín, 2013; Engström & Axelsson, 2010).

Hybridisation on organisational level

Changes in healthcare financing from budgetary to price related formulas such as Diagnosis-Related Groups (DRG) systems (in Poland Jednorodne Grupy Pacjentów) aiming at incentivising medical providers by monetary rewards and introducing market-like competition to healthcare field (e.g. buying medical services for citizens in tenders) influenced the allocation of health care resources introducing market (business-like) logic into medical organisations although in a highly indirect and decentralised manner (cf. Abernethy et al., 2006). Encroachment of business-like logic has redefined and extended the perception of healthcare from a social issue to an economic problem. Medical services are no more a medical concern exclusively belonging to clinicians but an economic issue within an interests of managers, financiers and accountants (Chua & Degeling, 1993). This focused the organisational discourse around efficiency and effectiveness of medical services delivery.

In the literature, an organisation is regarded as the main level of hybridisation and multiplicity of logics is considered as the main cause for it (cf. Skelcher & Smith, 2015; Denis, Ferlie, & Van Gestel, 2015; Reay & Hinings, 2009; 2005). An organisation may adapt many logics at the same time which may overlap each other that actors may encounter and exploit simultaneously multiple logics (Friedland & Alford, 1991). The extent to which each logic influences the organization's activities depends on the degree to which logic is central to organizational functioning and how well it is rooted in day-to-day work processes (Besharov & Smith, 2014). Medical providers and particularly hospitals are complex organisations which deliver varied services demanding completely different skills, facilities and work processes (e.g. orthopaedics vs. nuclear medicine). Therefore intuitional logics will act differently in diverse specialties/subunits modifying organisational roles played by employees.

Introduction of the new business-like logic on the wave of New Public Management principles has shifted responsibility for the functioning of healthcare organisations from medical professionals to managers giving them the authority based on their formal position in the organizational hierarchy (Abernethy & Chua, 1996; von Knorring et al., 2010). This has led to the situation that new managerial roles have been introduced to entities dominated by clinical professionals performing clinical roles. Before the introduction of NPM to healthcare medical organisations such as hospitals or departments/subunits in hospitals were managed by physicians, however, business-like logic significantly shifts the nature of managerial role. From clinical expertise as a base for leadership to the culture of efficiency and control contradicting the traditional identity of medical professionals.

Hybridisation on individual level: identity and identification

Identity is not a uniform construct, it is linked to performed social and professional roles, a career, and a network of social connections. The more important a role is in a person's life, the more central is the identity that is associated with that role, and the person will try harder to confirm that identity (Burke & Reitzes, 1991). A person can perform many roles, she or he can be a mother or a father, a wife or a husband, a physician, a manager, but each of the role is linked to different identities focusing on different features, however, each identity: individual, social and role-related, function in a similar way (Burke & Reitzes, 1991). The particular identity is activated according to the circumstances (Hall, 1971). Most people easily move from one identity to another and conflicts are perceived only when differences are significant, or the human being is forced to perform conflicting roles (Greene, 1978).

Medical services always were controlled by medical professionals, mainly by physicians, who have dominated decision making in hospitals for decades (Chua & Degeling, 1993), since these individuals had not only the required knowledge and experience, but moreover they had been socialized to act independently without formal administrative controls and in condition of uncertainty (Abernethy & Stoelwinder,

1995). However, philosophy of business-like logic introduced to medical providers by NPM is significantly divergent from the previously exercised logic of medical professionalism based on clan-like coordination modes using socialisation and trust as a control mechanisms. The implementation of additional logic transformed medical organizations into hybrids where managerial and professional roles started to interact. The main body of literature concerning managers and professionals relation treated these two roles as contradictory (cf. Noordegraaf, 2011), claiming that doctors being accountable mainly for quality and safety control through self-governance are opposing the managers trying to implement cost and quality control via bureaucratic mechanisms. Other researchers claim, however, that there is no 'bottom-up professional resistance' in opposition to a 'top-down managerial change' (Waring & Currie, 2009, p. 759) or managers are not only the single carriers of neo-liberal reform and organizational control versus professionals as the victims of organizational control and single guardians of professional standards and values (Noordegraaf, 2011). Within a health care organization these two roles are combined and re-combined throughout continuous encounters creating 'hybrid' control environment (Saltman et al., 2011) and hybrid professionals like medical managers (Noordegraaf, 2011). Yet, it is important to notice that the formal identity as a physician is more outstanding than other professional identities, since no matter in what organisation a person works or what other professional roles she or he is undertaken the individual is always a physician (Spyridonidis, Hendy, & Barlow, 2015), since the identity is developed not by a membership in a medical organisation but by occupational and professional socialization as a consequence of shared educational backgrounds, professional training, and knowledge (Evetts, 2003). M. Alvesson and H. Willmott suggests that: *"The construction of knowledge and skills are key resources for regulating identity in a corporate context as knowledge defines the knower: what one is capable of doing (or expected to be able to do) frames who one 'is'. Education and professional affiliation are powerful media of identity construction."* (Alvesson & Willmott, 2002, p. 630)

Hence, the identity as a physician might be more important to a person then the identity as a manager or as a member of the whole organisation (e.g. a hospital) and that the hybridisation process of the identities as a physician and as a manager might be more complex than simply merging certain beliefs or values, or managerial and clinical expertise. Additionally, people identify more strongly with lower-order identities than with higher-order identities, suggesting that members of the group tend to identify more with their primary group in which they work than with the entire organization (Richter et al., 2006; Riketta & Dick, 2005; Apker & Fox, 2002). In a large and complex medical providers such as hospitals, the working group consists most often of people from the same subunit/department.

Building upon the prior analysis, we identify many factors which suggests that hospitals are too complex to adapt institutional logics on organisational level, therefore, there might be at least another internal level of hybridity which significantly affects

governance and control mechanisms of healthcare field. In the next section, we are going to prove our conclusion by drawing arguments from the extant literature.

Hybridisation on the subunits level

For example, L. Lamothe and Y. Dufour claim that hospitals are no longer 'professional bureaucracies' but are more loosely coupled organisations called by them *"diversified professional federations"* (2007, p. 68). H. Mintzberg classifying medical providers, such as hospitals as *"professional bureaucracy"* drew attention to high decentralisation coordinated by standardisation of skills of professionals through their extensive outside training. This organisational form gives medical professionals, mostly physicians, an ability to *"... work relatively freely not only of the administrative hierarchy but also of their own colleagues."* (Mintzberg, 1980, p. 334). Writing in 1970s that *"... the complex work of the operating professionals cannot easily be formalized, or its outputs standardized by action planning and performance control systems."* (Mintzberg, 1980, p. 334), he was unable to predict that in 1980s governments would begin to implement New Public Management principles into healthcare field that has brought business-like logic comprising tighter administrative control and performance measurement.

We hypothesize that there are a few factors which acting simultaneously hybridise medical providers at the subunits level, among others: methods of payment for medical services and different work practices linked to different specialties. The first factor is driven by external forces in the form of special methods of contracting medical services by public or private payers, such as DRG systems which relay on payment for groups of cases (patients) focused around particular specialties. The implementation of DRG systems of payment has introduced two main phenomena. Firstly, divided a hospital into a series of production lines (subunits) selling different products (treatment of patients with specific diseases) for different prices. In these circumstances, each subunit is able to assess its "market" and profitability. Secondly, this gives managers ready-made tools for controlling subunits. Based on DRG systems, hospital managers are able to implement case-mix accounting plans assigning revenue and related costs directly to individual patients and thus to medical subunits (Covaleski, Dirsmith, & Michelman, 1993).

Although clinicians are highly autonomous, hospitals managers having case-mix tools and some power over distribution of resources are able to build an incentive schemes which are able to affects professionals' behavior. For example, in some hospitals managers implement specialist software which enable to use DRG tariffs to screen patients and put pressure on clinicians to admit only those patients who are "profitable" and also control physicians whether they apply optimal lengths of stay and proper medical procedures to patients in relation to their conditions (diagnostic codes) to maximize revenue from the payer (Covaleski et al., 1993; Lewandowski, 2015). In this context managers can organise a hospital as a conglomerate enterprise with some common function, such as administration, accounting and finances but they may separate

subunits as fairly autonomous entities with their own revenues and costs, transferring financial responsibility to subunit managers. Subunit managers being held accountable for budget of their departments must undertake managerial roles and begin to exercise pressure on medical professionals not only in order to cut costs but also to increase revenue. This shifts the rivalry between business-like logic and logic of medical professionalism to subunit level, since subunit managers, which are often physicians and their subordinate clinicians have to cope with conflicting demands of quality and costs. The best solution might be increased revenue from the payer than cost reduction, since additional resources can be also used for better treatment of patients, thus alleviating the identity conflict between professional and managerial roles. M. A. Covaleski and colleagues (1993, p. 75) claim that heads of medical departments by demonstrating profitability are able to use this as a means of political exchange gaining a greater portion of resources for their subunits from hospital administrators. Yet, we can conclude that both physicians and managers can be interested in gaining more resources from external payers leading to the increase of the negative phenomena of supply driven demand (Getzen, 1997).

The next factor of subunit hybridization are diversities in preforming clinical practice at the core operational level. Research conducted in major Canadian teaching hospital proved that there is significant variability in work practices on core operational level in a hospital depending on the specialty (Lamothe & Dufour, 2007). L. Lamothe and Y Dufou claim that '*The variability within the operating core of health care organizations stems from the uncertainty generated by the patients' health conditions and the related complexity of work arrangements*' (2007, p. 79). Similarly, J. Waring and G. Currie (2009) have revealed that there are significant disparities related to governance and control practices at subunits level. They show in their study conducted in a British NHS hospital that subunits react differently to the introduction of unified National Reporting and Learning Systems (NRLS) concerning patient safety. The hospital was able to establish common structure at the organizational level such as Risk Management Office and Risk Management Committee, however, at the subunits level the system was differently implemented in such a way that it has prevented the development of an integrated, unified risk management and reporting system of adverse events. J. Waring and G. Currie (2009, pp. 772–773) reveal three particular strategies (co-optation, adaptation and circumventing) with which medical doctors at the local (subunit) level responded to managerial governing and control practices.

Yet the exploration of the literature suggests that subunits might be the most crucial level of hybridisation, since subunits are the central part of the hospital, its operating core responsible for service delivery directly to patients. Therefore, subunits should be treated as an independent level at which institutional logics, professional roles and identities encounter and cohabitate. On this level, professionals not only exercise their main responsibility by designing day-to-day work practices, but also develop strategic goals, a vision of the future characteristic to their specialty, a sense of trajectory of where

their department is heading. The differences in department specific logics cause the mix of mechanism and tools that managers can use to effectively govern and control subunits and thus the whole hospital.

Discussion and conclusions

Society expectations concerning unrestraint access to high quality medical services force governments to introduce reforms leading to cost containment while keeping quality on a high level. The frequent solution used by governments to increase healthcare efficiency is the implementation of mechanisms which evoke competition between payers, as well as, among providers. Many governments additionally inspired institutional changes by introduction of private insurer/payer for medical services, commercialisation and privatisation of public providers, as well as, encouraging private capital to establish for-profit medical facilities (Saltman et al., 2011). As an effect the whole sector is shifting its character from being driven by social aid to being guided by business-like forces what leads to the hybridisation of the sector on many levels (see table 1).

Table 1. Characteristics of levels of hybridity

Level of hybridity	Hybridising factor	Source of direct pressure	Mechanisms of pressure	Implication
Field/Sector	Institutional forms	Society, Government	Competition between providers and sometimes between payers, institutional change	Marketization of healthcare, shift from social aid sector to business-like sector
Organisation	Institutional logics	Market, the way of contracting of medical services, owners: (local) government, shareholders	Institutional change, e.g. privatisation, introduction of managers	Formal power passes to managers, medical organisations as business-like enterprises, development of control and finance functions
Subunit/ Department	Work practices	Hospital's management, patients' health conditions and the related complexity of work arrangements	Methods of payment for medical services (e.g. DRG), contracting requirements, budgets, casemix accounting, incentive systems, professional knowledge, competition for resources	Increased supply driven demand, professional-managerial conflicts
Individual person	Actors identity	Organisational roles	Norms, values, professional knowledge	Identity conflicts, decrease efficiency of professional self-control mechanisms

Source: prepared by the authors.

As a response to sectoral changes, especially to introduction of NPM and market-like principles to the healthcare field, the owners of public or non-profit medical providers (entities which in the case of provider problems would bear the consequences) frequently install professional managers to the organisations as the agents of change (cf. Kuhlmann et al., 2013) and carriers of business-like logic. Implementation of business-like logic into public or community organisations, so far dominated by logic of medical professionalism, turned them into hybrids. In the literature, an organisation as a whole is regarded as the fundamental level of hybridity (cf. Skelcher & Smith, 2015; Denis, Ferlie, & Van Gestel, 2015; Reay & Hinings, 2009; 2005). We claim, however, that arguments mentioned in this chapter add up to one another to support the idea that the most important level of hybridisation of medical providers which determine the governing and control demands is the subunit level. There are numerous arguments supporting our claims. Firstly, institutional logic combined with unit specific work practices creates interpretive schemes and when they are regarded as legitimate by actors, they can consequently shape the orientation of actors towards particular conceptions of organizational design, practice, and tasks (cf. Skelcher & Smith, 2015). Thus societal norms and political agendas shape field level norms which in turn shape organisational forms and then individual behaviour with emanates most intensely on the core operational level – the subunit level. Secondly, physicians identity is stronger than managerial identity (Spyridonidis et al., 2015), therefore clinicians can undertake business-like behaviour (taking into account economic principles while treating patients) only under strong influence. Thirdly, since people identify more with subgroups than with a more general association like the hospital (Richter et al., 2006; Riketta & Dick, 2005; Apker & Fox, 2002) it is more likely that they will respond positively to the demands of their direct superior – subunit manager – than of the hospital manager. Fourthly, logics directly affect work practices (Besharov & Smith, 2014) which are different in different medical specialties (subunits) (Lamothe & Dufour, 2007), consequently logics cannot affect the whole organisations (e.g. hospital) where there are no unified medical work processes. Fifthly, the atomisation of medical providers and condensation around medical specialties/subunits is deepened by the methods of payments (DRG systems) and governing and control practices corresponding to them (e.g. case-mix accounting and subunit budgets) applied by managers.

The identification of the subunits as the main level of hybridisation contribute to the existing literature. Based on this research both regional and national policy makers, as well as managers, would be able to adjust governance and control practices and mechanisms making them more efficient. It is on the subunit level where the medical services are produced and "sold" and the institutional logics which determine values, beliefs and rules framing actors behaviour. At this level, clinicians, while treating patients, have to consider not only their professional rules but also managerial ones and thus alleviate clashes between different logics and identities to perform day-to-day tasks. Therefore, we claim that initiatives concerning cost control and quality assurance

should be directed not only at the whole organisation (cf. Lewandowski & Kowalski, 2008; Lewandowski, 2008; 2015) but at a subunit level taking into account its specificity. Concentration of the sector and organisational levels (Reay & Hinings, 2009) omitting subunit level might be the cause of the failure of previously applied governance and control practices which neither constrained the cost nor increased patients satisfaction (Martins & de la Maisonneuve, 2013).

The study is based on the literature not on the original research what can be regarded as a limitation, however, on the other hand, grounding our inference in varied streams of research is strengthening the potential of the study for generalisation. Future research could focus on the comparison of performance between organisations using governance and control tools more oriented to organisational level and subunit level.

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Socio-economic inequality and systems approach

A new significant contribution to the discussion on socio-economic inequality had been made by the publication of research done by Piketty and co-workers. They were accompanied by "shocking" reports and numerous empirical research papers illustrating dramatic discrepancies in distribution of income and wealth in the world. The ideas drawn from a broadly defined systems thinking, including the complex systems studies, have been already used in describing and explaining social inequality. It must be added that the Power Law and its akin models are the fundamental equations in complex systems studies. The aim of the paper is to show the areas of further research un a deepened sense of inequality which can be discovered by cautious applications of the ideas stemming systems thinking, and from complex systems studies in particular in the era of information overabundance.

Introduction

A new significant yet often controversial contribution to the discussion on socio-economic inequality had been made by the publication of research done by Piketty and co-workers [Piketty, 2014; Piketty, Saez, 2014]. Those studies were followed by others [Stiglitz, 2015; Milanovic, 2016]] and they were accompanied by "shocking" reports and numerous empirical research papers illustrating dramatic discrepancies in distribution of income and wealth in the world society [OECD, UNDP, UNU/WIDER, World Bank], including recent publication of Oxfam [2017] about the "Golden Eight" owners of the lion's part of the humanity's wealth.

After reading numerous works on various symptoms of socio-economic inequality one may have an impression of dominance of two approaches[1]. On the one hand the discussion embodies narrow empirical studies illustrating the situation, without a deeper explanation of causes. In the case of empirical research such a situation is fully justifi-

[1] Due to different interpretations of inequality and frequent uses of the term without any adjectives reflecting its character in the paper the term socio-economic inequality is treated as most universal term.

able. On the other, inequality is analyzed within a framework of broad ideological ad/or political considerations. It seems that there exists a kind of research gap, of course, not a vacuum, in which the middle-range theoretical discourse can be placed. It also seems that this gap can be at least partially filled with applications of systems thinking, and complex systems studies, in particular.

The ideas drawn from a broadly defined systems thinking, including the complex systems studies, have been already used in describing and explaining social inequality. It has been done both directly and indirectly [Barabási, 2003; Chatterjee *et al.*, 2015; Krauss, 2015]. It must be added that the Zipf's Law, or the Power Law are the fundamental equations in complex systems studies. Most of those works are good examples of applications of middle-range theories of sociopolitical inequality but obviously numerous issues have to be scrutinized.

It seems that the applications of modern systems thinking can be helpful in providing at least partial answers to the following questions:

1. Is socio-economic inequality unavoidable in the modern society?
2. Bearing in mind the overall rise in the standards of living in the modern world, is socio-economic inequality truly associated with social injustice? Perhaps it is just linked to meritocracy and its negative consequences, i.e. poverty is stemming from local crises or local improper governance?
3. Can socio-economic inequality lead to undermining of existing social order?

As to avoid too broad and in consequence, useless considerations, the following partial aims are proposed:

1. What are the universal, systemic characteristics of inequality in social systems stemming from inherent differentiation character of those systems (hierarchy, functional differentiation?
2. What are the consequences of a relative character of socio-economic inequality?
3. What are the weaknesses of measurement of socio-economic inequality?
4. What is the specificity of socio-economic inequality in the modern "Information Society" affected by information overabundance?

The following conjectures can be formulated as a result of applications of systems theory in studying inequality. First, due to a relative character of inequality in society, its character and impact upon functioning of social systems should be deeply revised. Second, the sense of inequality is changing, when more sophisticated methods of measurement are applied, especially concerning the measurement of value. Third, the meaning of inequality is obtaining a new sense in a society in which the basic material needs of population are fulfilled. Fourth, corresponding to the previous ones, the inequality is strongly determined by information overabundance in a modern complex society. These conjectures may seem disputable and even controversial. The aim of the paper is to show the areas of research on a deepened sense of inequality which can be discovered by cautious applications of the ideas stemming systems thinking, and from complex systems studies in particular.

Although inequality is a common phenomenon worldwide yet due to the aim of the paper, more attention is paid to the situation in the developed world where poverty is not such a significant issue and where the "information revolution" has a greater impact.

As an epistemological foundation I apply a kind of "moderate constructivism" with the ontological assumption of existence of the "being" (reality) and with the epistemological assumption that the "being" (reality) is approximately identified in an intersubjective discourse embodying narratives in which both qualitative (verbal) approach as well as mathematics are used. In the paper a non-linguistic approach is applied. The fundamental challenges and ideas from philosophy of language [Wittgenstein, 2002], hermeneutics [Matzavinos, 2016], linguistics [Lakoff, Johnson 1980/1995; Ortony, 1993] and constructivism [Glasersfeld, 1995; Searle, 1995) are borne in mind in all considerations.

Socio-economic inequality in 21st Century

In discussing inequalities in society, it is important to make two distinctions. First is the difference between the unequal distribution of desirable life outcomes (such as health, happiness, educational success, or material possessions) and the unequal distribution of opportunities (access to power and life chances that attention facilitate attainment of desirable outcomes). Second is the distinction between the unequal distribution of opportunities and outcomes among individuals and between groups [Carter, Reardon 2014: 3]. Since in the paper is focused solely upon individuals, only their problems are taken into account.

Two basic overlapping interpretations of inequality in society can be distinguished – social and economic. In a most general sense social inequality exists when resources and rights in a society are distributed unevenly, typically through norms of allocation, that engender specific patterns along lines of socially defined types of individuals. They are differentiated according power, religion, kinship, prestige, race, ethnicity, gender, age, and class. The social rights include labor market, the source of income, health care, and freedom of speech, education, political representation, and participation. Socio-economic inequality is held responsible for conflict, war, crisis, oppression, criminal activity, political unrest and instability, and indirectly affects economic growth.

Viewed as a sub-class of social inequality, economic inequality is depicted as 'the fundamental disparity that permits one individual certain material choices, while denying another individual those very same choices' [McKay, 2002: 1]. In a more specific way, economic inequality can be defined as the difference in various measures of economic well-being among individuals, in a group, among groups in a population, or among countries. It embodies three areas: wealth, income and consumption. The issue of economic inequality is relevant to notions of equity, equality of outcome, and equality of opportunity [Economist, 2014]]. It can be analyzed in spatio-temporal framework, i.e. territory, various elements of social systems and across the time scale. All combinations of the components of the above framework are possible.

According to contemporary understanding inequality is not necessarily associated with allocation of broadly defined resources. According to Amartya Sen, equalizing income should not be the goal, because not all people convert income into well-being and freedom in the same way. What's more, this relationship seems highly dependent on "contingent circumstances, both personal and social" [Sen, 1999: 70] that include the individual's age, gender, family background and disability. It also depends on climatic conditions, societal conditions (health care, education systems, prevalence of crime, community relationships), customs and convention, among other factors. Hence, what should be equalized is not means of living, but the actual opportunities of living that give people the freedom to pursue a life of their own choosing [UN Development Strategy and Policy Analysis Unit, 2015].

Origins of the idea of complex systems

Complexity is undoubtedly one of most popular notions applied as a reference term in the discussions in philosophy, sociology and in management theory and practice. Lloyd [2001] identified 45 interpretations of this term. Studies of complexity are rooted in cybernetics and systems thinking[2]. The first attempts to define and study complex entities go back to the works of Weaver [1948] (disorganized complexity and organized complexity), Simon [1962] – The Architecture of Complexity and Ashby [1963] – the Law of Requisite Variety. A very convincing picture of intricacy of the field of complexity science can be also found in the scheme proposed by Castelani [2014]. In other writings numerous definitions of complexity have been formulated and scrutinized – Prigogine and Stengers [1984], Waldrop [1992], Gell-Mann [1995], Kauffman [1993, 1995], Holland [1995], Bak [1996], Bar-Yam [1997], Biggiero [2001], Prigogine [2003], Andriani and McKelvey [2009], Mesjasz [2010].

Unequivocal distinction of complex systems from the "classical" systems is not possible. In the works by Wiener [1948/1961], Ashby [1963], defining "first order cybernetics" and 'hard' systems thinking Bertalanffy [1968] – without considering the role of observer, complexity was treated as one of important systemic features. In those works the first systemic/cybernetic characteristics of systems were enumerated: system, element, relation, subsystem, environment, input, output, feedback, black box, equilibrium, stability, synergy, turbulence.

In a preliminary approach complexity of systems derives from the number of elements and of their interactions. Furthermore, it can be also characterized by multitude of such traits as adaptability, adaptation, attractor, *autopoiesis*, chaos, bifurcations, butterfly effect, closed system, coevolution, complex adaptive systems, dynamical systems, edge of chaos, emerging properties, far-from-equilibrium states, fitness landscape, fractals, nonlinearity, open system, path dependence, power law, reflexivity, scale-free

[2] Relations between those two areas of knowledge require further elucidation. Due to variety of interpretations of their relations in this paper systems thinking is regarded as most general category.

networks, self-organization, self-organized criticality, self-reflexivity, synergy, synergetics, turbulence.

Two important issues of complex systems studies demand further clarification. Firstly, in mathematical models applied in complexity studies, intricate behavior results from simple patters. It means that in order to understand complex dynamics identification of simple rules could be sufficient, e.g. the power law reflected also in the Pareto Law [Andriani, McKelvey, 2009]. Secondly, complex systems exhibit non-linear behavior that is referred to as positive feedback where internal or external changes to a system produce amplifying effects. Non-linear systems can generate a specific temporal behavior which is called chaos. Chaotic behavior can be observed in time series as data points that appear random, and devoid of any pattern but show a deeper, underlying effect. During unstable periods, such as chaos, non-linear systems are susceptible to shocks (sometimes very small). This phenomenon, called 'sensitivity to initial conditions' and popularized as the Lorenz's 'butterfly effect', exemplifies the cases, where a small change may generate a disproportionate change [Gleick, 1997].

Ideas originated in systems thinking and complexity studies are used in social sciences as models, analogies and metaphors. According to this distinction, the term 'model' is narrowed only for mathematical structures. Mathematical models in complexity studies can be applied in three areas: computing-based experimental mathematics, high precision measurement made across various disciplines and confirming 'universality' of complexity properties and rigorous mathematical studies embodying new analytical models, theorems and results.

Models, analogies and metaphors are instruments of theories in social sciences and are applied for description, explanation of causal relations, prediction, anticipation, normative approach, prescription, retrospection, retrodiction, control and regulation, or in a modern approach, influence upon the system. Metaphors, even the "dead" ones may have a significant heuristic value as stimulating factors for innovativeness. It is also worthwhile to add that models, analogies and metaphors deriving from systems thinking/complexity studies are gaining a special significance in the social sciences. They are treated as 'scientific' and obtain supplementary political influence resulting from 'sound' normative (precisely prescriptive), legitimacy in any debate on security theory and policy.

Contrary to physics, chemistry and biology, where only mathematical models are applied in prediction, in social sciences it is also the qualitative considerations that are used in prediction. Therefore the role of analogies and metaphors taken from complexity studies must be taken into account with a sufficient care [Lakoff, Johnson, 1980/1995; Ortony, 1993].

"Hard" and "soft" complexity of social systems

The ideas depicted above can be called 'hard' complexity research as an analogy with the 'hard' systems thinking, and to some extent, with the 'first order cybernetics' (objects of research independent from observer). This research includes mathematical modeling of

systems with well-defined, operationable (measurable) and computable characteristics in physics, chemistry, natural sciences and in society. The 'soft' complexity research, also coined per analogy with 'soft' systems thinking [Checkland, 2000] and 'second order cybernetics' [von Foerster, 1982], includes the ideas of complexity elaborated in other areas – cybernetics and systems thinking, social sciences and in psychology[3]. Contrary to "hard" complexity, they are not computable. Those ideas can be divided into two groups. The first group includes those, which are based upon analogies and metaphors drawn from 'hard' complexity studies. They are dominating in social sciences theory and practice being very often abused and misused [Gleick, 1987; Castelani, 2014]. The second group includes indigenous qualitative concepts of complexity like, for example, those elaborated by Luhmann [1995] – a complete indigenous definition; Cilliers [1998] – partly indigenous idea and partly based upon analogies and metaphors[4].

Subjectivity is the first aspect of complexity in the 'soft' approach. Following this line of reasoning, from the point of view of the second-order cybernetics, or in a broader approach, constructivism [Glasersfeld, 1995; Biggiero, 2001], complexity is not an intrinsic property of an object but depends on the observer – 'complexity, like beauty is in the eyes of the beholder'.

Taking an epistemological stance which can be called a moderate constructivism, it should be emphasized that definitions of all categories have not any "objective" character, independent from the observer. It is a basic epistemological assumption in modern social sciences. Therefore in systems thinking, including both "hard" and "soft" complexity intersubjective interpretations of concepts are the point of departure of investigations.

Complexity and systemic inequality in society: Assumptions of selection of examples

Popularity of complexity studies in social sciences is deriving not only from "catchy" utterances such as chaos and complexity but first and foremost from applications of mathematical models in modelling social phenomena wherever it is possible to gather more or less trustworthy data. In that respect complex systems models must fulfill the same demands as other types of models. Studying economic inequality is somehow easier since most of the indicators are measurable. In this case the "hard" complexity models are applicable. However, in modern economy the indicators measurable with "hard" numbers, i.e. measurable with the ratio scale are not always available. The problems be-

[3] Similar considerations concerning "soft" and "hard" complexity by Lissack [1999] are used as an inspiration.

[4] In social theory, in psychology, and in management, e.g. Morgan [1986], distinctions between analogies and metaphors are omitted. In most cases, it is sufficient to apply the term metaphor, disclosing when needed, their differences with analogies and other semantic constructs, e.g. similes, as well as different types of metaphors – dead, alive, mixed [Lakoff. & Johnson, 1980/1995; Ortony, 1993].

gin at the stage of data collection and interpretation. It is especially visible in the cases when proportions in wealth distribution are presented. It is often shown by the critics that very sensational reports showing extreme inequality are based upon not too carefully collected and interpreted data. In this case the "soft" complexity approach can be applied. Of course, it does not mean that the disproportions do not exist. Sometimes the scale of disproportion is just exaggerated.

Three examples presented in subsequent sub-chapters illustrate applications of complex systems in studying various aspects of socio-economic inequality.

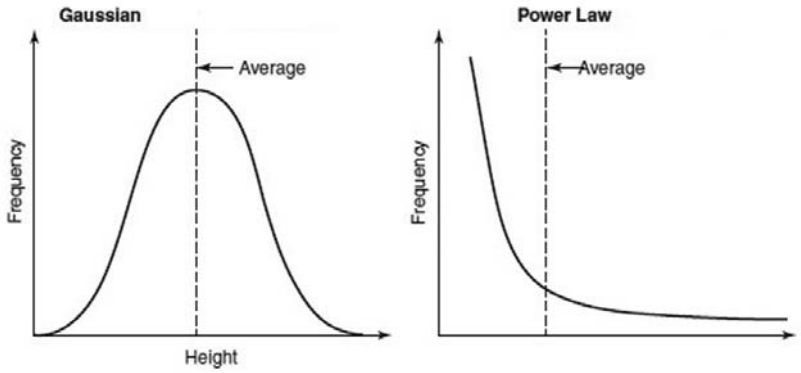
1. Applications of the Power Law (Pareto distribution/Lorenz curve/Zipf's Law – a special case) in modelling socio-economic inequality, including also the scale-free networks.
2. New sense of socio-economic inequality in the era of dominance of information and intangible assets.

Complex systems models and socio-economic inequality

The methods of modelling of socio-economic inequality are widely described in literature. Qualitative studies of socio-economic inequality along with classical statistical models are not sufficient from a point of view scientific rigor. Although empirical observations concerning wealth allocation were put by Pareto in a more universal framework of 80-20 rule already in early 20th Century. That is why attempts were made to elaborate mathematical models of socio-economic inequality, which may fulfill the demands of the neopositivist scientific rigor of the analysis. The rising interest in socio-economic inequality in the 1970s and in the 1980s coincided with development of complexity studies in which the Power Law is one of the main ideas.

Cumulative distributions with a power-law form are sometimes said to follow Zipf's law or a Pareto distribution, after two early researchers who championed their studies. Since power-law cumulative distributions imply a power law form for p(x), "Zipf's law" and "Pareto distribution" are effectively synonymous with "power-law distribution". (Zipf's law and the Pareto distribution differ from one another in the way the cumulative distribution is plotted—Zipf made his plots with x on the horizontal axis and P(x) on the vertical one; Pareto did it the other way around. This causes much confusion in the literature, but the data depicted in the plots are of course identical [Newman, 2006: 4]. A general interpretation of the Power Law is presented in Figure 1.

Figure. 1. Comparison of the Gauss distribution with the Power Law



Source: own research

Power Law has multiple applications in modelling various phenomena in physics, biology, society, linguistics, urban studies, etc. It has become both a fundamental model of socio-economic inequality as well as a source of metaphors and analogies. The most significant aspect of the Power Law is that to some extent it reflects the situation in society, in which the groups of privileged receive majority of resources. Of course, this picture is simplified but it reflects a certain rule existing in social systems. A distribution based on a power law says extreme events (or richest people, or biggest websites) account for most of the impact in that particular world, and everything falls off quickly afterwards.

A striking feature of the income distribution predicted by Pareto's law is its extremely skewed nature, with the frequency distribution declining monotonically, beginning at a minimum income. This was referred to by Pareto as the "social pyramid", and brings us to the question of the connection between the observed hierarchical structure of most societies and their income distribution. From the start, Pareto emphasized the heavily asymmetric character of his distribution and hence its fundamental difference from a normal curve [Persky, 1992].

A more significant comment must be added. Empirical results of research done in physics, chemistry, natural sciences and in social studies show an interesting regularity which can be labelled as a shift from the Gaussian world to the Power Law world. This phenomenon can be initially described as a situation in which it is not an average which matters but the rare and the unpredictable, which is at the same time very influential upon other elements of the system under study.

From the multitude of examples of applications of the Power Law and its akin methods (Zipf's Law, Pareto distribution, Lorenz curve) a rank of examples are presented below as to show how the Power Law can be applied in studying inequality in contemporary societies.

First of all it must be underlined that the Power Law distribution is not ubiquitous in any relations of socio-economic inequality. Empirical studies found a power-law behavior in the distribution of income in Australia, Germany, India, Italy, Japan, the UK, and the USA. Another group of studies discovered a Power Law structure of the upper tail of modern wealth distributions in China, France, India, Sweden, the UK, and the USA [Brzeziński, 2013: 2].

Applications of the Power Law distribution in the inequality study has become an important instrument of research of econophysics. In addition to the use of the above models wealth inequality are applied: chemical kinetics motivated Lotka-Volterra models, polymer physics inspired models and most importantly, models inspired by kinetic theory of gases [Chatterjee *et al.*, 2015]. Those applications have some merits but they may not be treated as a more "scientific" proof of the theses concerning inequality of wealth distribution.

One of most influential ideas of complex research applied also in the studies of socio-economic inequality are the scale-free networks elaborated by Barabási and Albert [Barabási, Albert, 1999; Barabási, 2003]. After finding that various networks, including some social and biological networks, had heavy-tailed degree distributions, Barabási and collaborators coined the term 'scale-free network' to describe the class of networks that exhibit a power-law degree distribution, which they presumed to describe all real-world networks of interest. They have been extensively applied in studying the topology of internet, social networks and in all cases where relations between actors may have a network-like character. One of most important characteristics of scale-free networks is the "preferential attachment". It means that those objects of the network are gaining more links since they are gaining more links. In reference to socio-economic inequality it may mean that a kind of "*eigendynamik*" of inequality is stemming from the fact that those who are more privileged more frequently enter into the relations among themselves.

This phenomenon was commented by authors studying the validity of network models in studying socio-economic inequality. Buchanan [2002] calls the random networks "egalitarian" and the scale-free networks "aristocratic" (2002: 119). Here appears the "rich get richer" phenomenon that is supposed to be valid for all networks in nature including the economy and the larger society [Barabasi 2003: 79–92; Buchanan 2002: 106–120, 192–195]. Positions of actors in scale-free networks are not equal and hubs (most often selected nodes) are the "spiders in the net" [van Dijk, 2005: 150, 151].

Before development of the free-scale networks, Castels [1998] anticipated the growth of inequality in the network society. According to him, networks are characterized by a "space of flows" that overwhelms and pervades the traditional "space of places". Networks of capital, labor, information and markets, linked up through technology, valuable functions, people and localities around the world, while switching off from their networks those populations and territories deprived of values and interest for the dynamics of modern capitalism [Castels, 1998: 337].

The scale-free networks have also another important attribute contributing to their high importance in the analysis of socio-economic inequality in modern information society. Those properties were partly discussed by van Dijk [2005. In most cases of inequality with the Power Law models, the data reflect physical units. It means that the "hard" complexity, neopositivist approach is applied. In the case of networks more attention should be given to a different character of complexity, which has a more constructivist character of intersubjectively created meanings. It means that such a network is exposed to the impact of the Information Society but it is also exposed to the impact of information. First and foremost it can be observed that network relationships in society are of pure constructivist character. There are two ways of defining networks. In the first one an observer identifies relations between behavior of various elements – individuals, groups and put them into the network. In this case, the network has at least a partly tangible foundation although its intersubjective character is also visible. The second type of network is purely intersubjective.

Inequality as a systemic property in Information Society

The more or less precisely defined general ideas, such as Information Society, Knowledge-Based Economy, etc. are described with characteristics reflecting excessive amount of information and difficulties of interpretations and understanding arising from that phenomenon. Several terms are applied: information explosion, information abundance, information overload, information glut. Those characteristics are operationalized what allows to develop a multitude of quantitative characteristics showing the scale of the flood of facts and figures. Qualitative interpretations of those characteristics address to intellects and to emotions.

Similarly as for other social phenomena, there are not any commonly accepted limited set of definitions of the notions used in the discourse on information overabundance. However, two groups of consequences of superfluous amount of information produced and available in the world can be distinguished when sources and recipients are taken into account. The first, sources-related groups includes the phenomena occurring in society and the second, recipients-oriented, embodies consequences for individuals and social systems stemming from superfluous amount of information. In the case of management, it could be the recipients – individuals, managers at all levels and rank and file employees, and organizations.

Bearing in mind the above assumption, the following typology of ideas is proposed. The phenomenon of overwhelming amount of information available in the moderns society and its impact upon individual and collective recipients can be described as information overabundance. The phenomenon of a large amount of information coming from external sources to the recipient (individual, institution) can be described as information explosion and by related notions. It is also proposed that the effects of this overflow for cognition and behavior of recipient (individual and collective) should be called information overload and related notions. Such a typology does not include any

overlapping ideas, since in most cases the authors of definitions clearly expose either the links with external sources or relations with the recipient.

Leaving apart detailed discussions about information overabundance it must be emphasized that its fundamental important consequence is the assignment of meaning to information. This is the crucial issue in a better understanding of modern society and its complexity. Meaning is assigned to information, which in turn is overwhelming quantitatively and qualitatively. It has to be borne in mid in any research on contemporary society. In the case of socio-economic inequality, the following factors have to be taken into account:

1. Information as a resource causing inequality (whatever the definition of information can be).
2. Information and meaning as crucial factors in the modern society in developed countries having fulfilled their basic needs.
3. The role of information and meaning in communicating inequality and its consequences, including actors affected, actors privileged, observers and analysts.
4. The role of creation of meanings under the condition of information overabundance in the process of solving/dissolving/persuading/imposing solutions to the consequences of socio-economic inequality.

Having a sufficient conceptual background concerning socio-economic inequality affecting individual actors, as well as an insight into the meaning of complexity and information overabundance, it is possible to present the core idea of the paper expressed in two metaphors exposed in the title. The following issues will have to be explained: the sense of inequality in the societies affected by information overload and specific characteristics of inequality in modern society. They will be supplemented with case studies illustrating specific characteristics of inequality in complex society with information overabundance.

According to contemporary social theory, social systems are social constructions emerging in the process of intersubjective creation of meaning (Glasersfeld, 1995; Searle, 1995). This interpretation is the cause for treating social systems as "complexity of complexities". In practical terms it means that when studying behavior of social systems at various scales it is necessary to capture all the factors determining creation of the meaning of the system and of its attributes – social, economic, political, cultural and cognitive.

In the societies at the lower level of development, inequality is associated with insufficient amount of physical resources, food, fuel, shelter, etc. Individuals assign the meaning of attributes of social systems and of their complexity in a way which is closer to "hard" mechanistic interpretations. Rationality of behavior is in some sense determined by quality of life measured by basic needs and in the ultimate resort, the lack of resources can lead to death, illness, etc. This type of society can be labelled with the famous saying by Hamlet: "to-be-or-not-to-be" society. It's a mechanistic social system, with binary distinctions, in which rationality is determined by adaptation aiming

at survival of the individuals, of course, with all cognitive limitations of that rationality. Even most advanced constructivist interpretations are backed with measurable characteristics, etc. Although development of social constructs is limited by the barriers of intersubjective development of meanings, yet the potential number of those meanings is limited and they are somehow "anchored" by tangible constraints existing in everyday life. In consequence, there still exists the need and possibility to achieve equilibrium (equilibria) and potentially stability of those equilibria, both in physical world, and in the world of meanings. This type of systemic inequality can be observed in poorer and/or developing countries, although in a modern time inequality and poverty in such countries result from inefficient allocation, crises, wars, improper governance and not from overall physical shortage of resources.

A different picture of inequality exists in developed countries, say members of the OECD of which the USA is the best example. It may be assumed that the below interpretation concerns not only the "rich" countries but a large proportion of population in middle-level income countries. In this case modern system thinking and complexity studies are especially useful since they allow to formulate some hypotheses, or perhaps conjectures, useful in theoretical studies and in policy making. Additional significance stems from the fact that in many instances the discourse on inequality in rich countries conclude with a potential threats of social unrest, rebellions, etc.

In a society in which the basic needs are fulfilled, the discourse about inequality moves into the sphere of information and communication, or in other words, in a symbolic sphere. Perception, meaning and discourse on inequality is somehow "decoupled" from the material, tangible base. For a majority of people protesting against the rich owners of a major part of the wealth, no material threats exist, at least at present, and it is not possible for them to predict what could be the consequences of the disparity. The same concerns the rich, who are also unable to make predictions. It may be even stated that it is not possible to predict the consequences of disparities. It is worthwhile to mention that the studies, reports and analyses of inequality usually end up with general warnings about unrest and even not with the scenarios.

It may be also concluded that it is partly a media phenomenon, as long as it does not affect the basic needs. It's the picture of the Information Society. A new factor in this picture is the information overload. The intersubjective discourse in which the meanings are assigned is becoming even more intricate and confusing. Having the material base guaranteed, the individuals at the lowest and at the middle levels of social hierarchy feel safe and more confused by the multitude of potential meanings which could be assigned to the actual situation. The overwhelming amount of information and the need to develop meanings out of that "ocean of potential meanings" put in doubt any attempts to search for equilibrium (equilibria) and stability in a traditional sense. The individuals, no matter at any level of societal hierarchy are overwhelmed by the necessity to develop meanings, both individually and at the level and in the process of intersubjective creation of meanings. In such a situation applications of the concept of Baudrillard's (1994) *simulacra* seem to be relevant.

From the collection of factors determining socio-political inequality, the following ones have been selected for a deepened analysis in reference to information society affected with information overabundance: measurement of inequality, socio-political aspects of inequality and possibility of influencing the phenomenon of socio-economic inequality.

In the "society of the fed", the problems of inequality are transferred to the symbolic sphere where the *simulacra* play a decisive role. In such case the Maslow's higher level needs determine reasoning and behavior of individuals. When studying sociopolitical mechanisms of such another question is arising: is an ancient metaphor "*panem et circences*" adequate to moderns circumstances. Before responding to this question a description of the sense of political processes are depicted. Since the inequality and subsequently, individual motivations are predominantly in the symbolic sphere, thus a rank of questions are arising. The first concerns incomprehensibility. Overabundance of information and meanings causes the challenges of comprehensibility. Social reality is becoming more and more incomprehensible both for those who are at higher echelons of societal hierarchy and those who are at the lower echelons. A provocative question can be asked how scholarly community is affected by this overload of information and meanings.

This qualitative narrative may be supported by modelling of social processes with complex adaptive systems in which the agents may have more developed cognitive capabilities as to imitate the real members of society. Of course, a good knowledge of complex systems modelling does not allow to draw too far reaching conclusions but at the same time results of that kind of modelling can contribute to a better understanding of socio-political processes in the world.

Conclusions

The above survey of theories and empirical evidence about socio-economic inequality reflecting the complexity of the issue and appealing for new theoretical explanations based upon complexity studies allows for drawing a rank of conclusions referring to all complex societies but predominantly to the rich developed societies.

1. Although hierarchical structure of society is self-evident the ideas drawn from modern science, especially the complex systems studies, provide additional evidence about functioning of such structures. In resulzt, theoretical models and empirical evidence allow for identification and a deeper understanding of mechanisms leading to various types of inequality in social systems. The explanations are not sufficiently specific and unequivocal but they are not too general, obvious and intuitive.
2. Hierarchical structure of societies constitutes a natural vehicle for differentiation in access to the resources, both physical and intangible. It also concerns opportunities. It is not an ethical or ideological problem but it results from "*eigendynamik*" of complex social systems. Ideological and ethical considerations constitute a part of the modern societies dominated by intangible social constructs developed in an intersubjective process of negotiating of meanings.

3. In rich developed Information Society affected by information overabundance, in which basic needs are fulfilled, the phenomena associated with socio-economic inequality are mainly of intangible, symbolic character (*simulacra?*). As long as physical resources are in sufficient supply such a situation seems stable.
4. Contemporary concepts of complex systems studies based upon advanced interdisciplinary studies, linking, for example, good knowledge of complex adaptive systems, high competences in cognitive science, plus familiarity with advanced qualitative ideas of systems theory, could to make the studies of socio-economic inequality more useful from the point of view theory and policy making. It should be added, that any expectations for the "big solutions" spelled out in systems thinking movement are naive and unproductive.

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Flexible sales manager in international business – an attempt to assess the extent of executed tasks

The primary objective of this paper, which is of fragmentary nature and does not constitute full verification of the concept of formulating the competence model of a sales manager in international business, is an attempt to answer the following question: what activities do the sales managers of the Polish agricultural sector companies that serve foreign output markets perform and how often do they do so? The achievement of the main target required the implementation of intermediate objectives. On the theoretical plane, using the method of reconstruction and interpretation of subject literature, the tasks referring to many areas that are executed by the sales managers of geographically diversified companies were diagnosed.
On the design plane, it was crucial to construct a list of the tasks executed by the sales managers that remains in a close relationship with the studied sector; reconstruction and interpretation of the subject literature was supported by a discussion among deliberately chosen experts. The empirical part was the authors' intention to determine the extent to which the indicated tasks are executed by the studied managers – representatives of the manufacturing companies that serve the foreign agricultural machinery sector.

Introduction

The feature of real economic processes taking place in the modern global economy is intensification of economic co-operation between different regions, countries, integration groupings in the form of internationalisation of the company at the macroeconomic level, and, in its more advanced form – the globalization of a company [Gorynia,

Mroczek, 2013, p. 201][1]. Liberalisation of the movement of goods and services, as well as factors of production on an international scale, leads to a systematic increase of importance in the companies' behaviour of different forms of international expansion[2]. In recent years, more and more cases of international expansion could be seen, also in relation to the Polish companies [Belz, 2015, p. 31]. The rapid development of various forms of international companies and more and more sophisticated ways of running an international business activity by them contributes to the tightening of international competition, which becomes global [Haffer, 2011, p. 397].

The economic internationalisation imposes high demands both on theoreticians and management practitioners [Nogalski, Szpitter, Jabłoński, 2016, p. 75][3]. It forces the entrepreneurs to seek flexible solutions in the field of organisational structures, manufacture and services provision, and in relation to the managers operating on the foreign output markets. The dynamically changing market environment requires the contemporary managers to have competences that will allow for appropriately early identification of adaptation or adjustment changes necessary to be implemented in a company. The currently managed companies need managers, who understand their role that they play in a company subordinated to them much more widely, especially that the greater complexity and global nature of the market require an organisation to be absolutely ready to implement and control the client-oriented processes.

In the context of the above, it is stressed that the modern manager faces multiple challenges of activity conditions variation. The modern manager is on the threshold of achieving unimaginable number of important, difficult, complex, unique and unusual tasks. One way to execute these tasks is to identify them correctly. The managers aware of their role, focused on the company expansion and its adaptation to the changing environment are sought.

The matter of self-determination by the managers and the answer to the question on the kind of competences to be acquired in order to meet the modern business's requirements are important. Nowadays, no one needs to be convinced that flexibility is one of the most important competences.

The interest in the flexibility in this development remains in close connection with the tasks executed by the sales manager serving the foreign output markets. Learning

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[1] The manifestation of active international co-operation is also the foreign conference for Polish professors of organisation and management sciences organised annually by the team of Professor J. Teczke.

[2] In relation to the place of this year's conference, it must be pointed out that for the Polish manufacturers of the agricultural machinery sector, the natural direction of development is the market expansion into Hungary. The Hungarian market is particularly attractive due to cultural similarities, huge tradition of mutual co-operation, geographical proximity and better operating infrastructure.

[3] The Polish companies, which only start to conquer the Hungarian market, are recommended to be well prepared. In order to make the market expansion into Hungary bring the expected benefits, it is suggested to analyse the sector, to prepare an attractive offer and to make contact with potential contract partners and clients.

about their full range is the basis and starting point for various research. Without exact diagnosis of the executed tasks, it is not possible to improve their execution, to adjust mutually people and workplaces and to optimise the sales function's range. The task analysis is one of the basic instruments for improving the organisation's activities, including the area of sales management on international markets.

Therefore, it seems that it is indeed an open and current research topic. The undertaken issue fits into the discussion trend on the future of competence management. The authors attempt to answer their questions by conducting research in relation to sales managers serving the foreign output markets. The development refers to the companies associated with manufacturing parts, sub-assemblies and finished agricultural machinery; they are objects of the research conducted currently by the authors.

The primary objective of this work, which is of a fragmentary nature and has not been full verification of the concept formulating the competence model of a sales manager in international business, is an attempt to answer the following question: what activities do the sales managers of the Polish agricultural sector companies that serve foreign output markets execute and how often do they do so? The achievement of the main objective required the implementation of intermediate objectives. On the theoretical plane, using the method of reconstruction and interpretation of subject literature, tasks referring to many areas that are executed by the sales managers of geographically diversified companies were diagnosed.

On the design plane, it was key to construct a list of tasks executed by the sales managers that remains in close relationship with the studied sector; reconstruction and interpretation of the subject literature was supported by a discussion among the deliberately chosen experts. The empirical part was the authors' intention to determine the extent to which the indicated tasks are executed by the studied managers – representatives of the manufacturing companies that serve the foreign agricultural machinery sector. In accordance with the intention of the authors, the paper is to show a broader perspective of defining and executing the tasks in the context of a flexible organisation. The presented research results have given the direction of the authors' further works, which will be presented in separate publications soon.

Flexibility as a modern manager's domain – from theory to practice of management

Among many expressions concerning the manager, those that emphasise his/her responsibility for directing the activities leading to the achievement of the company's objectives and those that accentuate functions, which this person fulfils in the company, seem to be the most relevant. That is why the managers are often referred to as directors, leaders, organisers, or planners. Because each manager, independently of the company, in which he/she operates, meets a relatively wide range of roles in order to achieve the outlined goals. He/she is going to take advantage of market opportunities and to ensure the company success, uniting employees and resources around these objectives.

The manager, in order to perform a specific task, fulfils a number of functions. He/she plans the use of resources, creates a structure of action and imposes tasks, motivates subordinates to execute the task and controls the status of its execution. By managing teams of people – depending on levels of management, size of a team, action conditions and own predispositions – he/she conducts in a manner that corresponds to one or more personnel management concepts; based on technological, philosophical, bureaucratic, interpersonal relations, motivational, integration or rational behaviour considerations [cf.: Kurnal, 2001, pp. 8-34]. The result of the manager's activity should be: executing the task, satisfying the subordinates' needs, including their professional development, and strengthening the organisational culture favouring the efficient task execution.

According to P. F. Drucker [Penc, 1998, p. 126], the manager performs many tasks: sets goals, determines what they should be, decides what to do in order to achieve them. He/she gives efficiency to the objectives, provides information on them to people, on the efficiency of whom their execution depends. He/she organises work and the structure. He/she analyses necessary actions, decisions and relationships. He/she classifies the work, divides it into managed actions, and then divides these actions on tasks related to given positions. He/she groups these organisational units and tasks in the organisational structure. He/she chooses the people to manage these units and to the tasks to be executed. He/she motivates and informs the people responsible for the tasks; he/she creates a team. He/she does so by relationships with people, whom he/she manages with stimuli and awards for successful work and also with his/her own promotion policy and the system of constant, mutual communication with the subordinates. T. Mendel [2006, p. 15] notes that the tasks and services, which the managers execute, are specific and different from those dealt with by the other members of the organisation.

As it results from the abbreviated issues, the managers who want to manage the company well must meet many requirements. They are required to take on many roles[4]. According to the development's authors, the desire to shape a single, universal classification of the manager's roles is incorrect because the same expectations towards every manager may be contrary to the needs of a particular organisation and its strategic objectives. In order to be able to manage efficiently and effectively, the managers must have appropriate competences allowing to execute the tasks and adapt to a specific situation.

In modern economics and management sciences, the thesis of a human's key role and competencies of managers in shaping the success of the organisation is formulated. This issue is particularly relevant especially in terms of the development of knowledge-

[4] In the traditional management theory, a lot of information on the director's functions and roles can be found. The starting point was the concept of H. Fayola concerning the division a director's activity into the following functions: predicting, organising, commanding, coordinating, and control. In modern perspective, they are referred to as: planning, organising, motivation, and control. More [Listwan, 1995; Stoner, Wankel, 1996; Koźmiński, Piotrowski, 1996].

based economy sectors in which the flexibility is becoming a key growth factor in the micro- and macroeconomic scale.

The right way to manage and control the people must be efficient identification and naming changes, which still occur in the competitive environment of the company. Sudden changes do not make a flexible manager unnecessarily worried. They cause only momentary confusion, with which he/she will be able to cope. Such a manager is eager to risk, even at a moderate chance of success. He/she knows that the reality is complex and any innovation can bring unexpected results. He/she also strives for trying a relatively large number of ideas. In addition, he/she applies the entire range of styles, different forms of engagement and a wide range of management techniques. The sole determinant of his/her work is effectiveness. Depending on the needs, within a couple of hours, he/she can apply multiple basic styles, be active or not, etc.

Therefore, the manager of the 21st century should be open to learning, new experiences, ready for changes, and even for including ideas into his/her belief system that are often contrary to it. The challenges of the modern world cause that he/she may not occupy a privileged position of the one who knows – he/she should rather adopt the attitude of the one who wants to learn. Thus, the manager's activity cannot be limited only to fitting to the changing reality, in which the company operates, but he/she also must to create that reality.

The managers are expected to fulfil the role, in which leading the changes, designing solutions, motivating others, mobilising by his/her own example, and monitoring the process of change as well as correcting this process will be exposed. In other words, the manager must apply the so-called liberation management, which results from a flexible organisation and positive attitude to the efforts of all employees. The organisations need creative managers, who not only will be able to actually understand the processes occurring in the company, but also lead them effectively, by treating people as the most important intellectual property and the main driving force for development. The flexible manager creates his/her team the possibility of releasing the competence and commitment of every employee.

The managers, who will notice changing expectations towards them on time will understand their new role, will not only find themselves in the post-modern reality faster and easier but, above all, will obtain the privilege to co-create it.

Range of tasks executed by the sales manager – construction of theoretical and research model

While conducting a preparatory research [B_1] aimed at developing a research model, the authors have applied the method of literature studies [SL], documentation studies [BD] and participant observation [OU] and practical work experience [DW]. The preparatory research conditioned conducting the actual research; the authors' intention was to develop a list of tasks and activities executed by the sales managers that serve the foreign markets; originally, the developed list consisted of 53 tasks.

At this stage of designing the research, the original list of activities developed on the basis of the National Professional Qualification (Competence) Standards[5] supplemented with proposals of Polish and foreign authors [Cybulski, 2010; Cybulski, 2014; Futrell, 2004; Steward, 1995; Tracy, Scheelen, 2000; Zoltners, Sinha, Lorimer, 2005; Oleksyn, 1999; Nogalski, Śniadecki, 1998; Robbins, 1998; Stewart, 1995; Simpkins, 2006; Coker, Del Gaizo, Murray, Edwards, 2003; Cheverton, 2001, Greshes, 2007; Bures, 2007; Turek, 2006; Rosell, 2008; Maier, Saunders, 1990; Arnett, Macy, Wilcox, 2005] as well as own the research authors' own experience was used. One of the authors has been connected with domestic and international manufacturing companies operating in the agricultural machinery sector (management board) for over 12 years; the other one is a world-wide authority in the field of strategic management, strategy management (including sales management strategy), multi-entity organisations (sectorally diversified) management; he provides consulting services to many foreign entities[6].

The authors believe that the work executor has greatest cognitive value for researching tasks and activities at on foreign output market; he/she has most detailed information. Therefore, it was considered appropriate that own experience is one of the sources used to create such a list. The data from this source imply perception of individual workplaces through the objectives achieved by the entire organisation; they allow to understand better the nature and content of tasks executed by the people acting on the mentioned position.

In order to understand better the nature and content of the tasks of the person employed on the said position, the authors applied a simple and practical way. While specifying the model of sales on foreign markets, a job description was prepared. The conducted analysis provided a basis for sketching a general sales model of a agricultural machinery manufacturing company, which later allowed to understand specific tasks executed by the managers (Figure 1).

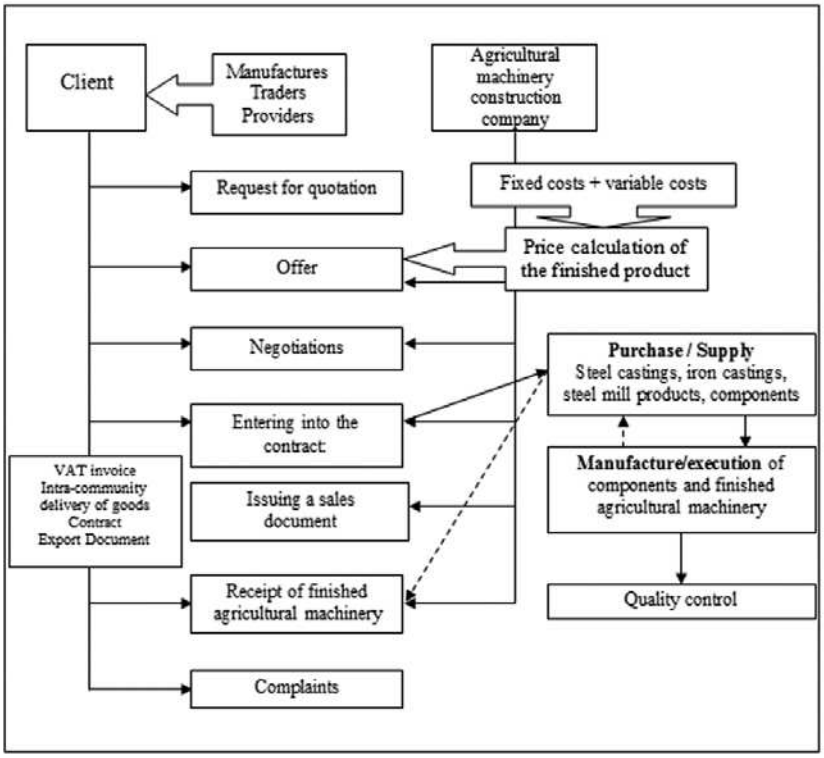
After sketching the sales process model, the authors strived to answer the following question: at which specific stages of this process does the person serving the foreign markets take part? Within the framework of the joint discussion, the responsibilities related to the sales process, i.e. promotion, advertising, offer preparation, calculations, negotiating agreements with clients, acquiring new buyers and creating long-term relationships with the current clients and sales counselling, were clearly

[5] The National Professional Qualification (Competence) Standards are a collection of information (related to knowledge of professions) materials developed for the needs of job agency, career counselling and vocational education and training (based on article 4, paragraph 1, point 2c and paragraph 1, point 7c of the Act of 20 April 2004 on employment promotion and labour market institutions, Journal of Laws of 2016, item 645, as amended). More: www.kwalifikacje.praca.gov.pl, DOA: 13 June 2017

[6] In recent period, the subject of his research has been primarily designing business models for companies diversifying their activities in foreign output markets.

defined. The tasks arising from the managerial function, i.e. motivation, organisation, control and planning, were also indicated.

Figure 1. Sales model of a manufacturing company in the international business



Source: own development.

A popular and quick way to generate new ideas at the present stage of task formulation used by the authors was an open discussion technique in a group of several people, i.e. the so-called brainstorming. When proceeding to the research, it is assumed that intuitive thinking in a group of deliberately selected management practitioners may lead to new ideas, concepts, associations, or links to already existing ideas and concepts; it was intended to obtain original and realistic solutions. The research objective was to present the original list of tasks and activities and to discuss them in relation to the researched sector. The people with competences and experience related to the discussed subject were invited to participate in the meeting. The discussion was carried out among 13 selectively selected representatives of agricultural machinery manufacturing companies (in each case, these were working people actively involved in the strategic management of sales in the company from which they come (7 people – owners) or for which they work (2 persons – sales director, 1 person – Eastern European market

service specialist, 3 persons – foreign market service specialist). Two stages were distinguished in the discussion: at the first stage, new ideas were reported, while trying to open the minds to all emerging possibilities and solution variants occurring in practice, whereas at the second one, the usefulness of the task list reported and presented by the authors was assessed.

In relation to the selected sources of information, subsequently, the research tool in the form of a list of tasks and activities executed in the work of the sales manager serving foreign output markets in the agricultural machinery sector.

Introduction of such a large number of variables considerably complicated and made it impossible to formulate meaningful conclusions. As a result, the original list was limited to 37 key (in the authors' opinion) tasks executed by the sales managers of the Polish manufacturing companies operating in the foreign agricultural machinery sector. According to the authors, this increased the tendency of respondents to participate in the study and answer to all discussed issues.

The list developed for further research was to give sense of the position existence in the context of a given company's objectives as precisely as possible. In this case, both the relevance and precision of the description were important. According to the authors, its characteristics should not be limited only to trying to calculate the most important tasks carried out on the discussed position; they should be hierarchised, about which is the further part of the paper.

Sales manager in international business – an attempt to assess the extent of executed tasks

Research scope and subject

Within the actual research [B2], interviews were conducted among 67 deliberately selected experts[7] (management personnel directly involved in the sale – 41 people[8], owners – 22 people[9] (in the case of 13 entities being family companies, future successors answered the questions), president of the management board – 3 (higher education, MBA (Poznań University of Economics), a commercial proxy – 1 (higher education; Master of Science [magister inżynier] (Poznań University of Technology: specialisation

[7] Initially, the survey was distributed to 71 people; however, 67 correctly completed questionnaires were received. In order to obtain the maximum number of returns of the filled-in research questionnaire, the part of the survey covering the question on a sociodemographic profile of a respondent and characterising the company were minimised.

[8] The authors included persons directly related to serving foreign markets, holding managerial positions in a company but holding no more than 10% of ownership in the group of managers. 70.73% of managers held higher education, 26.83% of them held secondary one, 2.44% of them held vocational one; 2 people were over 50 years old, 24 people were in the range of 40-50 years, 11 people were 30-40 years old, 2 people were under 30 years old.

[9] 11 owners held higher education, 4 held secondary one, 7 held vocational one; 9 people were over 50 years old, 3 people were in the range of 40-50 years, 9 people were 30-40 years old.

transport and rail vehicles)) of manufacturing companies operating in the agricultural machinery sector[10].

When deciding on the selection of respondents, an important criterion was direct acquaintance with the researchers supported by partner co-operation with the Production Plant of Agricultural Spare Parts and Machines "Fortschritt" as a research party. This allowed to determine whether the assessing representative of a company was independent in the presented judgements and issued opinions and whether he/she had sufficient knowledge on the undertaken issue supported by a well-established position in the industry. The entire research was conducted in May-June 2017.

In order to obtain the maximum number of returned filled-in research questionnaires, a number of various research techniques were applied. The survey questionnaire was distributed at business meetings or sent by e-mail. Depending on the used research technique, the filled-in questionnaires were returned directly on the meeting day or sent by e-mail. In situations, in which the questionnaire was less likely to be returned, a personal interview technique was used exceptionally in some cases; the questions were asked during a face-to-face meeting.

In relation with the expansion into foreign markets, the respondents were asked to indicate the intensity of executing individual tasks. The significance was marked on a five-point scale, where 1 – very low intensity of task execution, and 5 – very intensive task execution. The research results were subject to simplified statistical analysis.

Own studies results

The managers are involved in the execution of various tasks in their companies, whereas the degree of this execution, measured on a scale from 1 – very low intensity of task execution to 5 – very intensive task execution, varies depending on the task type. While taking into account the criterion of task execution intensity, they were divided by the authors into three groups, i.e. determinants characterising with high (key) and medium implementation intensity. 37 distinguished tasks were assigned to specific groups on the basis of their average value calculated on the basis of the total number of managers participating in the research. The authors have adopted the following solution: the lower limit of the range of valuesfor the high execution degree task group was 4.03, while the upper limit for the range of values for the medium execution intensity tasks was 3.97.

[10] The experts represented the following companies: micro – 8 people (10.63%), small – 23 people (38.29%), medium – 36 people (51.06%). Small and medium enterprises occupy a key place in the agricultural machinery sector, hence such entities were selected for the research. Most of them are companies based solely on the Polish capital, which have been present on the market for over 10 years. The companies participating in the research declare the activity both on the domestic and foreign markets; a condition of participation.

Group 1 – Tasks characterised with the most intensive execution

The group of the tasks most intensively executed by the sales managers serving the foreign output markets is dominated by the ones that can be divided fictitiously into three kinds:

a) Related to the client service and commercial transactions execution;
b) Resulting from the employee-superior relationship within the specified organisational structure of the company;
c) Related to monitoring and analysing the situation on the market.

The results of the conducted research show that the most important task executed by the sales managers on the foreign markets is building long-term, partner relationships with business partners (average score of 4.84 points; 72.3% of indications for the 5-point score). Such a high rank of this task allows to state that the sales managers implement the assumptions of the management of client relationship strategy in their companies in a practical way.

The complex nature of the activities undertaken and executed by the sales managers in terms of client service is confirmed by subsequent tasks indicated by them as "high execution degree tasks." They include:

- concluding key commercial agreements, negotiating with the recipients, supervising the detailed co-operation terms and conditions (average score of 4.79 points; 79.1% of indications for the 5-point score);
- maintaining contacts with potential recipients, monitoring clients possible to be acquired (average score of 4.75 points, 76.1% of indications for the 5-point score);
- implementing new products on a given market (average score of 4.57 points, 61.2% of indications for the 5-point score);
- determining the sales police and forms of promoting the company on a given foreign market (average score of 4.55 points, 58.2% of indications for the 5-point score);
- participation in creating the sales policy of the company (average score of 4.55 points, 52.2% of indications for the 5-point score);
- participation in co-creation of promotional and loyalty programmes. It is important to set a sales and promotion model that include target groups, budget, advertisement format and type and its components (trademarks, slogans, logo) (average score of 4.46 points, 55.2% of indications for the 5-point score);
- distributing information materials – catalogues, technical descriptions, etc. – among the potential recipients (average score of 4.25 points; 40.3% of indications for the 5-point score);
- undertaking activities influencing the creation of an appropriate company's image on a given output market (average score of 4.24 points, 41.8% of indications for the 5-point score);
- planning, co-ordinating and implementing the marketing strategy (average score of 4.21 points, 41.8% of indications for the 5-point score);

- participation in trade fairs, exhibitions, contacts with the media, supervision of promotional actions, periodic meetings with dealers (average score of 4.03 points; 32.8% of indications for the 5-point score).

The second group of tasks characterised with the greatest execution intensity includes the activities resulting from the employee-superior relationship (sales manager). In this case, management and delegation of tasks to subordinate employees are key (average score of 4.46 points; 61.2% of indications for the 5-point score). Complex management of relationships with the clients also requires skills of a group (an employee team) leader. Because of that, the team involving management of the team's work is characterised with high degree of execution by the sales managers (average score of 4.30 points; 43,3% of indications for the 5-point score). From this point of view, the skill of creating proper employee-superior relationships is important, which translates into intensely implemented co-operation between parties in the long run (average score of 4.30 points; 43,3% of indications for the 5-point score). Therefore, the selection and hiring of employees with appropriate competence are important. Employee recruitment conducted by the company is the result of the work monitoring conducted by it, employment planning and the developed company's operation strategy. Careful selection of personnel is the key to success in company management, as human resources possessed by the organisation, opportunities of their improvement and development and improvement of work efficiency indeed depend on the proper employee selection. Identification of personnel needs and proper organisation of the process of employee recruitment and selection should be one of the main elements of the strategy of operations developed in the company, hence they should be executed with the appropriate intensity (average score of 4.07 points; 61.2% of indications for the 5-point score).

Among the tasks related to monitoring and analysing the situation on the market (third distinguished category), activities concerning gradual analysis of consumers, competition and execution of own assumptions are of the first priority (average score of 4.39 point; 49.3% of indications for the 5-point score). The managers supervise the company's offer in its entire scope or a marketably separated part (average score of 4.33 point; 46.3% of indications for the 5-point score). Therefore, it is important to analyse the availability of products at the supplier – a representative on a given market. Appropriate exhibition; maintaining standards of the exhibited goods (merchandising standards) in served outlets is therefore a task gradually executed by managers (average score of 4.28 points; 37.3% of indications for the 5-point score). Such knowledge of the market is crucial from the point of view of implementing new products on the foreign market; it implies assessing the chance of its success (average score of 4.18 points; 25.4% of indications for the 5-point score). The gradually conducted market analysis enables the managers to run counselling activities regarding the purchase of an appropriate kind of product that is tailored to the needs of a given market or the application of an appropriate technical solution (average score of 4.24 points; 38.8% of indications for the 5-point score). Identification of the needs is possible thanks to the information

gradually acquired from the partners (average score of 4.18 points; 34.3% of indications for the 5-point score). Among the tasks intensely executed by the managers serving foreign output markets that are related to monitoring and analysing the situation on the market, the supervision of order performance from the clients, especially the key ones (average score of 4.18 points; 31.3% of indications for the 5-point score), and the preparation and analysis of sales reports (average score of 4.04 point; 31.3% of indications for the 5-point score) were highlighted.

Group 2 – Tasks characterised with medium execution intensity

A distinctive feature of the second group, which includes the medium intensity tasks, is its smaller volume. On a scale from 1, meaning low intensity of task execution, to 5, very intense task execution, only 14 tasks received the average scores within in the range of 3.97-3.24, which represents 37.84% of the total defined tasks.

Among the tasks specific to the position of a sales manager serving foreign output markets, which, however, are executed to a lesser extent (with less intensity) in comparison with the tasks set out in the first group, four following activity types can be distinguished:

a) related to the client service and commercial transactions execution;
b) resulting from the superior-employee relationship within the specified organisational structure of the company;
c) related to determining the strategy and programmes of the company's activity on the market;

Unlike the tasks in group 1, few tasks involving supervision of and providing the clients with appropriate information dominate among the tasks related to the client service and commercial transaction execution qualified to this category. As the conducted research show, these tasks are not as priority as the tasks of the first group. The sales managers are to supervise the manufacturing processes (average score of 3.63 points; 19.4% of indications for the 5-point score). It is about an active participation as a liaison on the manufacture-sales line. Acquiring information on potential competitors in the context of market diversification (average score of 3.63 points; 16.4% of indications for the 5-point score) and developing the direct sales in the subordinate region, including organising the retail network or personal acquisition (average score of 3.46 points; 13.4% of indications for the 5-point score) are of medium importance from the point of view of the executed tasks as well. The sales managers organise trainings (on knowledge about the product, manner and culture of sales) and meetings with foreign clients at an even lower extent (average score of 3.37 points; 9% of indications for the 5-point score).

The second group of the tasks characterised by medium execution intensity results from the superior-employee relationship within a specified organisational structure of the company. Acting as a subordinate, the sales manager executes six types of activities.

- settling the subordinate employees and the companies operating on a given territory (average score of 3.88 points, 26.9% of indications for the 5-point score);

- analysis of the financial and accounting documents, including assessing the achieved results (average score of 3.82 points; 26.9% of indications for the 5-point score);
- he/she assesses the efficiency of the employees' work (average score of 3.67 points, 16.4% of indications for the 5-point score);
- he/she develops reports for the superiors (average score of 3.64 points, 17.9% of indications for the 5-point score);
- he/she develops and implements employee motivational system (average score of 3.63 points, 16.4% of indications for the 5-point score);
- he/she analyses the labour market in detail for the sought employees (average score of 3.49 points, 16.4% of indications for the 5-point score);

Another task category includes the activities related to determining the strategy and programmes of the company's activity on the market. Taking into account the execution intensity degree, their hierarchy is as follows:

- determination of the message and objectives as well as details of the advertising campaign adequate to the requirements of a given market (average score of 3.97 points, 32.8% of indications for the 5-point score);
- co-operation with advertising agencies at creating the concept and implementation of the promotional programmes (average score of 3.30 points; 13.4% of indications for the 5-point score);
- co-operation with the institutions competent for a given market (banks, standards bodies, insurances, etc.) (average score of 3.24 points; 10.4% of indications for the 5-point score);

When looking at the above summary from the point of view of marketing company management, one can formulate the thesis that the sales managers are involved in activities appropriate to the strategic management phase to a greater extent than to the tactical one for which it is common to, among others, prepare specific programmes of promotional activities and building the clients' loyalty.

Conclusion

Flexibility of an organisation is one of the main challenges of the modern management. This issue has already been described quite widely in the theory realm. However, the practical issues remain to be solved. As the authors think, this publication will contribute to partial supplementing the knowledge in this area.

Its basic objective was an attempt to answer the following question: what activities and how frequently do the sales managers of the Polish agricultural sector companies, who serve foreign output markets, execute? The achievement of the main target required the authors to implement the intermediate objectives. By using the method of reconstruction and interpretation of the subject literature, the catalogue of key tasks executed by the sales managers of the territorially diversified companies was developed. Empirically, it was determined what the hierarchy of each of them is.

The conducted deliberations prove the point and purposefulness of such a construct of development strategies, which adapt the co-operation and partnership perspective as a starting point. Whereas this is not one of another management fashions, but a necessity dictated by the highly competitive principles' specifics of the agricultural machines market at almost every level – local, national, or international one. Hence the skill to establish the relationships with broadly understood participants of the international markets by the sales managers is currently a significant development factor of the companies operating on the Polish market.

According to the authors, it is impossible to predict all professional situations, behaviours of an organisation and its environment. Therefore, it is not possible to develop a single, universal catalogue of tasks appropriate for each sales manager serving the foreign output markets.

Therefore, the need for further, even more deepened research in this regard is noticed. The problems solved in subsequent chapters of the publication may be the subject of separate developments.

By proceeding to the research, the authors considered it reasonable to outline the assumption that business activities initiated by the manufacturer on the basis of the international markets largely force the managers to increase their flexibility. In other words, the greater the potential of the manufacturer to build a network of international networks, the higher the flexibility level of the managers serving them should be.

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Variety of competences expected by business service center from university graduates [1]

The article indicates the importance of Poland as one of the most important locations for business services both on the European and on the global map. It discusses the possibility to employ university graduates in the sector of modern services in university cities in Poland, in particular in Kraków. The variety of competences expected from university graduates both by business service centers as well as IT service centers is shown. Attention is paid to competences which will be increasingly important. The importance of cooperation between service centers and universities in order to adjust the effects of education to the needs of the centers as future employers is also stressed.

1. Introduction

Dynamic changes in conditions for conducting business operations from the international perspective through the development of information and communication technologies require strategic actions aimed at strengthening the competitive position of an enterprise. One of the solutions making it possible to improve the effectiveness of a company's functioning is offshoring, a modern concept which means the transfer of selected processes or functions from the company abroad. Core competences need to be separated and these operations which may be implemented by an own foreign company or by a foreign collaborating entity more effectively also need to be distinguished.

Currently, more and more entities decide to relocate their services. The offshoring of services applies, first of all, to IT services (development of applications, reengineering and safety control, processing of business transactions) as well as widely understood business services (finance and accounting, legal services, call centers, engineer-

[1] Publication was financed from the funds granted to the Faculty of Management at Cracow University of Economics, within the framework of the subsidy for the maintenance of research potential.

ing services, analyses and market research as well as data processing and administrative assistance).

The most significant resource in the case of services is the human capital. The expansion of modern business service centers to the Polish market results from the search for employees with a relevant level of education and competences as well as specialists in narrow areas of knowledge.

The developing sector of modern business services creates great opportunities to employ university graduates in university cities in Poland. While managing the variety of competences, business service centers expect various competences relevant to their specific nature from potential employees. The centers try to cooperate with universities by offering educational programs as well as traineeships and internships so that the future employees have competences adequate to tasks entrusted to them.

The purpose of the article is to point out the possibility to employ university graduates in the sector of modern services in university cities in Poland, in particular the variety of competences expected by employers in the sector of modern business services from university graduates. The article uses secondary sources of information, a report from the Association of Business Service Leaders (ABSL) on the sector of modern business services in Poland as well as the Balance of Competences in BPO and ITO in Kraków. The results of pilot research conducted in 2016, the purpose of which was to analyze employee variety in the BPO and the SSC sector in Kraków, are also quoted[2]

2. University centers as a place to locate modern business services in Poland

Global companies are more and more often relocating their operations when seeking for resources on foreign markets. They more and more frequently decide to relocate their operations to central and eastern European countries. The attractiveness of this region is growing due to: the availability of employees with specialized skills, the high quality of education, cultural proximity or the friendly climate for foreign investors. These attributes give central and eastern European countries an advantage as a place to locate services for businesses from western European countries. Enterprises more and more often choose nearshoring which consists in transferring jobs to regions which are not the cheapest but close to the headquarters in geographic as well as cultural terms[3].

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[2] The question about the possibility to conduct the research was addressed to 68 enterprises in the BPO and the SSC sector in Kraków. In many cases, the enterprises refused to participate in the research or did not express their consent for a complete survey. Finally, 9 enterprises were examined which amounts to feedback at the level of 13.2%. The low feedback from the research made the authors conducting the research to treat the obtained results as pilot research, modify the survey as well as undertake subsequent efforts to make the enterprises more interested in participating in the research.

[3] Gabryszak R., Foremna-Pilarska M., Perspektywy offshoringu usług, „Przegląd Organizacji" 2008, no. 2; Liberska B., Globalizacja a offshoring usług sektora IT, in: Globalizacja usług. Outsourcing, offshoring i shared services centers, edited by A. Szymaniak, Wydawnictwa Akademickie i Profesjonalne Sp. z o. o. Deloitte, Warsaw 2008, p. 248.

The most attractive positions in the ranking of the attractiveness of locations for modern business services by A.T. Kearney in central-eastern Europe in 2016 were occupied by: Poland (10th place), Bulgaria (12th), Romania (13th), Russia (17th), Lithuania (18th), Ukraine (24th), the Czech Republic (26th). It may be assumed that the geographical proximity of central and eastern European countries will be the factor affecting this region's competitiveness in the case of the offshoring of services[4].

320,000 people are employed in central and eastern Europe, 40% of which are employed in Poland, and 60% in other central and eastern European countries: the Czech Republic, Slovakia, Hungary, Romania and Bulgaria[5].

The number of employees employed in foreign service centers in Poland at the end of April 2016 amounted to 177,000 people. Poland is the leader in the sector of modern business services in terms of employment with average annual growth in employment in this sector remaining at the level of approx. 20%, and 25% in the last year[6].

There were 676 service centers with foreign capital in Poland at the end of April 2016. Taking into account the previous development of the sector, it may be assumed that foreign business service centers in Poland will be employing 300,000 people in 2020.

Poland is distinguished among other countries of the region by the high number of university centers. University majors the graduates of which are most often employed in the centers include economics, administration, computer science as well as engineering and technical majors. The greatest share in the structure of employment is attributed to IT services which provide 37% of the employees. Financial and accounting operations – 19%, and customer contact services – 15%. A significant role in the structure of employment is played by financial services (banking, insurance, investment) with share amounting to 11% (Fig. 1)[7].

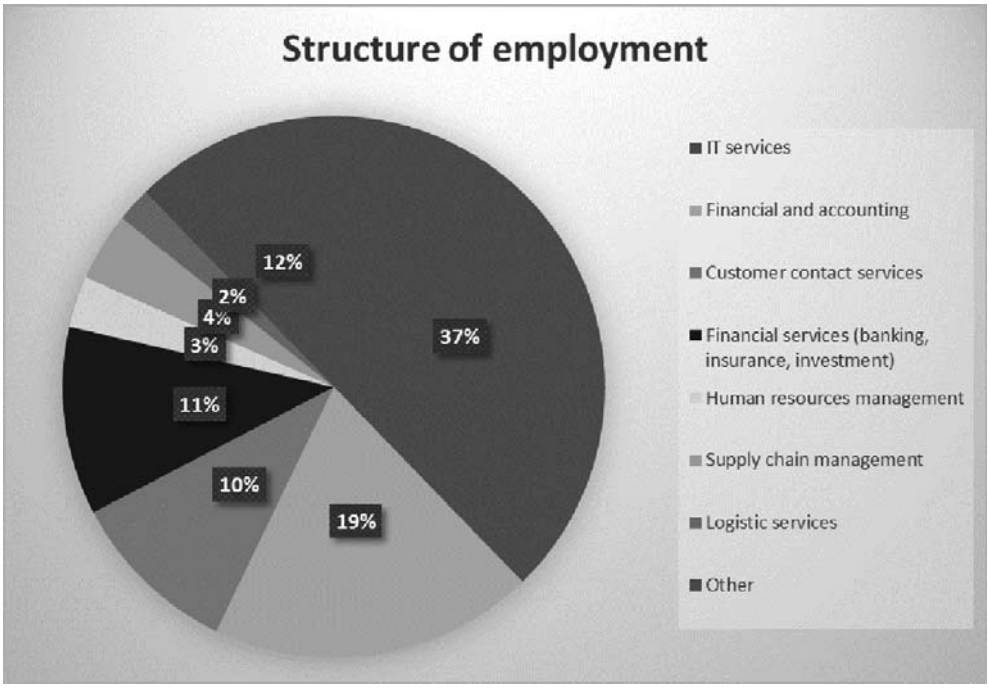
[4] Gabryszak R., Foremna – Pilarska M., …, op. cit.

[5] Sektor Nowoczesnych usług biznesowych w Polsce 2015, Związek Liderów Sektora Usług Biznesowych (ABSL), p.

[6] Sektor Nowoczesnych usług biznesowych w Polsce 2016, Związek Liderów Sektora Usług Biznesowych (ABSL), p. 7.

[7] Report, p. 28

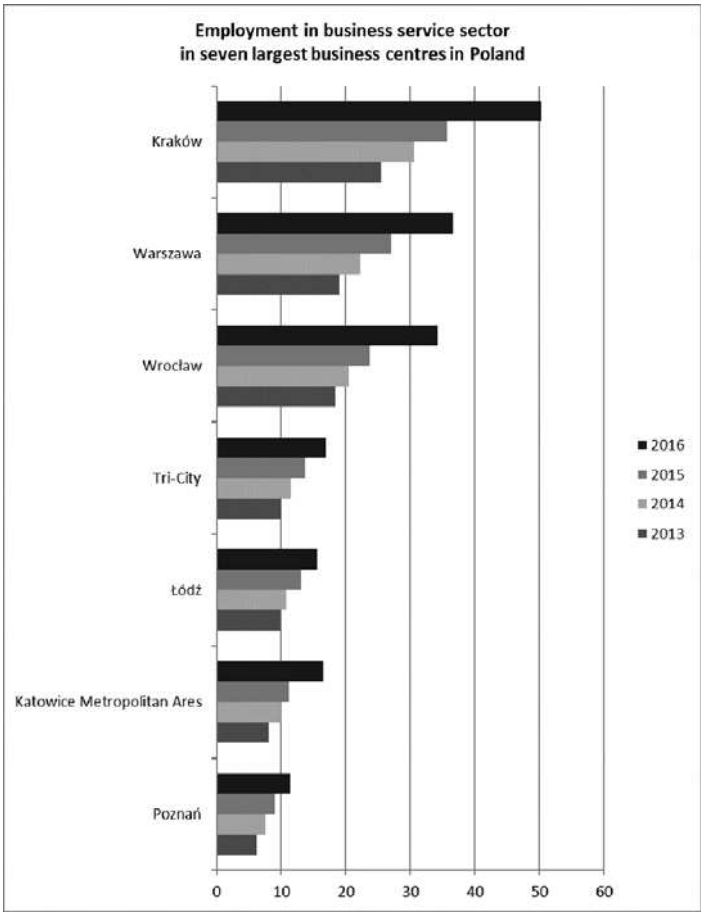
Fig. 1. Structure of employment in business service sector in Poland (as at 1st quarter of 2016) by categories of handled processes.



Source: Sektor nowoczesnych usług biznesowych w Polsce 2016, Association of Business Service Leaders (ABSL), 2016, pp. 27-28. (based on the results of a survey addressed to service centers (N = 169 companies employing 110,000 people).

The seven largest business service centers (Kraków, Warsaw, Wrocław, the Polish Tricity, Łódź, the Katowice Metropolitan Area, Poznań) employ 86% of all employees of business services centers with foreign capital in Poland. Kraków is characterized by the highest employment, foreign service centers employ 35,700 people which is 24% of all the employees in Poland.

Fig. 2. Employment in business service sector in Poland (comparison over the years: 2013, 2014, 2015, 2016). Until April 30, 2016



Source : Prepared by the author on the basis of: Sektor nowoczesnych usług biznesowych w Polsce 2013, 2014, 2015, 2016, Association of Business Service Leaders (ABSL), 2013-2016, pp. 7-10

The research among representatives of the sector confirms the fact that the most important factors to locate shared service centers in Kraków are not only relatively low costs, but the supply of employees with good knowledge of foreign languages. Subsequent significant factors include: the availability of office spaces, renowned brand of the city (attractive to live in) as well as a good network of airplane connections.

The sector of modern business services in the Małopolska region is developing dynamically and Kraków is the largest center for such services in Poland. The employment in the sector is growing also due to the fact that the global leaders of that sector are locating new branches in the Małopolska region. According to some experts, the growing trend in the sector of modern outsourcing services in Kraków will be steady in the subsequent years.

3. Variety of competences expected from university graduates in sector of business services

The international exchange of services is organized in specific organizational forms. The following may be distinguished: offshoring of business and IT processes, shared service centers as well as knowledge process offshoring (KPO). Each of these forms requires employees with various competences.

The literature on the subject introduces a distinction between IT offshoring and the offshoring of business processes. IT offshoring is associated with IT technologies as well as processes present in an enterprise's value chain. IT offshoring includes: the implementation or handling of modern technologies and may apply to using the internet, e-commerce with regard to databases and processing them. BPO, namely the offshoring of business processes, applies to transferring the functions of an enterprise regardless of the degree of using IT, e.g. finance and accounting, legal services, engineering services or market analysis and research[8].

The following forms of the offshoring of business processes may be distinguished due to the type of conducted operations:

- phone service centers (call/contact center) – centers providing services requiring the flow and processing of information, e.g. IT help, consulting or conducting market research,
- shared service centers (SSC) – centers dealing with broad activities in the administration sphere, apart from customer services, e.g. accounting-HR services, including handling transactions, invoices from suppliers, payment of remuneration as well as legal consulting[9].

A shared service center is a model used by international businesses for twenty years. The development of the centers is strictly related to the development of telecommunication and information technologies. At first, they were created for accounting and financial processes, but the scope of their use was extended with time. Currently, still as part of the centers, the most frequent services are related to finance and reporting, IT as well as purchases, the execution of orders, human resources, IT systems, management of real estate or the administration of agreements[10].

A shared service center is providing services only for its parent enterprise and its customers. In turn, the outsourcing of business processes (business process offshoring, BPO) is a contract with external companies to perform particular processes.

A new developing form of the offshoring of business processes is offshoring based on knowledge – knowledge process offshoring (KPO). The offshoring of processes based

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[8] M. Majchrzak, Offshoring jako nowoczesna forma świadczenia usług w skali międzynarodowej, Zeszyty Naukowe, Uniwersytet Ekonomiczny w Poznaniu, Poznań 2010, number 146.

[9] A. Masłowski, Nowe formy usług opartych na wiedzy, „Handel Wewnętrzny", 2005, number 3; M. Majchrzak, Offshoring jako nowoczesna forma…op. cit.

[10] M. Majchrzak, Offshoring jako nowoczesna forma…, op. cit.

on knowledge is related to the search for employees with skills in various domains. The demand for highly-qualified specialists results from the comprehensive nature of processes subject to offshoring. KPO applies to services which require specialized expert knowledge regarding, e.g. market analysis and research, legal advice, engineering and project services. KPO includes financial services, business&market intelligence.

Centers providing financial and accounting services have created such a number of jobs that employees for financial and accounting matters with the knowledge of foreign languages were classified as employees with a high shortage in 2016 (previously they were shortage employees)[11].

The sector of modern services also needs IT specialists. Shortage occupations in Kraków in 2016 include: website programmers and administrators, database designers and administrators, specialists in applied IT. Of course, the demand for each of these occupations is defined by specific requirements regarding the technology in which a given person is to work. Enterprises search for specialists, among others, with the knowledge of the Java, C++ languages and the NET technology. Employees with experience are also valued. Therefore, some changes in job force take place between companies competing for the best specialist by offering them higher remuneration[12].

The basic requirement for university graduates is the knowledge of at least two foreign languages at conversational level. Apart from English, the following languages are desired: German, Dutch, Scandinavian languages, Portuguese, Hungarian or Czech. Employers also experience problems with employing people with the knowledge of German at their expected level. The demand for specialists with the knowledge of this language is high, but not all graduates meet the employers' requirements. As the number of countries for which services are provided grows, the demand for people with the knowledge of other foreign languages, e.g. Danish, Swedish and Norwegian, also increases.

The report on the balance of competences in the sector of modern business services in Kraków presents the results of research regarding competences expected by managers.

The most important competences expected from university graduates in the BPO/SSC sector include honesty, focus on the customer, oral communication, care about quality, cooperation as well as the knowledge of English (Table 1). In the ITO/IT sector, the competences include the knowledge of English, honesty, initiative, care about quality, involvement and innovativeness (Table No 2)

The results of pilot research conducted in 2016 by the Department of Labor Resources Management at the Cracow University of Economics (CUE) in the sector of modern business services in Kraków, it may be stated that the first place among competences expected from university graduates is the knowledge of English, then involve-

[11] www.barometrzawodów.pl 11.06.2016 r.

[12] Bilans kompetencji branż BPO I ITO w Krakowie. Raport końcowy z przeprowadzonych badań, Kraków 2012, p. 78

ment, honesty, cooperation, oral and written communication as well as initiative. Therefore, these are mostly competences indicated in the research from 2012, although in a slightly different order.

Table 1. Most important competences of university graduates expected in BPO/SSC sector

Most important competences indicated by companies from BPO/SSC sector Grades in 1-5 scale, where 1 – the least important, 5 – the most important	
Honesty	4.78
Focus on the customer	4.67
Oral communication	4.60
Care about quality	4.60
Cooperation	4.60
English	4.60

Source: Bilans kompetencji branż BPO I ITO w Krakowie. Raport końcowy z przeprowadzonych badań, Kraków 2012, p. 30

Table 2. Most important competences of university graduates expected **in ITO/IT sector**

Most important competences indicated by companies from ITO/IT sector Grades in 1-5 scale, where 1 – the least important, 5 – the most important	
J. English	4.50
Honesty	4.50
Initiative	4.43
Care about quality	4.43
Commitment	4.43
Innovation	4,29

Source: Bilans kompetencji branż BPO I ITO w Krakowie. Final report z przeprowadzonych badań, Kraków 2012, p. 30.

These competences of university graduates which were at the same time considered important and difficult to acquire are particularly worth exhibiting. This group for the BPO/SSC sector included: communication (oral and written), involvement, analytical skills, stress management, adaptation, focus on objectives, focus on the customer, intercultural sensitivity, cooperation, impact on others as well as the German language (Table No 3.).

Table 3. Competences most difficult to acquire on job market by companies in BPO/SSC sector

Competences most difficult to acquire on job market by companies in BPO/SSC sector Grades in 1-5 scale, where 1 – very easy to acquire, 5 – very difficult to acquire	
Oral communication	3.78
Intercultural sensitivity	3.78
Written communication	3.78
Commitment	3.67
Analytical capabilities	3.63

Source: Bilans kompetencji branż BPO I ITO w Krakowie. Final report z przeprowadzonych badań, Kraków 2012, p. 30

In the case of the ITO/IT sector, competences which are important and most difficult to acquire include: initiative, innovativeness, involvement, algorithms and structures of data as well as intercultural sensitivity (Table No 4.).

Table 4. Competences most difficult to acquire on job market by companies in ITO/IT sector

Competences most difficult to achieve on job market by companies in ITO/IT sector Grades in 1-5 scale, where 1 – very easy to acquire, 5 – very difficult to acquire	
Initiative	3.86
Innovation	3,71
Ability to test software	3.60
Commitment	3.57
Algorithms and data structures	3.50
Intercultural "sensitivity"	3.50

Source: Bilans kompetencji branż BPO I ITO w Krakowie. Raport końcowy z przeprowadzonych badań, Kraków 2012, p. 30.

Pilot research conducted in the sector of modern business services in Kraków makes it possible to note the importance of involvement, initiative, innovativeness, care about quality, cooperation, honesty and focus on the customer. The pilot research does not make it possible to formulate generalizing conclusions, but it is interesting that the importance and difficulty in obtaining intercultural „sensitive" graduates on the job market were not indicated.

The situation may have changed in the last several years and university graduates may have the expected intercultural sensitivity understood as an attitude towards co-

operation with the representatives of other cultures. The process of educating students is increasingly focusing on the students' preparation to undertake actions on the global job market.

An exceptional aspect of the analysis presented in the report is taking into account the long-term perspective regarding requirements related to the demand for specific competences in sectors related to offshoring. In the case of the BPO/SSC sector, the greatest dynamics of demand is anticipated regarding innovativeness, impact on others, the basics of economics, stress management and initiative. In the case of the ITO/IT sector, the greatest dynamics is anticipated regarding such competences as: initiative, innovativeness, written communication, oral communication, focus on objectives, organizing one's own work, cooperation, involvement, intercultural "sensitivity", knowledge of English, learning, adaptation, stress management as well as analytical skills.

The results of pilot research also indicate the fact that the following will be increasingly important: involvement, innovativeness, initiative as well as the ability to cooperate.

This suggests a clearly growing demand for the so-called soft competences related to teamwork in multicultural environments. Innovativeness – understood as generating ideas, creating and implementing new solutions improving work – is a competence the dynamics of which was assessed highest both in the sector of business services and IT services.

4. Summary

To sum up, it may be stated that foreign investors show a growing interest in starting offshoring in Poland offering attractive job costs, language competences of the employees as well as a consistent business environment.

It should be assumed that offshoring in the area of services will be developing dynamically and will be more and more often concerned with complex services based on knowledge with an increasingly higher added value. Such trend in the worldwide economy will most likely result in the growth in the demand for specialists from very narrow domains of knowledge.

The educational offer of universities should be focused on the future demand of employees with specific competences. Universities should monitor the expectations of employers regarding competences as well as undertake and continue their cooperation with service centers. Shortages regarding soft competences could be supplemented by the use of active teaching methods: teamwork, analysis of case studies. An important role may be played by the strengthening of the role of student organizations, traineeships and internships for students as well as international cooperation with regard to student exchange programs or participation in the ERASMUS program.

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Transfer of knowledge and technology from scientific institutes to the Polish economy

One of the main challenges faced by the Polish economy is the need to increase its level of innovation. The statistical data indicates that the innovativeness of the Polish economy is at a much lower level than in both the highly-developed countries, as well as the countries recently admitted to the European Union. In light of this fact, the present paper focuses on one of the factors of the growth of innovation, namely the transfer of knowledge and technology. The paper presents the conditions for the transfer of knowledge and technology, and then discusses the results of empirical studies, carried out among the small and medium-sized entrepreneurs in Poland. The results of the studies can be useful for Polish entrepreneurs, as well as scientists and economic politicians implementing activities for the growth of innovation of the Polish economy.

Introduction

The improvement of the competitive position of the Polish economy to a large extent depends on the achievement of an adequate level of innovativeness. Meanwhile according to multiple comparisons, there is a technical and technological gap between Poland and highly-developed countries. This is evidenced i.a. by a comparison of the Summary Innovation Index for the Polish economy and analogous indicators for other countries of the European Union. Although in recent years many programs promoting innovation have been implemented, the level of innovativeness of the Polish economy is still relatively low, and lower than in countries that joined the European Union in the same time period. Additionally it can be seen, that the Polish economy has the lowest partial indicators – used for the calculation of the summary innovation index – in the area of linkages and entrepreneurship, the research and development system, innovators and the results of cooperation. The article focuses on the last of the listed indicators, showing that one of the important activities leading to the growth of innovativeness is the

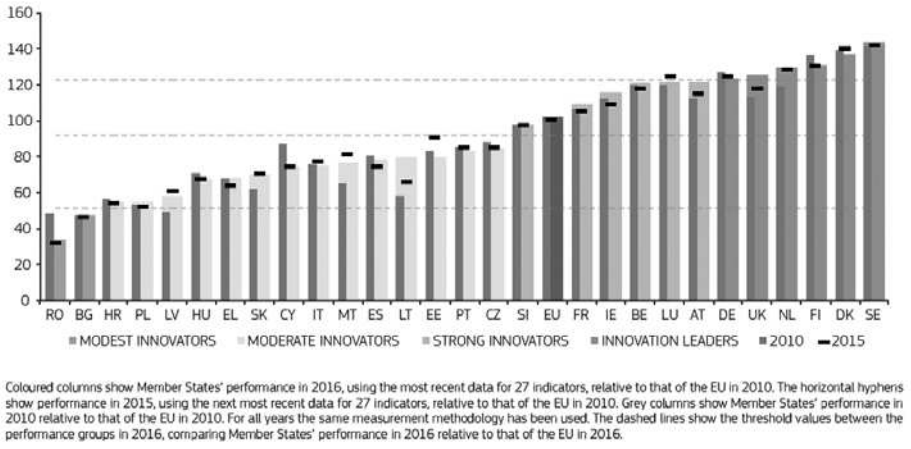
intensification of the transfer of knowledge and technology from scientific institutions to economic entities.

1. Conditions for the transfer of knowledge and technology from research institutes to the economy

In the contemporary economy, science and technology are among the most important factors affecting the competitiveness of enterprises. Due to the complexity of the products and the shortening of their life cycle, in addition to conducting their own research companies are also looking for external sources of knowledge. The search for external knowledge and the development of new technologies is important for almost all sectors of the economy, and especially for the technologically advanced sectors. From the 1980s, the governments of many countries started to become aware of the benefits brought by technology transfer, which was reflected in the systems supporting the transfer of knowledge and technology introduced i.a. in the United States, Germany, or France. As a result of these policies, many companies established active cooperation with scientific and research units.

The transfer of knowledge and technology from scientific units to the economy is becoming increasingly important also in the Polish economy, in particular in light of the need to increase its innovativeness. Although in recent years many activities have been undertaken in order to boost innovation, the innovativeness of the Polish economy still remains at a much lower level than in highly-developed countries. This is confirmed, i.a. by the data from the report of the European Commission entitled "Innovation Union Scoreboard", which compares the innovativeness of EU member states and selected non-EU countries. The primary indicator for the measurement of innovativeness adopted in the report is the Summary Innovation Index, which is derived from 25 sub-indicators. Based on this indicator, we can notice that in 2017, the Polish economy was ranked at the 4th spot from the bottom among the countries of the European Union (chart 1). However, it is worth mentioning, that in comparison to 2014 Poland moved up from the group of weak innovators (catching-up countries) to the group of moderate innovators.

Chart 1. Summary Innovation Index in 2017 in European countries



Coloured columns show Member States' performance in 2016, using the most recent data for 27 indicators, relative to that of the EU in 2010. The horizontal hyphens show performance in 2015, using the next most recent data for 27 indicators, relative to that of the EU in 2010. Grey columns show Member States' performance in 2010 relative to that of the EU in 2010. For all years the same measurement methodology has been used. The dashed lines show the threshold values between the performance groups in 2016, comparing Member States' performance in 2016 relative to that of the EU in 2016.

Source: EC "Innovation Union Scoreboard" 2017

Among the analyzed areas, which are the basis for the calculation of the Summary Innovation Index, Poland obtained the highest marks in the area of human resources, intangible assets, financial support and investment for enterprises. The lowest marks, and at the same time the largest discrepancies between Poland's rating and the average rating for the EU, were assigned to the areas of linkages and entrepreneurship, the research and development system, the innovators and the effects of cooperation. We can also notice that entrepreneurs are not utilizing the potential of cooperation brought by cooperative links which enable collaboration with other entities, including with scientific and research entities. Taking this into account, we should consider the conditions for the growth of innovativeness of the Polish economy. It seems that one of them is the intensification of knowledge and technology transfer from scientific and research institutions to the economic practice. It is currently emphasized, that the beginning of the 21st century has become a period for Polish companies when they began to utilize the results of scientific research in order to enhance their level of innovativeness and competitiveness. Taking this into account, the following sections of the paper present the forms and determinants of the transfer of knowledge and technology, and subsequently the role of scientific and research entities in that process.

2. Transfer of knowledge and technology – theoretical context

The process of creation of knowledge and its utilization may take place within a single organization, or within separate organizations. Currently an increasingly important role in the process of knowledge creation is played by scientific institutions. That is why we are talking about the transfer of knowledge from the scientific sphere to the sphere of production. Such transfer may also relate to the flow of knowledge between

economic organizations that collaborate with each other on various stages of the innovation process. It should be noted that the transfer of knowledge is a concept that is broader than the transfer of technology. The transfer of knowledge is the transfer of information necessary for a given entity to be able to utilize the work of another entity. Meanwhile, the transfer of technology is a specific case of the transfer of knowledge and involves the transfer of specific technical and organizational expertise and the associated know-how for the purpose of (commercial) utilization[1], or as a transfer of the given technical knowledge to economic practice[2]. A. Jasiński uses the concept of the "transfer of technique" and it may be concluded, that this is a concept synonymous with the transfer of knowledge and technology[3]. Its meaning covers the concepts of the transfer of knowledge, processes, information, classification of the transfer channels (personalized knowledge embodied in people, depersonalized knowledge – contained in documents), i.e. everything that enables the introduction of a new product on the market. K. Matusiak describes the transfer of technology as a process of supplying the market with technologies[4]. Enterprises may derive new knowledge and technologies from their own research and development works, or from ideas and projects acquired from external entities. These may include research institutes, universities and innovative companies involved in the development of new technical solutions. The knowledge and technology created in these entities must be important for the recipient in terms of quality, which will motive the recipient to utilize it. The recipients of knowledge include manufacturing companies or service companies which implement innovative projects in order to sell them on the market. For the purpose of further considerations, the author of this work adopted the definition of knowledge and technology transfer as the transfer, sharing, transmission of specific technical or organizational knowledge and its associated know-how from scientific entities to other entities. Scientific entities are carrying out research works whose effects should be transferred to the economy. In addition, as emphasized by K. Klincewicz, the transfer of technology is also associated with the necessity of seeking private sources of financing for the con-

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[1] P.Głodek, K.B.Matusiak, *Transfer technologii [Transfer of technology]*, [in:] *Innowacje i transfer technologii – słownik pojęć* [*Innovation and transfer of technology – glossary of terms*], ed. K.B. Matusiak, PARP, Warsaw 2011, p. 213.

[2] K.Poznańska, *Sfera badawczo-rozwojowa i przedsiębiorstwa w działalności innowacyjnej [Research & Development Sphere and Enterprises in the Innovative Activity]*, Instytut Funkcjonowania Gospodarki Narodowej SGH, Warszawa 2001, p. 69

[3] A.H.Jasiński, *Bariery transferu techniki na rynku dóbr zaopatrzeniowo-inwestycyjnych [Barriers to the transfer of technology on the market of intermediate and capital goods],* Wydawnictwo Naukowe Wydziału Uniwersytetu Warszawskiego, Warszawa 2005, p. 10–12

[4] K.B.Matusiak, *Budowa powiązań nauki z biznesem w gospodarce opartej na wiedzy. Rola i miejsce uniwersytetu w procesach innowacyjnych* [Building links between science and business in a knowledge-based economy. The role and place of the university in innovative processes], Szkoła Główna Handlowa, Warszawa 2010, p. 213

duct of scientific research[5]. The channels for the transfer of knowledge and technology to the economy may include:

- transmission of information in published sources and computer databases,
- conducting training, conferences, seminars for enterprises,
- participation of people from research entities in the projects of other units,
- implementation of agreements on behalf of other entities,
- sale of the results of scientific research and development works,
- sale of licenses, implementation works and know-how,
- laboratory services provided to enterprises,
- certification services
- creation of spin-off companies.

Scientific entities, including universities and research institutes, may participate in all the above mentioned forms of transfer. Activities of this type have been provided with a proper legal basis. And so, in Article 4 of the "Law on higher education" it is established, i.a., that universities cooperate with their social and economic environment, in particular with regard to the conduct of scientific research and development works for the benefit of economic operators, in separate forms of activity, including through the creation of a special purpose vehicle, as well as through the participation of the representatives of the employers in the development of the educational programs and in the teaching process[6]. The act also sets out that, for the purpose of improved utilization of the scientific and technical potential of the universities and the transfer of the results of research works to the economy, the universities may operate academic business incubators and technology transfer centers, and create the above mentioned special purpose vehicles (in the form of a joint stock company or a limited liability company)[7]. Similar regulations concerning the possibilities for the transfer of knowledge and technology are contained in the Act of 30 April 2010. This act specified, that a research institute "is a State-owned organizational unit, which is legally, organizationally and economically separated, and which conducts scientific research and development works focused on their implementation, as well as their application in practice"[8]. The act clearly defines the profile of activity of research institutes in Poland. The basic activity of the institutes primarily includes the conduct of scientific research and development works, adaptation of the results of the scientific research and development works to the needs of practical

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[5] K.Klincewicz, *Zarządzanie technologia. Przypadek niebieskiego lasera*. [Technology management. The case of the blue laser.] Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego, Warszawa 2010, p. 29

[6] Act of 27 July 2005. The law on higher education, Journal of Laws No. 164, item. 1365 as amended (consolidated text of the Act based on the Journal of Laws of 2012, item 572, 742, 1544; Journal of Laws of 2013, item 675, 829, 1005, 1588; Journal of Laws of 2014, item 7.

[7] Ibidem art. 86

[8] Act of 30 April 2010 on Research Institutes, Journal of Laws of 2010, no. 96, item 618, art. 1.1.

application, and their implementation. In connection with the conducted core activity the research institutes may:

- disseminate the results of their research and development works,
- perform studies and analyses, and develop opinions and experts' reports in the scope of the conducted scientific research and development works,
- develop assessments related to the state and development of the individual fields of science and technology and the sectors of the economy which utilize the results of the scientific research and development works,
- conduct standardization, certification and approval activities,
- keep and develop databases in the scope of scientific, technical and economic information, in the scope of inventions and intellectual property protection, and also conduct activities supporting the innovativeness of enterprises,
- produce the apparatus, equipment, and materials related to the conducted scientific research and development works,
- conduct a publishing activity related to the conducted scientific research and development works[9].

These legal regulations provide scientific entities with the ability to conclude various forms of cooperation, which may result in obtaining new channels of commercialization of the results of the scientific and research works, the conduct of activities in the field of technology transfer and the dissemination of science, or the acquisition of new sources of financing. Taking that into account, the question arises of whether the enterprises, in specially small and medium-sized, using the results of technology transfer from scientific institutions to their innovations activity. In order to answer this question empirical research was conducted, the results of which are presented in a synthetic manner below.

The role of scientific institutions in the process of knowledge and technology transfer in light of the results of empirical research

In order to implement the scientific objective adopted above, 505 effective CATI surveys were carried out[10]. The subject and the purpose of the research determined the selection of the respondents, who were made up of the managerial staff of the studied companies, whereby almost half of the surveyed persons were the owners, the presidents or the members of the management board (47%), 18% of the respondents worked at senior management positions, and 10% occupied the position of a specialist.

The study was carried out on small and medium-sized enterprises. The share of small enterprises was 86%, and the share of medium-sized enterprises was 14%. Micro-

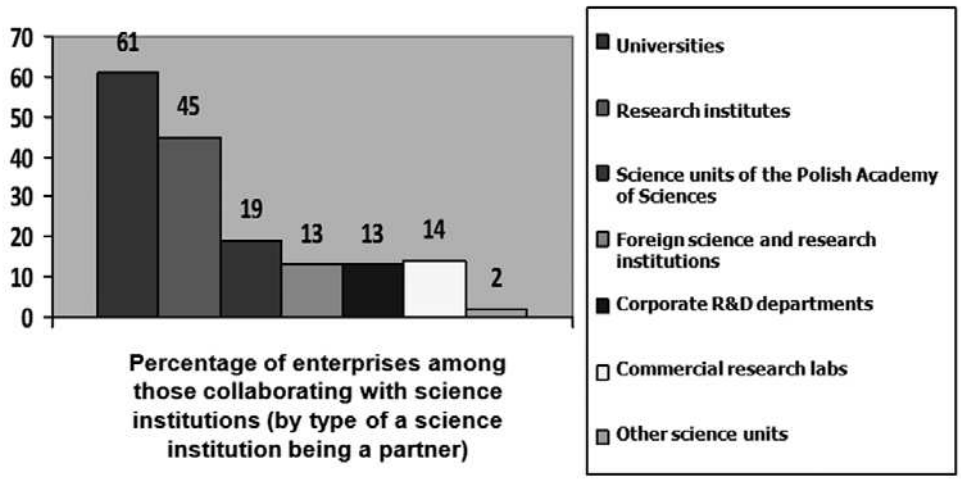
[9] Act of 30 April 2010..., op.cit, Article 2, section 2.

[10] The study was carried out in the framework of the statutory research of The Enterprise Institute of the Warsaw School of Economics entitled „Cooperation of small and medium-sized enterprises with external entities in the field of innovation", Warsaw, Poland, 2015

sized and large enterprises were deliberately excluded from the study. The author of the study adopted simplified criteria for determining the size of an enterprise based on the number of employees, whereby small enterprises are ones with employment from 10 to 50 people, and medium-sized enterprises are companies employing from 51 to 250 people. The study included companies that were registered in all of the voivodeships in Poland, with the highest number registered in the Mazowieckie voivodeship (19%) and the Śląskie voivodeship (13%).

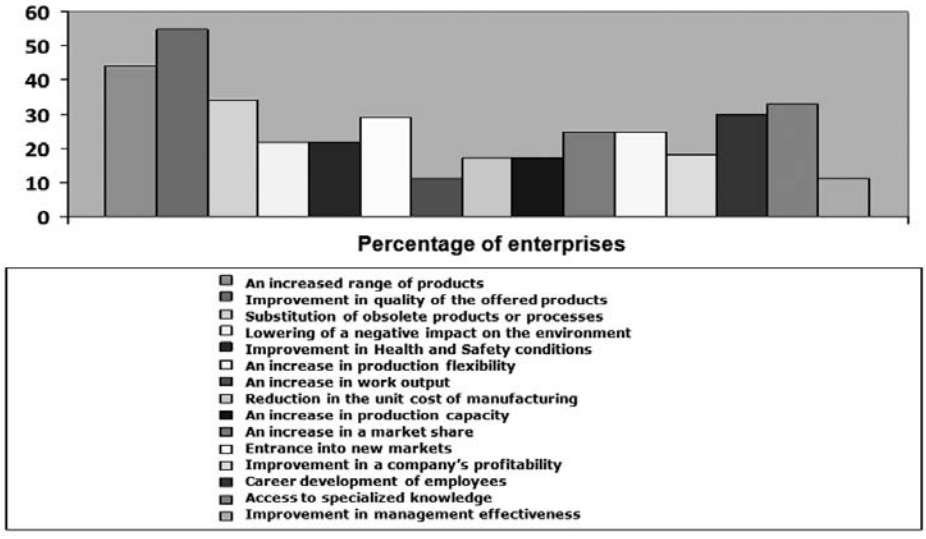
The conducted research indicates, that only 19% of the surveyed enterprises were involved in cooperation with scientific institutions. The enterprises most frequently cooperated with universities and research institutes (figure 1). We can also notice, that the enterprises were the initiators of such cooperation. The activity of universities and other scientific institutions is relatively low in this regard. Cooperation was most frequently established in the scope of development and implementation of new and improved products/processes. Other areas of cooperation included: the training and professional development of workers, consulting in the field of various areas of the company's activity, new methods of organization and management. When it comes to the form of cooperation, the respondents most frequently indicated non-institutional collaboration established on the basis of direct contacts with the researchers. The research carried out among enterprises that they are acquired some benefits during collaboration with science institutions (figurer 2) .

Figure 1. What science institutions is an enterprise collaborating with?



Source : own research

Figure 2. Benefits of collaboration with science institutions

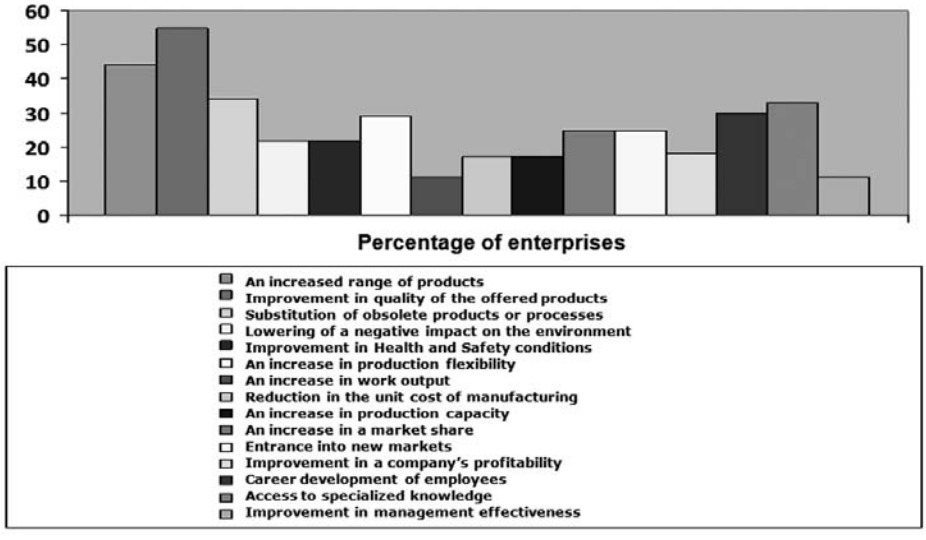


Source : own research

As part of the study the author also analyzed the barriers for cooperation between enterprises and scientific institutions. The most important identified barriers included:

- the lack of information about the offers of the scientific entities,
- the high cost of the offered services,
- bureaucratic obstacles,
- the scope of services being unsuited to the company's business profile (figure 3).

Figure 3. Barriers to collaboration with science institutions



Source : own research

The respondents pointed out that they didn't actually know the offer of services of the scientific institutions and that they also faced difficulties in obtaining exhaustive information concerning the research capabilities of the universities or other scientific entities. In view of the above, the informational barrier was most frequently reported as the basic cause for the lack of cooperation with scientific entities and lack of utilization of the results of the carried out research and development works. The establishment of cooperation is also dependent on all kinds of financial issues, including the financial risk. From direct interviews it follows, that for a significant number of entities the costs and the profits of the cooperation are difficult to determine. Additionally, the high costs of research and development works, technologies and deployments, the limited own resources of the companies and the scientific entities, as well as difficulties in obtaining external financing, significantly limit cooperation. Another group of barriers are the bureaucratic obstacles. Here we should list the lack of standards at the universities in relation to the sharing of profits from the sale of intellectual property rights, as well as the lack of institutionalized forms of cooperation. The cooperation between scientific entities and business is still based primarily on the involvement of individual researchers, who are often deprived of any support from the management of the university or the research institute. Many studies indicate, that in the sector of science we are still observing a lack of pro-market orientation of the scientists and the lack of involvement of the universities in cooperation with the business world[11].

Summary

The results of the conducted studies it should be concluded, that the transfer of knowledge and technology is relatively poorly developed. Small and medium-sized enterprises which should utilize the results of research and development works conducted by scientific entities, are reluctant to engage in cooperation and frequently determine, that the offer of these entities is unattractive and not suited to their needs. The scientific entities also prefer the passive forms of transfer of the results of their research to the economy, in the form of publications and training sessions. Meanwhile, such forms of transfer of knowledge as, for example, patents are relatively rarely used in the practice of the economy. The inspection carried out by the Polish Supreme Chamber of Control in 2015 in eight research institutes and five ministries overseeing these institutes indicated, that only 20%

[11] This is indicated i.a. by the results of the personal interviews concerning the expectations and the needs of the managerial staff of the universities with regard to cooperation with business, that were carried out in the framework of the study entitled "The diagnosis of cooperation between higher education and the economic sector", See. K. Poznańska, M. Zarzecki, P.Matuszewski, A. Rudawski, *Innowacyjność przedsiębiorstw na Mazowszu oraz współpraca ze szkołami wyższymi. Raport z badania [Innovativeness of companies in the region of Mazowsze and cooperation with universities. Study report]*, Politechnika Warszawska, Warsaw 2012, p. 68–69

found practical application[12]. Taking this into account, it seems advisable to formulate recommendations and proposals of activities which could, to a certain extent, lead to the intensification of the knowledge and technology transfer from the research institutions to the economy, which was also included in the "Plan for Responsible Development" of Deputy Prime Minister Mateusz Morawiecki. Due to the short period of implementation of the plan, we cannot clearly determine whether it will affect of many factors.

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[12] *Efekty działalności instytutów badawczych. Informacja o wynikach kontroli* [*The effects of the activities of research institutes. Information on the results of the carried out inspections*], Polish Supreme Chamber of Control, Warsaw 2015, p. 10.

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Autistic attitudes of Polish companies in the process of creating innovations

Many contemporary economists notice the possibility of an accelerated development of economies in the implementation of the model of open innovations in which companies, universities, institutes and other entities cooperate with one another in the process of learning, exchanging information and mutual implementation of innovative projects. The situation in Polish companies regarding innovative operations is far from the idea of open innovations. The majority of companies value independent innovative projects and their protection more than cooperation and exchanging ideas. The purpose of the article is to show the scope of this phenomenon in the light of empirical research and to formulate hypotheses regarding the reasons for autistic, closed attitudes of Polish companies towards potential partners in innovative projects

Introduction

Autism is a disease which results, among others, in a limited capacity of communicating one's feelings and building relations. I came across the use of this notion with regard to a company and its behavior only once – during research on the strategic behavior of Polish companies conducted in the 1980s by a team led by Bogdan Wawrzyniak [1]. Z. Dworzecki, one of the members of the team, called a company's strategy autistic, and it referred to the way of defending the company against the influence of the environment and the extreme isolation and focus on self-sufficiency to a great extent. The problem of the lack of cooperation and isolation from other participants is frequent in the research on the functioning of networks, alliances of companies as well as on the cooperation between companies. The issue of interaction, cooperation and coopetition is often discussed in the research on resource strategies of companies. The issue of coop-

[1] *Zarządzanie w kryzysie*, red. B. Wawrzyniak, PWE, Warsaw 1985.

eration between companies in creating innovations has been widely described in recent years. The model of open innovations widely described in the literature on the subject forces the idea of companies which value cooperation with other companies more than the protection of knowledge and the rights to innovative solutions in their innovative actions.

Using Polish research, in this article I would like to show the extent to which Polish companies are willing to cooperate with regard to innovations, whether they value safety and exclusivity more than the possibility to learn and cooperate, and what is an autistic strategy of developing innovations.

Tendency of Polish companies to cooperate in the process of innovations

Research conducted by the Polish Central Statistical Office (GUS) in 2016 analyzed the scope and the nature of Polish companies and the economic aspects of their operations as well as the issue of cooperation between companies in innovative operations[2]. Cooperation regarding innovative operations was defined as "active participation in mutual projects with other companies or non-commercial institutions". It was stated that 29.1% of active innovative companies as well as 24.4% of service-oriented companies cooperated as part of innovative operations in the years 2013-2015, slightly less than in the previous years. The largest number of cooperating industrial companies (50% and above) was found in the sector of the production of pharmaceutical products, other transport equipment, coke and oil refinement products as well as tobacco products, the smallest number of cooperating companies (below 20%) was found in the sector of furniture, clothes, paper and textile production. The largest number of cooperating companies in the group of service-oriented companies was found in the sector of scientific research and development works, insurance, reinsurance and retirement funds as well as air transport, the smallest number – in the sector of land and pipeline transport, postal operations, water transport and wholesale trade.

The research of GUS shows that one of the important factors differentiating the scope of cooperation is the level of technology in a given sector. The percentage of cooperating companies in the group of industrial companies active in innovations was 50.5% in the sectors of high technology, 39.4% in the sectors of medium-high technology, 28.1% in the sectors of medium-low technology and 18.6% in the sectors of low technology. Taking into account the territorial division, the highest percentage of cooperating industrial companies was observed in the Podkarpackie voivodship, the lowest percentage – in the Lubuskie voivodship, while the highest percentage of cooperating service-oriented companies was found in the Mazowieckie voivodship, and the lowest percentage – in the Zachodniopomorskie voivodship. The territorial differences reflect the diversity resulting from the location of particular sectors.

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[2] *Działalność innowacyjna przedsiębiorstw w Polsce w latach 2013-2015, „Informacje i Opracowania Statystyczne", GUS, Warsaw 2016.*

The research of GUS asked companies which partner institution they assessed as the most favorable for their innovative operations. The answers revealed large differences between industrial and services-oriented companies. The best partners for industrial companies were successively: universities, suppliers and companies from the same group of companies, while for service-oriented companies: companies from the same group of companies, suppliers and universities. Companies seldom indicated competitors and other companies from the same business domain as partners in cooperation, but they also indicated customers relatively seldom. This shows, on the one hand, the scarce presence of coopetition and a supply nature of Polish innovativeness. On the other hand, a significant growth in the share of companies cooperating as part of cluster initiatives among cooperating companies has been recorded in recent years. This share is 19.2% for industrial companies, and 29.5% for services-oriented companies.

Research conducted by the Polish Agency for Enterprise Development (PARP) among Polish micro-businesses in 2014 showed that 78% of companies cooperate, most often with other domestic companies and with companies from the same capital group, less frequently with the science sector[3]. The comparison of micro-businesses which implemented innovations in recent years and those that did not implement innovations made it possible to notice significant differences regarding the level of cooperation with the environment – innovative companies had a significantly larger scope of cooperation, not necessarily regarding innovations. When asked how innovations were created in all types of innovations, the dominating answer was "we developed them on our own". The answer "we developed them in cooperation with another entity" was submitted by 13% to 27% of companies. It turned out that the widest scope of cooperation was observed during process innovations (27%) and product innovations (26%), the smallest scope – during organizational innovations (13%) and marketing innovations (19%). This may be explained not so much by the willingness to protect organizational and marketing innovations, but with the deficit of higher resources in the case of process and product innovations. Micro-businesses most often cooperated with domestic businesses not related with the company in terms of capital, with a company from the same capital group and with a foreign company not related in terms of capital. The following barriers in cooperation with other companies were indicated most often by micro-businesses: difficulties in finding an appropriate partner, difficulties in organizing and coordinating the cooperation, the dishonesty of the partner and the partner's desire to impose their opinions. What is interesting, when asked about the reasons of such lack of interest as many as 80% of innovative micro-businesses which have not started cooperation with other companies yet, answered: "we have no such need".

[3] *Innowacyjna przedsiębiorczość w Polsce. Odkryty i ukryty potencjał polskiej innowacyjności, ed.* P. Zadura-Lichota, PARP, Warsaw 2015, chapter 3. *Zbyt małe, żeby współpracować? Analiza współpracy w mikrofirmach.*

Interesting information about cooperation in the process of innovations was provided by research by KPMG conducted in 2013 in 500 large and medium companies[4] . It was stated that they key form of innovative operations in these companies are research and development works. Most often the companies conduct these works independently, and then: they entrust these works to scientific units, commercial suppliers and experts, least frequently – they cooperate with a research unit as part of a capital group. When it comes to cooperation beyond R&D, it takes place with companies from the same sector more frequently than with related sectors. The companies indicated the following as the most efficient forms of innovative operations: conducting R&D works inside the company or a group in Poland as well as purchasing new or improved machines, devices and software.

Research by Deloitte conducted in 2016 showed that 71% of Polish companies cooperate with other entities during the implementation of research and development projects. At the same time, the number of companies which indicate that cooperation between entities results from the criteria for granting support is falling which means that the awareness of the need for systematic cooperation in the process of innovations is growing[5].

The measure of the companies' willingness to cooperate regarding innovations is the approval and the popularization of the idea of open innovations among entrepreneurs – a model in which external participants are involved at all stages of the innovative process and the partners constantly exchange information, learn and cooperate. The latest research conducted in Poland shows that the scale of the presence of open innovations in Polish companies is small even among the most innovative companies[6].

The results of research presented in this article make it possible to state that the lack of cooperation with other entities is a standard among Polish active innovative companies, rather than cooperation. This applies not only to innovativeness but also to practically all areas of potential cooperation.

Models of innovation strategy

The scope of a company's cooperation with other entities in the process of developing innovativeness may be measured with the use of two criteria: the involvement of external resources and the involvement of external entities in the process of developing innovations in the company.

External resources are financial, tangible and intangible resources obtained from outside the company. Financial resources obtained from the outside in the form of credits, subsidies, the issue of bonds or shares do not substantially affect the limitation of

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[4] KPMG

[5] *Badania i rozwój w przedsiębiorstwach, Deloitte Polska, Warsaw 2016.*

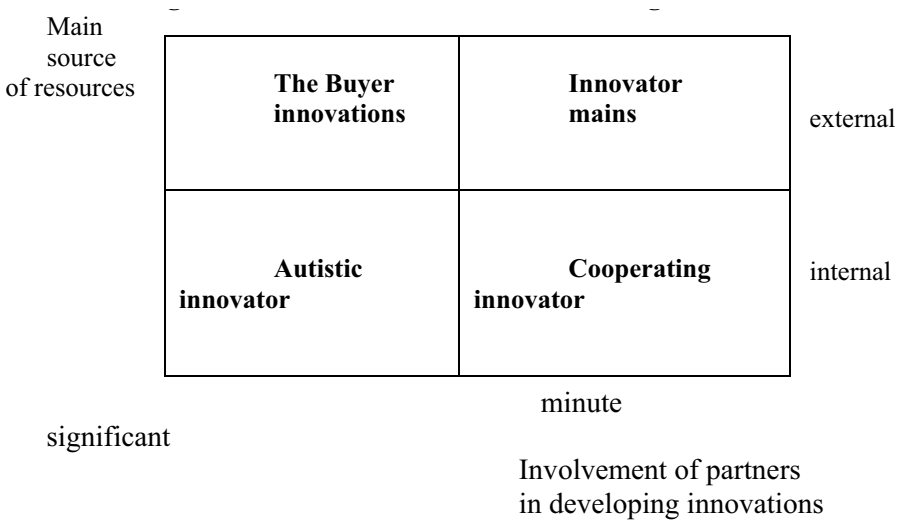
[6] A. Sopińska, W. Mierzejewska, Otwarte innowacje produktowe realizowane przez przedsiębiorstwa działające w Polsce. *Podejście zasobowe, OW, SGH, Warsaw 2017.*

property rights to innovations, and the high level of financing from external sources is not a good measure for the level of cooperation. Mutual financing of innovative projects by companies is an exception. The dependence on partners is higher in the case of using their material resources, e.g. production capacities, laboratories, equipment etc., the possibility of information flow is also greater and the protection of intellectual property is weaker. The greatest number of benefits, and hazards, is generated by the development of innovations based on external intangible resources particularly if the cooperation does not take place in a separated unit, e.g. a joint venture company, but in direct cooperation between companies. Cooperation by the exploitation of mutual resources may be replaced by the purchase of particular resources, e.g. licenses or trademarks or by the purchase or lease of a company in part or in whole.

The second criterion differentiating cooperation strategies is the degree of the involvement of external entities in the process of developing innovations. The level of cooperation is proven by the number of partners and the nature of their involvement (sporadic or regular, number of projects generated independently and in partnership, as well as the degree of mutual dependence between the partners. The form of cooperation is very significant in this case – a greater effect of cooperation may be observed in a formalized network, e.g. in a cluster, a smaller scope and dependence in cooperation with universities or research units – in the case of a cooperation agreement or contracting tasks. The determination of the actual strength of the company's cooperation and the impact of the cooperation strategy on the effects of innovation and the level of intellectual property protection is a challenge for researchers of innovative processes. To put it simply, it may be stated that an autistic company is characterized by independence in developing innovations and basing solely on its own resources, while a company cooperating with regard to innovations is characterized by a wide use of external resources and an intensive, systematic cooperation with numerous partners.

The model presented in Figure No 1 may provide some assistance in diagnosing the cooperation strategy of innovative companies It presents four models of innovation strategies differing in the combination of two dimensions characterizing the manner of building and developing innovations by a company: the source of acquiring resources (internal or external) and the degree of the involvement of the company's partners in the development of innovations (minute or significant).

Figure No 1. Models of innovation strategies



Source: prepared by the author.

Figure No 1 presents four models of innovation strategies: "autistic innovator", "cooperating innovator", "network innovator" and "purchaser of innovations".

An "**autistic innovator"** is a company that builds its innovativeness mainly by using its own resources, e.g. creative creators, its own inventions, ideas and funds and does not involve other enterprises in these operations, e.g. suppliers or buyers, it also avoids entering networks, clusters and other forms of cooperation that would make it share knowledge and jointly use innovations. A considerable part of Polish start-ups are companies belonging to this category. The reason why this strategy is used may be the difficulty in access to financial funds or knowledge, but also the desire to sell the company or a patented solution as a result of having the exclusive property right to the solution.

A "**cooperating innovator"** is a strategy typical of larger companies that pay great attention to the property right to innovations and its protection but if they wish to operate on a large scale they need to cooperate with the environment – with scientific and research units, with suppliers, with banks and funds financing innovative operations. They place their key elements in their structures, develop their own R&D departments, employ their own staff and largely finance innovations from their own funds and credits thus maintaining strong control over the innovative process and the commercialization of innovations. The reason for choosing this strategy may also be the insufficient level of own resources and the desire to learn or to copy the partners' accomplishments.

A "**network innovator"** is a company that values the synergy effect resulting from the cooperation on innovative solutions more than short-term benefits arising from the protection of own innovations. These benefits are a large scale of investments and the

possibility to achieve breakthrough inventions, access to the partners' knowledge, increasing the competitiveness of one's own sector and the market in the international dimension. Companies frequently execute this strategy operating in clusters or consortia.

A **"purchaser of innovations"** is a company that purchases innovations either in the form of ready-made patents and solutions from research and development units or other companies, or acquires, makes alliances or merges with companies which have valuable resources or ready innovations. A company executing this strategy needs to have significant financial outlays, but it has a large degree of control over innovations and may take advantage of them as in the strategy of the "autistic innovator". The motive for executing this strategy is the desire to quickly develop innovative operations which cannot be executed through internal development or the lack of core competences necessary to be successful in demanding sectors.

Every company executing a strategy of developing innovation may be qualified into one of the four model strategies, but the companies will most often be found in the border area between various models. A company in subsequent periods of its operations may also change the strategy, e.g. as the size of its operations grows it moves from the category of the "cooperating innovator" to the category of the "purchaser of innovations". A company may also differentiate the innovation strategies in various domains of its operations, e.g. it may use the strategy of the "autistic innovator" in its key domain, and the strategy of the "purchaser of innovations" in another domain – this situation is frequent in pharmaceutical companies which focus research on groups of medications key to them, and buy others along with companies which have licenses.

The question which model of innovation strategies is used most often in Poland cannot be answered without representative empirical research. The next point is an attempt to make my own assessment of the innovative strategies of Polish companies with the use of information gathered by the "Rzeczpospolita" newspaper during the preparation of the ranking of innovative companies[7] and an attempt to identify the model strategies of selected leaders of the ranking.

Polish leaders of innovativeness and their strategies for developing innovativeness

The research on the innovativeness of Polish companies was conducted using the rankings of innovative companies of "Rzeczpospolita" which are organized since 2005. The basis for the rankings are the results of a survey that "Rzeczpospolita" sends to companies every year. In response to the survey, companies provide information which makes it possible to assess the scope of cooperation in the implementation of their innovative operations.

[7] *Ranking firm innowacyjnych 2015, „Rzeczpospolita", 2015.*

The ranking from 2015 covered 45 companies. 21 of them had expenses on R&D exceeding 1% of their revenues. The leader of the ranking – Zakłady Mechaniczne Tarnów S.A. – had the highest percentage, more than 51%, while subsequent innovators on the list had more than 10%: Asseco Poland S.A., ComArch S.A., Radmor S.A. and PCD S.A. The leader in terms of employment in R&D was Asseco – almost 80% of the employed were people employed in research and development works. 24 companies from the list had the indicator of employment in R&D more than 1% of total employment, 37 companies had their own research and development facilities. When it comes to the level of the protection of innovations, 9 companies have a license for their products, 19 have patent protection in Poland and 5 have patent protection abroad, 19 companies have product innovations without equivalents abroad.

The development of innovations with little use of external support is symptomatic for Polish leaders of innovativeness, both with regard to joint development of innovative products and their financing. Table No 1 shows the scope of cooperation between the leaders of innovativeness during the financing of implemented innovative projects.

Table No 1. Participants of financing of R&D operations conducted by leaders of innovativeness

Entities participating in financing of R&D operations in an innovative company	Number of companies	Percentage share of companies	Diversity of the partners' percentage share in expenses on R&D
Only leaders of innovativeness	24	53	0
Without the participation of the leaders of innovativeness	8	18	100
Leaders involving other entities	13	29	from 0.10 to 88
Total	45	100	

Source: prepared by the author, e.g. "Ranking firm innowacyjnych 2015"

Table No 1 shows that the majority of the leaders of innovativeness conduct research and development operations on their own, a considerable part of other leaders of innovativeness implement joint projects with a diverse financial participation of the partners. If we add 7 leaders the participation of which in the financing of R&D operations exceeded 90%, we have almost 70% of leaders who finance their innovative projects on their own. Other domestic companies, research units and scientific institutions are the most frequent partners of the leaders of innovativeness in their research and development operations. Research and development operations in 8 companies were fully financed by external entities: in one case, the total costs of research was borne by a research unit, in others – the consortia of domestic and foreign companies as well as scientific units and other entities.

Table No 2 shows the sources of financing of innovative operations in the leaders' companies.

Table No 2. Sources of financing of R&D operations conducted by leaders of innovativeness

Sources of financing of R&D operations in the companies of the leaders of innovativeness	Number of companies	Percentage share of companies	Diversity of percentage share in sources of financing
Own funds of the leaders of innovativeness	44	98	from 39 to 100
Financial support from the budget	12	27	from 1 to 55
Financial support from the EU	9	20	from 0.4 to 52
Other sources	4	9	from 2.76 to 61

Source: prepared by the author, e.g. "Ranking firm innowacyjnych 2015"

Almost all leaders of innovativeness financed research and development operations from their own financial funds in the examined period, in 37 cases their share in funds for financing innovative works exceeded 90%. Taking into account the high EU funds and funds from the state budget intended for applied research in the previous financial perspective, we cannot say that the access to sources of financing was difficult. This is another evidence of the companies' aversion to share control and profits from research and development operations with their partners.

Five companies were selected from among the 45 leaders of innovativeness to be thoroughly analyzed in order to define their innovative strategy: Elektrobudowa S.A., Qumak S.A., Rafako S.A., Protector S.A. and Asseco S.A. Summary descriptions of the cases of these companies will be presented below along with the attempt to assign them to model strategies shown in Fig. 1.

Elektrobudowa S.A. is executing the strategy of the "autistic innovator". This is proven by a complex R&D department, a significant percentage of people employed in research and development operations, and high own expenses on these operations, although they were diverse in particular years. The company has innovative products developed by its own R&D facilities and implemented into production, e.g. a gas-insulated high voltage switchgear. The majority of innovative operations apply to new and improved products and services, but the management has introduced a number of innovations in the field of strategy, marketing and organizational processes in recent years. On the whole, development is based on two types of own key resources: financial capital and human resources, which makes it possible to develop internal innovations and to purchase innovative entities or licenses. The method of the implementation of innovative operations is characterized by great autonomy – the company does not co-operate with any entity with regard to developing innovations, it also finances them

fully from its own funds. It does not operate in any cluster or network. Acquisitions of high-technology companies took place only incidentally. The growth in the company's foreign expansion and the growing experience on the market of acquisitions may promise a combination of the strategy of the "autistic innovator" and the strategy of the "purchaser of innovations".

Qumak S.A. is executing the strategy of the "cooperating innovator". The company is developing its technological innovations independently in its own R&D department, employment in research and development operations amounts to 3%, the expenses on research are also substantial, but the company tries to increase its innovative competences cooperating with scientific units. The cooperation with scientific units is the consequence of the implementation of a number of orders for universities and scientific centers by Qumak – it is the leader of services for the education and scientific-research sector and is renowned as a reliable business partner. Due to constant contacts with those units, Qumak has the opportunity to consult its ideas with scientists, it cooperates with numerous universities, has a signed cooperation agreement with the Military University of Technology, Warsaw. Basically, Qumak mostly finances its innovative projects on its own, but it occasionally uses the possibility to finance projects from the State budget or from EU programs in cooperation with Polish universities, e.g. it currently uses the financing of the Ministry of Science and Higher Education of the Republic of Poland as part of the program "Horizon 2020". The company is executing a project under the brand Qumak – a locomotive simulator for training engine-drivers, as part of cooperation in the Polish National Center for Research and Development (NCBR) cooperating within a consortium, among others, with the Railway Institute and WAT. The R&D department is conducting large-scale market research, it also specializes in writing innovative projects and acquiring external funds for the projects. Qumak is also cooperating with companies from the ICT sector, it serves as an innovation incubator for selected companies with big development potential which create modern tools and undertake cooperation with Qumak. Using its contacts and experience, Qumak is making it easier for young companies to enter the market, gives access to the most advanced technologies and financially supports projects, in return it has priority in access to sprouting technologies. Due to the nature of its products and services intended for a specific customer, it is also using the knowledge of its customers and their inspirations to create new ideas. Qumak is currently developing, first of all, in an organic manner – developing its own innovative products and offering them to current and new customers, there were several acquisitions of other entities to expand the offer of operations at the stage of creating the group. It is possible that the company will use external resources more often than currently along with the growth in internationalization and the model of the "cooperating innovator" will be supplemented by the model of the "purchaser of innovations" with regard to selected segments of the market.

Rafako S.A. is combining the strategy of the "cooperating innovator" with the strategy of the "autistic innovator". It is bearing significant expenses on its own research and development, it has several project offices located in Poland and abroad. Rafako's products are protected with patents in Poland and abroad. Expenses on R&D are financed from own funds, from subsidies from the state budget and from EU programs. This financial support is obtained by means of active participation both in domestic programs managed by NCBR and in EU projects. Rafako is closely cooperating with numerous scientific institutions as part of research and development operations. Projects implemented by Rafako focus on several thematic groups, among others: the development of boiler technologies and environmental protections systems, including methods for the desulphurization and denitrification of flue gases as well as the modernization of dust removal devices. The strategy of innovation management at Rafako is based on owned strategic resources, first of all on own technological solutions and licenses, own staff and production facilities, as well as on good cooperation with business partners and scientific units. Rafako has complete engineering facilities enabling the implementation of innovative projects in the form of a project office and a design office as well as a production plant where the new solutions may be tested. Regardless of process and product innovations, Rafako was implementing innovations with regard to internal processes as well as strategies and business models. The new strategy of Rafako emphasized the significance of business partners in acquiring new markets and new competences and the need to build permanent strategic alliances, but it also plans the further development of internal structures for research and development operations. The scope of cooperation is smaller than in the case of Qumak and relates mainly to "safe" partners – universities as well as research and development units.

Protektor S.A. is executing the strategy of the "autistic innovator". Protektor was ranked on the list of innovative companies for the first time in 2015 due to high expenses on research and development, having its own R&D department as well as significant employment in research and development operations. The expenses on R&D were financed from the company's own funds, some innovative projects were implemented in cooperation with research institutes. The basis for developing innovative solutions in the sphere of technologies and products in Protektor is a long-term experience on the footwear market, numerous certifications for particular models and groups of footwear as well as certificates for quality management systems, and good relations with regular recipients. The company's priority is high protection of own resources and innovations, the company is financing innovations from its own funds and that is why new templates of products and technologies are developed as part of a capital group. Despite incidental acquisitions and cooperation with science, the company's priority is strong protection of innovations which allows the company to compete on a very competitive market with a unique quality of footwear in Poland and abroad.

It May be said that the main products of **Asseco Poland S.A.** are innovations It is implementing two strategies at the same time, depending on the project and the market: the "cooperating innovator" and the "purchaser of innovations". The company is spending tremendous amounts of money every year on research and development works conducted in a management company (13.45% of revenues). The majority of people employed in the company are currently working on developing innovative initiatives (79.82% of employees). This is supplemented by high expenses and extended R&D departments in the Group's foreign companies and expenses on the purchase of innovative companies, an extended innovation center, possessed software licenses, numerous products without equivalents in Poland. Asseco Poland S.A. is basing its operations on knowledge and innovative technologies as well as its wide experience in the IT sector. The offered solutions are also developed due to structural funds and funds from the state budget intended for science. Asseco Poland S.A. is also participating in the implementation of research and development projects conducted in cooperation with scientific and research centers at universities and other organizations supporting the development of Polish science. Due to the mutual implementation of projects, Asseco Poland S.A. is actively participating in the exchange of knowledge and experience between the IT industry and the sector of science and higher education. The company is building long-term relationships with customers based on trust and is becoming a strategic business partner. Asseco uses the best experience of companies from an international capital group to create a comprehensive offer meeting the requirements of thousands of customers. The innovation strategy of Asseco Poland is based on two pillars. First – organic development the basis of which is own software and services, and second – development by acquisitions. Asseco is implementing takeovers of companies which will make it possible to increase competences in a given sector and which will allow the company to enter new geographic markets. Most recently, Asseco has been acquiring innovations from the outside by the acquisitions of start-ups, small technological companies, in order to take over their products or a capable IT team which also is an innovative management decision. A successful acquisition policy ranks Asseco Poland among the most experienced companies in this area in Poland. The case of Asseco makes it possible to observe the evolution and merger of various strategic models depending on the project and the market. The company starts from the strategy of the "cooperating innovator", but as it gains experience and financial funds, it is more and more often currently using the strategy of the "purchaser of innovations".

Summary

The research presented in this article shows that the autistic attitudes of Polish companies in the process of developing innovation are common in small and in large companies. Various publications have already attempted to explain this phenomenon. Several hypotheses are formulated which may explain the closed and distrustful attitudes of Polish entrepreneurs towards their possible partners. The first explanation is the low level of

social trust among Poles which is transferred from social and political life to the sphere of business relations[8]. The second explanation is poor legal protection of intellectual property and poor ethics of behavior in the Polish business – in this case, companies protect themselves against the partners' criminal activities by limiting cooperation. And, finally, the third explanation – Polish companies, as companies in countries with more developed legal and business institutions, perform an economic balance, estimate risk, costs, economic and non-economic effects of cooperation and make decisions on cooperation on this basis. The issue which companies and under what circumstances overcome their distrust and undertake a wide cooperation with numerous partners and whether they are more successful in the implementation of innovations than autistic companies is equally interesting. These questions may only be answered by large-scale empirical research of the innovative strategies of Polish companies and their determinants.

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Dental Tourism in Hungary and Poland – Cluster and Business Model Perspective at Selected Locations

The paper provides a comparative analysis of medical tourism issues in Hungary and Poland. Analysis is focused on dental services clusters in Budapest and Gdansk. In the paper following aspects of medical tourism were discussed: national strategies implemented in global medical tourism industry, elements of contemporary medical tourism as a relations web, structure of medical tourism cluster and components of typical business model, operating on dental services market. The research of mentioned issues reveals that dental cluster in Budapest is on the higher level of dental service excellence and customer satisfaction as a medical tourism network in comparison to Gdansk. Key factors influencing this state of cluster development are: government policy, city touristic attractiveness, medical tourism ecosystem, integration of partners business models and level of network thinking in local institutions.

National strategies in global medical tourism industry

A range of national government agencies and policy initiatives have sought to stimulate and promote medical tourism in their countries. Many countries see significant economic development potential in the emerging field of medical tourism.

The Thai, Indian, Singaporean, Malaysian, Hungarian, Polish and Maltese governments have all sought to promote their comparative advantage as medical tourism destinations at large international trade fairs, via advertising within overseas media and Internet platforms.

The global increase in the flow of patients and health professionals as well as medical technology has led to new patterns of consumption and production of medical services in the past decades. Free movement of goods and services contributed to the liberalization of trade in health services.

One of the first countries that recognized the potential of medical tourism and began to use it, attracting thousands of patients, was India. In the period 2009- 2011 the number of medical tourists in India increased by 30%. The next leading countries in the field of medical tourism are Singapore, Thailand and Mexico.

European leaders are Turkey, Hungary and the Czech Republic.[Lunt, et al., 2011] *The main reason for that situation is high quality of service offered in the above-mentioned countries. For example, Singapore is recognized as having the best equipped clinics all over Asia, and lower price than offered in other countries. The value of the global medical tourism market is estimated at 188 billion USD annually.*[Lunt, et al., 2011]

As a result, public and private hospitals in the EU can treat foreigners, and treatment costs are covered by national health funds from their country to the value of the same treatment in the country of the patient's origin. Outside the European Union, the country with a large development of medical tourism is Turkey.

Through 2010-2014 32% growth in the medical tourism market in Turkey was recorded, and the Turkish government goal is to achieve 10 billion USD in 2016 by supporting 1 million patients.[Lunt, et al., 2011] Along with the continuous development of medical tourism, medical tourists demand for space, additional attractions or facilities has increased. Countries and institutions that are the destinations of medical tourists use more and more marketing tools to create the most attractive offer for existing and potential customers. These entities use all marketing tools characteristic of the tourism industry, but to better adapt to the needs of customers, a new profession in this branch has arisen – medical tourism facilitator, which intermediary organizes and supports the movement of medical tourists. Medical tourism facilitator is responsible for contact, support and assistance to tourists at various stages of their tour.

In Poland such profession is known as a specialist in the field of medical tourism and it is becoming so necessary, that many national universities have opened special studies in this field. These include:

- Warsaw School of Economics with the course of Health Tourism Manager,
- Łazarski University with the course of Medical Tourism,
- Cracow School of Health Promotion provides education of health tourism specialization within the Tourism and Recreation studies. [Religioni, Religioni 2015]

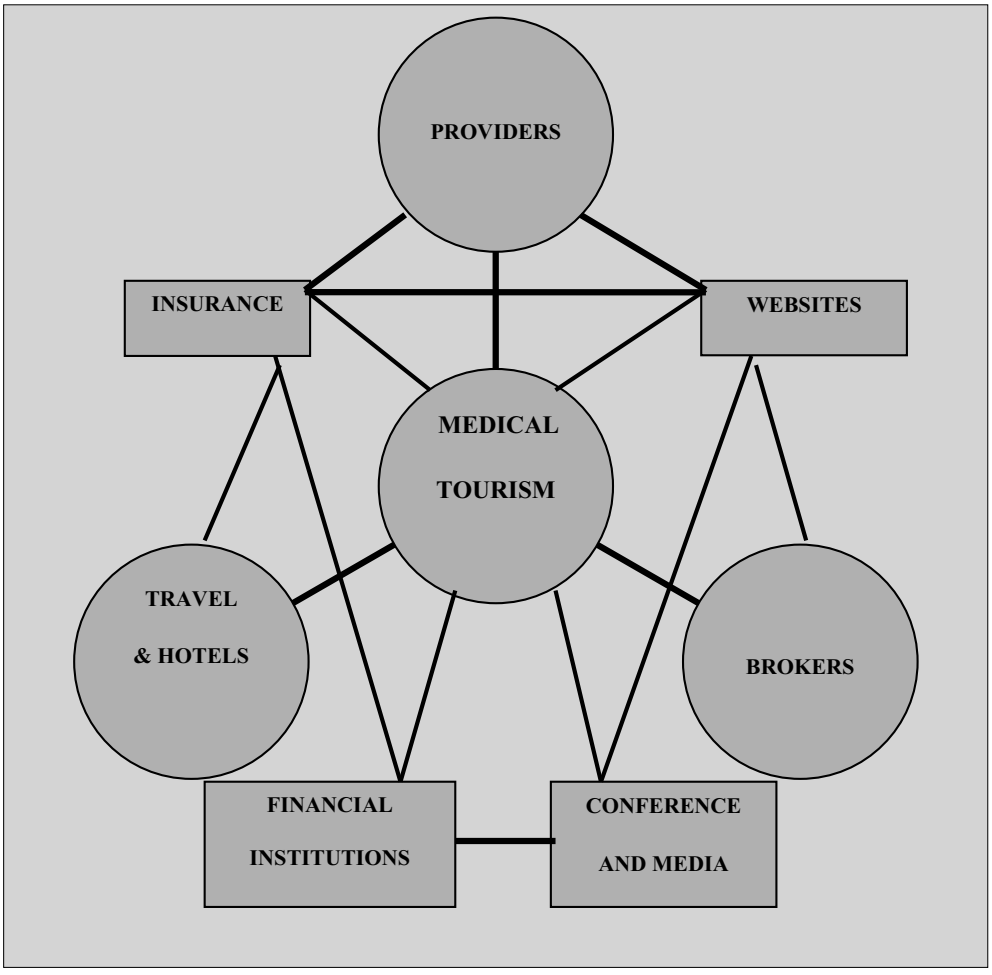
The establishment of numerous educational opportunities in this direction is a clear response to the rapidly growing demand for services related to medical tourism and its comprehensive services.

Trends in medical tourism result mainly from the increase in awareness about health and changing lifestyle. It is expected that in the near future, medical tourism will increase. According to forecasts by Deloitte regarding trips of Americans in search of medical care in other countries, in 2017 more than 15 million Americans will use this possibility, so it is over 15 times more than in 2007.[Lunt, at al., 2011]

Medical tourism structure as a network

Medical tourism is an emerging global industry with a range of key stakeholders with commercial interests including brokers, health care providers, insurance agencies, website providers and conference and media services. These commercial interests are summarised in Picture 1.

Picture 1. Elements of medical tourism as a network



Source: prepared by the author.

A key driver in the medical tourism phenomenon is the technological platform provided by the internet for consumers to access healthcare information and advertising from anywhere in the world. [Carrera, Lunt, 2010] The Internet offers also provide vital new avenues for marketing to reach into non-domestic markets. Commercialization is at the heart of the growth in medical tourism and in some part this is due to the availability of web-based resources to provide consumers with information, advertisements and market destinations, and to connect consumers with an array of healthcare providers and brokers. Research [Lunt et al., 2010] suggests the following typology of websites:

- portals (focused on provider and treatment information)
- media sites

- consumer-driven sites
- commerce-related sites (providing ancillary services and information)
- professional contributions

First and foremost, the scope of such sites is to introduce and promote services to the consumer. The main services of the sites can be devided into five main functions: as a gateway to medical and surgical information, connectivity to related health services, the assessment and/or promotion of services, commerciality and opportunity for communication [Lunt et al., 2010]. The Internet offers a range of functionalities and formats including discussion forums, file sharing, posting information and sharing experience, member only pages, advertisements and online tours. The Internet also facilitates decisions regarding the purchase of treatments.

There has been a steady rise in the number of companies and consultancies offering brokerage arrangements for services and providing web-based information for prospective patients about available services and choices, which can be attributed to the transaction costs associated with medical tourism, where individuals have to assemble their own information and negotiate any treatment.

Typically, brokers and their web-sites tailor surgical packages to individual requirements: flights, treatment, hotel, and recuperation [Whittaker, 2008], [Cormany, Baloglu, 2010], [Reddy, Qadeer, 2010], [Lunt and Carrera, 2011]. *Brokers may specialize in particular target markets or procedures (treatments such as dentistry, or cosmetic surgery), or destination countries (e.g. Poland, Hungary)*. [Lunt et al., 2010]

A market in travel insurance for medical tourists is emerging. Purchasing adequate specialist travel health insurance may be problematic, especially if the intending medical tourist has significant preexisting health problems prior to travelling. Traditional insurance policies for travel and accommodation would exclude those individuals travelling for the purposes of planned medical tourism.

Insurance products have been developed to cover medical tourists for such contingencies when travelling for surgery. Insurance products have also emerged to go beyond insuring travel and loss, and which seek to cover the costs of further treatments that may be required as a result of complications and dissatisfaction following surgery abroad. It is extremely unwise to travel outside of one's home country without this type of insurance unless a deal has been negotiated with the provider hospital that they will cover all possible eventualities.

Within the wide picture of medical tourism there is a diversity of participating providers in "cottage industries" and transnational enterprises. [Ackerman 2010] Providers are primarily from the private sector but are also drawn from some public sectors (e.g. Singapore and within Cuba).

Relatively small clinical providers may include solo practices or dual partnerships, offering a full range of treatments. At the other end of the scale are extremely large medical tourism facilities (e.g. Bumrungrad in Thailand, Raffles in Singapore, Yonsei Severance Hospital in South Korea) where clinical specialism is the order of the day.

Hospitals may be part of large corporations (the Apollo Group for example has 50 hospitals within and outside India), and ownership itself may lie primarily in the higher income countries from where patients mostly originate. The important role of global medical tourism industry play medical clusters, situated in many locations of the world and global competition among strong medical brand clusters. [Lunt et al., 2010]

Medical tourism clusters

The cluster concept has become a subject of intense research studies and strategic management analysis starting with the study conducted by M.E. Porter [Porter, 1990] regarding the competitive advantage of nations.

Clusters are an economic phenomenon that is placed in a competitive context in which a set of mutually complementing organizations collaborate to gain synergy effect and multidimensional competitive advantages.

In many cluster operating organizations, companies, institutions perform on network base but can create its own different business models.

Companies or corporations simultaneously collaborate and compete to gain different strategic goals but should operate and implement activities in the same business network logic. Although there are globally recognized clusters examples such wine industry in California, information technology in "Silicon Valley" and "Aviation Valley" in Poland, research must provide models that may be applied to a lower regional level so that economy policy makers and decidents can identify or help start clusters initiatives. In the USA clusters initiatives are born at entrepreneurs level, driven by created innovative technology and visions of industry development. In the European Union cluster initiatives are emerging at upper level and are undertaken, or aren't by local entrepreneurs.

The later studies conducted by Porter [Porter, 1990] and Krugman [Krugman, 1991] highlighted and added new dimensions to Marshall's observations. Despite criticisms regarding the generality of the approach, the widely accepted descriptions regarding clusters are:

- *Geographic concentrations of interconnected companies and institutions in the particular field*" [Porter, 1998] *Clusters are not seen as fixed flows of goods and services, but rather as dynamic arrangements based on knowledge creation, increasing returns and innovation in a broad sense.*[Krugman, 1991]

Porter redefined the cluster concept in a new analysis, concentrating on the type of relations that exist between cluster members:

- *a geographically proximate group of inter-connected companies and associated institutions in a particular field, linked by commonalities and complementarities* (Porter, 2000), and defining its boundaries that can -*range from a single city or state to a country or even a group of neighboring countries* [Porter, 2000].

Morosini gives another definition by describing the cluster as:

- *socioeconomic entity characterized by a social community of people and a population of economic agents localized in close proximity in a specific geographic region*. [Morosini, 2004].

Based on these descriptions, the concept of cluster can be characterized by: regional economic activity located at all levels: community, geographic area, global; it is limited to a specific industry; includes both vertical links as supplier-manufacture-dealer-customer chain or horizontal production links as in sectors of the same industry; companies have identical or interrelated business areas;

firms are in competition but through specialization contribute to the cluster development; firms proximity generates social and trust relations; a common infrastructure used in innovation by rapid transfer of knowledge and because of the support offered by universities and research centers.

Despite theoretical or practical analysis of clusters has not yet defined a generic model that can explain the success and decline of some clusters, the advantages of this phenomenon is recognized and is one of the main reasons for the current focus on clusters. [Boja 2011].

Cluster should be a combination of following features:

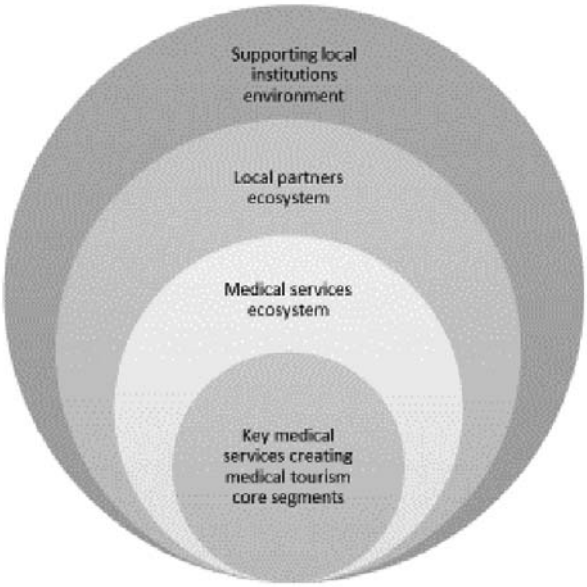
- a significant local market for products and services; a high concentration of firms generating an increased market and hence more opportunities for reaching to more customers;
- decreased transport costs and supply chains;
- more facile access to resources;
- opportunities for new companies that see new scenarios to extend in this environment;
- an offer of higher degree of specialization in products and services;
- more competitive environment that provides better motivation;
- greater cooperation between cluster members; the proximity increases confidence between firms and facilitates communication;
- a concentration of companies with activities in the same area creating a workforce pool that has experience and it is specialized in their field;

better access to skilled employees;

Economic development based on cluster models represents a policy adopted by many economies that can, theoretically, bring multiple benefits in terms of regional development, competitiveness in an industry. Also it can generate an economic environment that will adapt more easily to events such as economic crisis or other economic and social transformation.

Although existing cluster analysis highlighted its advantages, the interconnection of factors and their effect on the cluster, the economic theory has not yet provided a model that allows both the analysis and the definition of a process for implementing a successful cluster.

Picture 2. The structure of medical tourism claster



Source: prepared by the author.

A particular business ecosystems should be in the state of dynamic symbiosis.

In the typical medical tourism cluster, the following elements of wide business landscape could be mentioned:

- supporting local institution environment – transport infrastructure, airports, seaports, local touristic attractions, theaters, cinemas, museums, golf clubs and others, marinas, local authorities influencing development of a city, other cultural and entertainment institutions.
- local partners ecosystem – travel operators, touristic agencies, insurance agencies, brokers, financial institutions, hotels, restaurants, media and touristic websides, organizations engaged in fairs or conferences and other local events creators.
- medical services ecosystem – medical enterprises, innovative companies from creative industries, medical R&D institution, universities, medical schools and other related medical institutions, supporting services in this field, or example – SPA resorts.
- core market segments – based on key medical specializations, recognized in global medical industry, which could be a platform for offering unique medical services, focused on specific market segments in global medical tourism.

All spheres of medical tourism cluster should be analyzed from static and dynamic approach in terms of its cohesion, adaptation and delivered values for all participants of the network.

Business models in medical tourism clusters

One of the drivers for medical tourism is price because treatments may often be available locally within the private sector, but at a greater cost. There are arguments that some medical systems are inefficient and face restrictive barriers of entry.

A development such as medical tourism can potentially exert competitive pressure on systems importing health care and help drive down the costs and prices offered in domestic systems. Medical tourism may encourage economies to maximize their comparative advantage in labor costs, technology and/or capacity.

The digital economy has provided firms with the potential to experiment with novel forms of value creation mechanisms, which are networked in the sense that value is created in concept of a business model and a set of partners, for multiple users. This redefinition of value creation has attracted the attention of management researches, who have employed the concept of the business model in their attempts to explain value creation in networked markets [Zott, Amit, 2009].

They conceptualize a business model as a *set of capabilities that is configured to enable value creation consistent with either economic or social strategic objectives* [Zott, Amit, 2007: 53].

Thus, value creation can refer to different forms of value (such as social or economic). Value creation mechanisms often go beyond the value that can be created through Schumpeterian theory of innovation, the (re)configuration of the value chain, the formation of strategic networks among firms, or the exploitation of firms' specific core competencies.

As Amit and Zott observe, the locus of value creation, and thus the appropriate unit of analysis for research interested in value creation, spans firms' and industries' boundaries. The authors conclude that prior frameworks used in isolation cannot sufficiently address questions about total value creation. Based on a sample of 150 firms, they propose four potential sources of value creation through business models: (1) novelty, (2) lock-in, (3) complementarities, and (4) efficiency. These value drivers can be mutually reinforcing; that is, the presence of each value driver can enhance the effectiveness of any other value driver. Value can also be created through revolutionary business models.[Amit, Zott, 2001]. According to Hamel, to thrive in the "age of revolution," companies must develop new business models – in which both value creation and value capture occur in a value network -which can include suppliers, partners, distribution channels, and coalitions that extend the company's resources [Hamel 2000]

Some literature on the business model tends to concentrate on the firm's activities with its network of partners, scholars increasingly are acknowledging that firms do not execute their business models in a competitive vacuum and that firms can compete through their business models which may be critical from competitive advantage point of view. Business models can play a central role in explaining firm performance. Afuah and Tucci propose the business model as a unifying construct for explaining competitive advantage and firm performance and define it as *the method by which a firm builds*

and uses its resources to offer its customer better value and to make money in doing so [Afuah, Tucci, 2001: 3]. Scholars focuses on firms' profitability and introduces a strategic framework in which the business model is conceptualized by means of a set of components that corresponds to the determinants of firm profitability.

Zott and Amit have analyzed the performance implications of business model design in entrepreneurial firms. They refer to the business model design as the design of a focal firm's set of boundary-spanning transactions with external parties. In their view, the essence of the association between business model design and focal firm performance can be analyzed by looking at two distinct effects: the total value creation potential of the business model design and the focal firm's ability to appropriate that value. They identify two design themes around which the business model can be orchestrated: efficiency and novelty. In their empirical work, Zott and Amit see the business model as the independent variable, and they link it to firm performance, moderated by the environment. [Zott, Amit, 2007: 53].

Similarly, acknowledge the possible contingent effect of the business model in mediating between product market strategy and firm performance. They root their study in contingency theory, and they ask, How do the firm's business model and product market strategy interact to impact the firm performance? They find that:

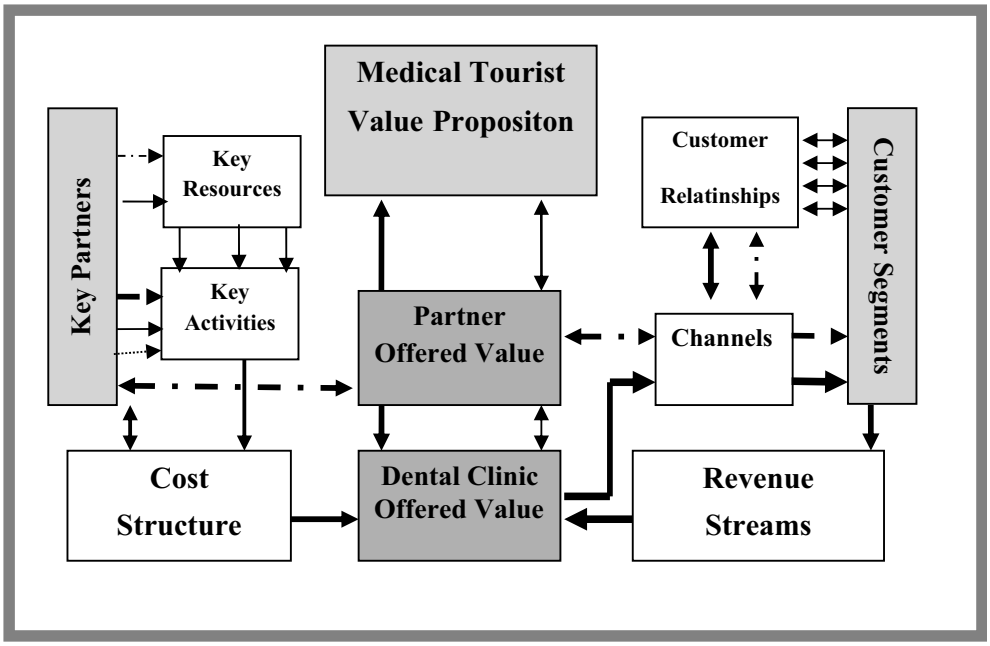
- business models that emphasize novelty and are coupled with either differentiation or cost leadership can have a positive impact on the firm's performance;
- novelty-centered business models together with early entry into a market have a positive effect on performance.

The business model extends central ideas in business strategy and its associated theoretical traditions. Researchers contend that the business model can be a source of competitive advantage that is distinct from the firm's product market position Firms that address the same customer need and pursue similar product market strategies can do so with very different business models; business model design and product market strategy are complements, not substitutes. Two main differentiating factors seem to have captured the attention of researchers: the essential details of a firm's value proposition for its various stakeholders as well as the activity system the firm uses to create and deliver value to its customers [Zott, Amit, Massa, 2010].

Creating business models which operate in clusters or networks, strategists and managers should think in three categories: overall customer value proposition, partner offered / delivered value and enterprise offered / delivered value. Traditional concept of business model have to be modified in terms of new business landscape changes.

Picture 3. presents modified business model concept, created by Ostervalder and Pigneur [Osterwalder, Pigneur, 2010].

Picture 3. Relational business model in dental tourism – modifications of the Osterwalder concept.



Source: prepared by the author.

Description of the modified business model elements are presented below**:**

- Medical Tourist Value Proposition – a value proposition create value for specific market segment through a distinct mix of services catering by an enterprise and our partners to that segment's needs. (What value we deliver to the customer? Which one of our customer's problems are we helping? Which one of our clients' needs are satisfying by our partner?):
- Partner Offered Value / Partner Delivered Value – a value offered and delivered by a partner involved in our business model.(What value do our partner deliver to us and our clients?)
- Dental Clinic Offered / Delivered Value – a value offered and delivered by our clinic to the client as a set of dental services.(What value our clinic deliver to our dental clients? Which consumer needs and expectations are we satisfying?)
- Customer Segments – homogeneous groups of clients, with specific needs and expectation. (For whom are we creating value? Who are our most valuable clients?)
- Channels – integrated ways and procedures in which offered value is delivered to Customer Segments. (Which channels are most cost-efficient?)
- Customer Relationship – types of relations with customer segments and its importance for the key activities evolution and change of revenues streams. (How are they integrated with the rest of our business model?)

- Revenue Streams – all types of sources which generating cash streams and contribute to overall revenues. (For what value are our customers really willing to pay? For what do they currently pay?)
- Key Partnership – the most important partners for business model architecture, it's barriers of imitation and scope of activities. (Which key resources are we acquiring from partners? Which key activities do partners perform?)
- Key Activities – crucial activities in customer value creation and also building, maintaining or developing channels and customer relationship as well. (What key activities creating value proposition are required?)
- Key Resources – resources which are crucial for building bariers of imitation and mobility. They have a great influence on creating multidimensional competitive advantage. Key resources can be phisical, financial, intellectual or human. It can be owned or leased by the enterprise or required from key partners.(What key resources creating value proposition are unconditionally required?)
- Cost Structure – costs of key resources creation, exploitation, configuration and integration and also costs of key activities undertaken on the market. (Which are the most important costs inherent in our business model?)

Despite the conceptual differences between business models and certain aspects of an enterprise strategy, researchers have emphasized that the business model can play an important role in a firm's strategy. The he business model explains how the activities of the enterprise work together to execute its strategy, thus bridging strategy formulation and implementation. According to Teece, the business model reflects a *hypothesis about what customers want, and how an enterprise can best meet those needs, and get paid for doing so* [Teece, 2007: 1329].

Comparative analysis of dental tourism ecosystems – "Budapest Health Cluster" versus "Health Valley" in Gdańsk

Trends in medical tourism result mainly from the increase in awareness about health and change of lifestyle. It is expected that in the near future, medical tourism will increase. Further development of medical tourism is affected by: reform of health care systems providing subsidies for the performance of certain services outside the country, lower prices of medical services in other countries, opportunity to improve the hospitals profitability and occupancy of host countries, underdeveloped medical care in some countries, long waiting lists for surgery. These are general factors that contribute positively to the development of medical tourism in the world.

In case of Poland, however, the steady rising cost of health care in the European Union, seeking greater savings by citizens of other countries as a result of the effects of the economic crisis and the convenient location of Poland in the neighborhood or vicinity of developed countries with a clearly aging society must be also mentioned in sector analysis.[Religioni, Religioni 2015]

As a part of the medical tourism developing and competing entities, there should be expected development of unique services, such as: dissemination of natural medicine, increasing popularity of ecological products and ecological approach to the medical business, development of medical tourism based on the holistic model of health, development of gastro-tourism, education and promotion of healthy nutrition. Medical tourism trends in Poland should develop by providing health services in more flexible way, for example in different locations indicated by the patient – at home, hotel, workplace etc.[Religioni, Religioni 2015]

The Hungarian medical tourism supply is highly concentrated both in space and in terms of treatments. 90% of services may be divided into the following four main segments. the first one is Budapest. The capital plays the key role concerning the volume and the diversity of the product. 40% of the Hungarian medical tourism supply can be found in the capital city. Most dermatologists, plastic surgeons, gynecologists and dentists who treat foreigners are concentrated in Budapest. [Michalkoi et al., 2012].

The website analysis indicates that medical tourism supply in Budapest is predominantly based on cheap and quick air transportation (i.e. on accessibility ensured by budget airlines), and several surgeries and clinics have representative agencies in other European capitals (e.g. in Dublin or in London), which is a significant confidence factor for customers. With small private practices being in minority, the supply of Budapest mostly consists of modern clinics with first-rate facilities employing highly qualified staff with good foreign language skills. In some cases, these clinics are established solely to satisfy the needs of foreign patients, i.e. medical tourists.[Michalkói et al., 2012].

Medical tourism in Gdańsk is based on two medical clusters which are operating as separated networks – *Baltic Medical Tourism Cluster* and *Pomeranian Medical Valley.* Each of network include following institutions: municipal institutions, local authorities, medical clinics and hospitals, universities and scientific institutions, resorts and SPA, hotels and others complementary medicine enterprises.

Cluster participants could observe lack of activities coordination among network partners, low integration of partners' business models, low level of network thinking and coherent strategy. In this circumstances synergy effect not exist.

Table 1 presents results of dental cluster comparative analysis in Hungarian and Polish selected locations.

Table 1. Comparative analysis of dental ecosystems in Budapest and Gdansk.

Analysis aspects	Dental ecosystem at Budapest	Dental ecosystem at Gdansk
Cluster perspective		
Government policy	Hungary as a European capital of dental services	Poland as a European capital of .....
City infrastructure	Large tourism infrastructure in Capital City and its surroundings	Limited tourism infractructure in TriCity
Localization	Excellent localization in the center of Europe	Good localization for Northern and Central Europe
City attractiveness	High	High
Medical tourism ecosystem	Created and efficiently managed	Exists as a element of local Smart City development strategy
Supporting institution	Large numbers of supporting institutions a result of government policy	Moderate numbers of supporting institutions as a result of lack of government policy
Business model perspective		
Quality of services versus costs in other countries	Competitive	Competitive
Medical brand influence	Recognized in Europe	Weak recognition in Europe
Scope of biomedicine services	Broad	Limited
Partners ecosystem	In mature state in life cycle	In embrional state in life cycle
Integration of partners business models	Relatively integrated system	Low level of integration
Level of network thinking in local institutions	Moderate	Low

Source: prepared by the author.

The information obtained from websites indicate that Hungarian medical tourism has an opportunity for significant further growth as long as the companies are able to preserve a favorable price-value ratio and the current key competitive advantage. At the moment, Hungary is a leading market in Europe in the field of dental tourism, but further development is also expected in the segments of plastic surgery and beauty treatments, as a result of high quality procedures, affordable prices, qualified staff as well as improving marketing communication. However, competition from the neighboring countries has also increased in the last decade, both in terms of quantity and quality.[Michalkoi et al., 2012]

Consequently, Hungary needs to move beyond the more or less spontaneous development path of dental tourism: although it has proved to be successful, and the international trends of medical tourism imply further opportunities for growth in the future, in an increasingly competitive environment. Hungary can only realize its full potential,

providing its natural resources which are developed in a consensus-based national policy framework. [Michàlkoi et al., 2012]

Conclusion

1. Medical tourism is a rapidly growing global market in which patients travel to neighboring or distant countries in order to receive medical care as a part of global trend of combining treatment with relaxation, sightseeing and many other services.
2. Health tourism as a whole has significant advantages not only for patients, but also for business entities and the government. The main reason for taking activities aimed at promoting health services in Poland an Hungary, taking by medical centers as well as government, is a possibility to obtain some additional European Union funds for cluster initiatives. In the view of free movement of people across the European Union it is predicted that this industry will undoubtedly continue to grow.
3. Dental clusters in Hungary and Poland are definitely different. Dental cluster in Budapest is in mature phase. Dental cluster in Gdańsk is in embrional phase in life cycle but it has extraordinary potential to growth and development. The key role in its development plays Vivadental – European Implant and Aesthetics Center. This enterprise is leading innovative firm in Polish and European dental implantology. For many reasons Vivadental Clinic can be the orchestrator of Gdansk dental cluster.
4. Business models in dental clusters should be integrated with business models of partners for reach optimal level of whole network cohesion and flexibility. Partners' coexistence and symbiosis is natural condition for building competitive advantage of the network and its incremental development. Government policy and local administration institutions should support entrepreneurship initiatives, creating local business environment more friendly for development of dental tourism in Poland.

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Reporting sustainable development in the TSL industry

The purpose of the presented paper is a review of standards, under which companies from the TSL industry may report non-financial data. Reporting on sustainable development consists of measuring, disclosing and incurring liability towards internal and external stakeholders for performance and efficiency in addressing these issues. The choice of industry is not accidental. Transport consumes 30% of global energy and transport emissions account for 20 – 25% of global carbon dioxide emissions. Therefore, it is essential to undertake comprehensive and transparent actions for sustainable development in logistics companies.

The idea of sustainable development

Sustainable development is an idea in which modern generations meet their needs without sacrificing the opportunity of future generations to meet their needs as well.[1] The concept of sustainable development emerged as a response to growing concern about the potential of the earth's ecosystem to lift the pressure of human activity on the environment, resulting primarily in the gradual depletion of natural resources and the progressive degradation of the natural environment. This is a process involving social and economic change, in which the integration of political, economic and social activities in the field of the equilibrium of nature and the sustainability of basic natural processes is carried out in order to balance the opportunities for the particular societies and their citizens of contemporary and future generations.[2]

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[1] Bula P., Żak A. *Dyfuzja wspólnych działań w kierunku idei Społecznej Odpowiedzialności Biznesu – CSR 3,0+* [w:] A. Sopińska, P. Wachowiak (red.), Wyzwania współczesnego zarządzania strategicznego, Oficyna Wydawnicza SGH, Warszawa 2017, p. 406

[2] Roszkowska P. *Rewolucja w raportowaniu biznesowym. Interesariusze, konkurencyjność, społeczna odpowiedzialność,* Wyd. Difin, Warszawa 2011, p.26

It is a process involving social and economic change, in which the integration of political, economic and social activities in the field of the equilibrium of nature and the sustainability of basic natural processes is carried out in order to balance the opportunities for the particular societies and their citizens of contemporary and future generations. This concept is derived from the interest in the impact of human activities on the environment, resulting primarily in the gradual depletion of natural resources and the progressive degradation of the natural environment.

There are three pillars of sustainable development introduced by John Elkington in 1994 as the *triple bottom line* concept:

– people, the social equity bottom line,
– planet, the environmental bottom line,
– profit, the economic bottom line,[3]

which for the purpose of the below picture, will be called: economic growth, environmental stewardship and social inclusion. They are spread across all sectors of development, such as infrastructure cities, agriculture, production, energy and water development and use, transportation, and many others. SD is aimed at preventing the imbalance between economic growth and social development and between socioeconomic development and the natural environment. It is not only a matter of countries or cities, but also a great concern of international organizations, local organizations an companies of all sizes. Sustainability is therefore one of basic issues of the EU's economic strategy and a starting point for many business strategies. The biggest dilemma is not whether to embrace sustainable development, but how to do it.

Picture 1. Basic concept of sustainable development

Source: *prepared by the authors.*

[3] Elkington J., *Cannibals with forks : the triple bottom line of 21. century business,* Oxford: Capstone, 1997.

The idea of sustainability and social responsibility were brought to Poland by international companies, which when entering Polish market, already had well developed CSR programs. Those companies are still most aware of sustainability issues and most socially aware and active groups. Substantial budgets for CSR activities make them the leaders of sustainability in Poland, a country in which CSR is still perceived by most as a remedy for company's marketing problems, a tool that will help the company create common value.[4]

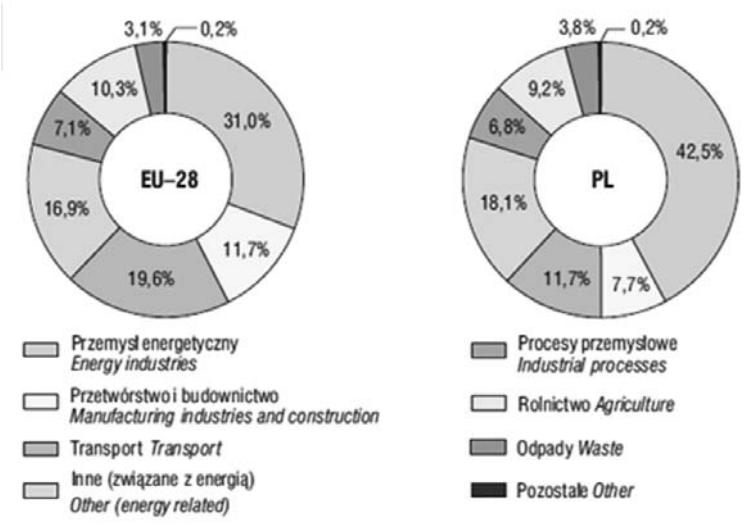
Changes in the modern society result in overexploitation of the environment, which has reached a disturbing level. Social matters, evolvement of technology, growing population, spreading urbanization, disproportions in division of wealth are only a few causes of progressive degradation, which manifests itself , among others, in rapid increase of pollutant emissions, poorer human health quality, climate changes, deforestation, extinction of flora and fauna species. Ecological impact is now a serious research matter, and can lead to global catastrophe if humanity will not solve the problems of its negative environmental impact.

In Poland environmental responsibility has become a topic of a broad discussion. Shrinking natural resources, air, water and soil pollution, alternative sources of energy are becoming vast problems. In order to meet high ecological standards, companies should pay more attention to their ecological impact throughout the whole supply chain. That is why, especially producers and TSL companies should pay great attention to contamination they cause and resources they acquire.

TSL industry is one of the most harmful sectors to the environment and human health. Transport accounts for one fifth of EU greenhouse gas emissions (as seen on Picture 2), is a source of air pollution and noise pollution and leads to habitat fragmentation. Transport has the highest share of emissions of harmful nitrogen oxides harmful to human health and the environment. In addition, road transport is one of the main sources of noise pollution in Europe. These are the reasons why the authors decided to concentrate their studies on TSL industry, consisting of transport, shipping and logistic companies.

[4] Guja D., Sady M., The Role of Logistics Social Responsibility in Gaining Competitive Advantage in Business, w: Management Science in Transition Period in Moldova and Poland. Responsible Use or Resources, Kraków-Kiszyniów 2014, p. 70.

Picture 2. Emission of greenhouse gases of sectors



Source: Główny Urząd Statystyczny, Polska w Unii Europejskiej 2015 – folder, http://stat.gov.pl/obszary-tematyczne/inne-opracowania/inne-opracowania-zbiorcze/polska-w-unii-europejskiej-2015-folder,16,8.html# .

Because of its great ecological impact, TSL sector implemented a concept of Logistic Social Responsibility, showing its awareness of environmental issues. Defining measurements for this impact was the first step in the process of creating solutions to minimize harmful effect and growing ecological awareness of TSL sector companies, as well as their customers on both, domestic and international markets. The need to adjust to those standards is a motivation for TSL sector participants to be more aware and active in the field of LSR. This concept, based on *triple bottom line* idea, consists of three pillars:

– environment (way of material acquiring, energy- consumption, pollution, packaging, transport, recycling, fuel quality, high technologies, technical condition of cars, ecological solutions, chemicals usage, efficiency etc.),
– society (human rights, labor law, work-life balance, products' safety, reliable information, relations with local community, customer relations),
– economy (fair competition, repayment of liabilities, clear communication in supply chain, solvency, safe and economic driving, usage of warehouse space).

Regarding the logistic industry and supply chain management, balanced development may be brought down to the following components:

– the reduction in packaging and the introduction of a structure for goods facilitating re-use (recycling);

- the reduction in costs of health protection and ensuring safety, costs of fluctuations and recruitment due to better protection for storage and transport processes as well as the improvement of working conditions;
- the reduction in labor costs as a result of a higher level of motivation and efficiency as well as lower absences due to the improvement of working conditions;
- lower costs, shorter periods of waiting for deliveries, the improvement in product quality as well as lower costs of waste resulting from the implementation of standards ISO 14000 as well as a structure of goods facilitating dismantling and re-use;
- the improvement of the company's reputation which may increase its attractiveness for customers and suppliers. [5]

Sustainable development reporting standards.

Main element of actions connected with sustainable development are challenges tackling environmental degradation, climatic changes, violations of human and employees' rights as well as protection of natural resources that are confronted by the companies Advancing globalization, the operations of OECD, UN, ILO, growth of the Internet, resulting in bigger transparency of actions, or examples of companies, that succeeded after engaging in projects connected with responsible business, all this led to creation and popularization of standards of responsible business[6]. Nowadays, companies administer a wide range of tools that is growing with each year: norms, standards and codes, that are making management and implementation of corporate social responsibility into strategy of the company much easier. Sample instruments helping with non-financial reports in organizations are: ISO 26000, AA 1000, SA 8000, Global Reporting Initiative (the newest standard is GRI G4) or Global Compact principles.

International standards are describing issues from global perspective, not including concerns for particular countries or regions, in order to be useful for various companies in multiple countries. This is the reason why, when preparing to writing the report, companies should take into consideration not only global norms but also results of research conducted among wide group of stakeholders in Poland. This approach will allow them to refer to the specifics of the domestic market.

A guide for organizations containing information on how to adapt the principles of social and environmental responsibility is developed in 2010 ISO 26000 norm (Guidance on social responsibility)[7]. It defines social responsibility as an organization's responsibility for decision making and actions taken upon society and environment. It is acting in a transparent and ethical way in key areas such as: corporate governance, hu-

[5] Op.cit., p. 74.

[6] Warto mieć standardy czyli Kodeks Odpowiedzialnego Biznesu oraz podręcznik do jego wdrażania, group work, Pracodawcy Rzeczpospolitej Polskiej, 2012, p.18.

[7] See http://www.odpowiedzialnafirma.pl/o-csr/iso-26000

man rights, labor law, environment, honest operational practices, consumer issues and social engagement as well as development of local community.

It systematizes the knowledge on broadly understood corporate social responsibility that is closely connected to the concept of sustainable development, because its aim should be to contribute to this idea. The concept of CSR is presented as an idea that supports following the principles of sustainable development by companies, which also directs the world of business towards implementation of sustainable development policy and allows improvement in functioning of the organization in changing environment. It sets direction for actions of the companies, that are conscious about their social and environmental influence in strengthening relationships with various groups of stakeholders as well as brings additional possibilities when it comes to competitive position.

ISO 26000 is designated for various types of organizations; not only strictly business ones but also for public sector or non-governmental organizations, but it has to be noted, that exchanging, changing or modifying responsibilities of state authorities[8], independently of the size and location of the business, is not its aim.

GRI (Global Reporting Initiative) is an international pattern of reporting for responsible business and sustainable development of companies[9]. *These are guidelines used in the reporting for economic, ethical and ecological areas of the organization, so called sustainability reports. This standard has been designed for organizations of any size, sector and localization. It enables flexible adjustment to the needs of reporting organization. There are many useful materials for companies: guideline manuals, learning materials and special brochures dedicated to certain industries. They include reporting guidelines, present the process and offer over 80 versatile indicators. Guidelines are also in line with other important standards and initiatives such as UN Global Compact or ISO 26000.*

In 2013 GRI published the newest and the fullest guidelines for social reporting, G4, that are currently the most popular guidelines of non-financial reporting. This standard widens the scope of social reporting in the field of engaging stakeholders in the process of creating the report, highlighting the role of the value chain and selecting important contents, that should be included in the report.

According to the first research on non-financial reporting conducted in Poland, "Raportowanie niefinansowe w Polsce 2016" (Non-financial reporting in Poland 2016) [10] that describes the situation of Polish reporting in the past 5 years (between 2012 and 2016), 78% of all reports were prepared in accordance with Global Reporting Initiative's guidelines. In the whole period of the analysis (2005–2016) 67% of the reports

[8] I. Ślęzak – Gładzik, *Społeczna odpowiedzialność w ujęciu normy międzynarodowej ISO 26000 Guidance on Social Responsibility*, „Modern Management Review", vol. XVIII, 20 (4/2013).

[9] See www.globalreporting.org; *Kodeks Odpowiedzialnego Biznesu*, op.cit; *Raportowanie niefinansowe. Poradnik dla raportujących*, Zespół ds. Społecznej Odpowiedzialności Przedsiębiorstw, praca zbiorowa edited by L. Anam i J. Kacprzak, Ministerstwo Gospodarki, Warszawa 2015.

[10] http://www.csrinfo.org/10-raportowania-niefinansowego-polsce/

were prepared according to these standards, which puts Poland above the global average. As reported by GRI, 60% of entities reporting globally use their guidelines.

Due to limited capacity of this article, only two standards were described above – ISO 26000, which organizes the knowledge on broadly understood corporate social responsibility and the newest standard of reporting that is in line with the guidelines of Global Reporting Initiative (GRI G4), which is currently the most popular pattern for social reporting. G4 guidelines are universal and are suitable for every organization (small or big) all over the world. Other selected standards used by companies to prepare non-financial report are presented in Table 1.

Table 1. Review of selected norms and standards used for non-financial reporting.

Name of the norm / standard	Description	Scope / advantages of usage
Global Compact	initiative on corporate responsibility and sustainable development	based on voluntary participation of companies, creates platform for dialogue and learning; tells businesses to use 10 basic principles of human rights, labor law, environment protection and counteracting corruption in its operations while promoting CSR.
OECD's guidelines for multinational companies	responsible actions of multinational corporations	guidelines are not a reporting standard; companies should obey national laws and rules of sustainable development as well as social responsibility in the following areas: disclosure of information, human rights, employment and employee relationships, natural environment, fighting corruption, consumer interests, science and technology, competition and taxes
AA1000	standard on social dialogue	series of international standards supporting organizations in stakeholders' management and ongoing dialogue; can be used for strategic analysis of entities and all organizations, for external assessment of the company of any size, structure or localization, in the area of social and ethical responsibility as well as self-improvement
SA8000	standard regarding employee matters	supports companies in developing, maintaining and applying socially acceptable practice in the workplace; includes such matters as: child labor, forced labor, occupational health and safety, freedom of association, collective agreements, disciplinary practice, working hours, compensation and management systems; is a proof of engagement of the company in matters of social responsibility and ethical treatment of employees in line with global standards
UN PRI, Principles for Responsible Investment	guidelines for using ESG factors when making decisions about infrastructural investments	principles of responsible investing, initiated by UN Secretary-General Kofi Annan in 2006; guidelines help investors and shareholders with understanding connections between their tasks and sustainable development.

CERES, Coalition for Environmentally Responsible Economies	principles on environmental protection	principles on environmental protection, management of the influence on the environment, minimizing risks and reliable communication on environmental influence and reporting in environmental matters
Carbon Disclosure Project (CDP)	reporting system for emissions influencing climatic changes	includes indicators divided into 4 programs: climatic changes, water usage, deforestation and supply chains; independent reporting in each of the programs is possible; the most recognizable program is the one about climatic changes – comprising data base on emissions and actions taken in order to reduce negative emission in over 5000 companies all over the world.
ISO 14000 series	environmental management	norms concerning environmental management (ISO 14001 and 14004), guidelines for environmental audit (ISO 14010, 14011), rules for eco-labeling and environmental product declarations (ISO 14020, 14021, 14024), assessment of the effects of environmental activity (ISO 14031, ISO/TR 14032), analysis of life cycle of a product (ISO 14040, 14041, 14042, 14043, ISO/TR 14048, ISO/TR 14049).
ISO 14067	carbon footprint	includes requirements and guidelines for measuring carbon footprint in the product and revealing results of this research.
ISO 20121	sustainable events management	includes a list of requirements and guidelines enabling organization of events in accordance with sustainable development, may be used during preparation of small, local events, trainings, business meetings, as well as big mass events such as festivals, sport events or political summits of world leaders.

Source: own elaboration based on: Kodeks Odpowiedzialnego Biznesu, op. cit., Raportowanie niefinansowe. Poradnik dla raportujących, op. cit.; Jonker J., Rudnicka A., Reichel J., Nowe horyzonty. Przewodnik po społecznej odpowiedzialności i rozwoju zrównoważonym, Centrum Strategii i Rozwoju Impact, Łódź 2011, p. 82, B. Rok, Więcej niż zysk, czyli odpowiedzialny biznes – programy, strategie, standardy, Warszawa 2001, pp. 237-240, Nakonieczna J., Społeczna odpowiedzialność przedsiębiorstw międzynarodowych, Difin, Warszawa 2008, pp. 114-115, https://www.mr.gov.pl/media/15751/pracodawcy_rp_norma_sa_8000.pdf; Sady M., Guja D., Social aspects of corporate responsibility – universal guidelines; Critical issues in global business: lesson from the past, contemporary concerns and future trends; edited by: E. Kaynak, T.D. Harcar, International Management Development Research Yearbook, 2010, pp. 1-8, P. Oczyp, Nowy standard wspomagający zarządzanie zrównoważonymi wydarzeniami – ISO 20121, Forum Odpowiedzialnego Biznesu, http://odpowiedzialnybiznes.pl/aktualno%C5%9Bci/nowy-standard-wspomagajacy-zarzadzanie-zrownowazonymi-wydarzeniami-iso-20121/

Integrated reporting – its essence and potential

Sustainable development reporting, i.e. presenting to the stakeholders complex information about organization's economic results, environmental and social concerns as well as effectiveness of the management with the use of description of positive and negative influence of the organization is, among others, a sign of company's accountability[11]. These kind of reports consist mostly of aspects that in the eyes of organizations are crucial to fulfill the needs and expectations of the stakeholders. The way of identifying importance of particular issues and use of appropriate indicators (described further in the article) indicate certain quality of the report. The purpose of sustainable development reports is to show, that in accountable companies, implementation of the principles of sustainable development is an integral part of everyday business.

The reports present compiled information on management and publish results of responsible business. They should define accounting period, include company's policy, goals and strategies as well as a review of basic results in order to compare them later with the results in following years. Reports are a consequence of organization's transparency and openness. For a company where business is operated correctly, being transparent is not an arduous task. Transparency gives the possibility to show, that the company is operating openly and in accordance with any stakeholders' expectations[12]. Importance of the disclosure of non-economic data, such as environmental, social matters and corporate governance, also described as ESG (E – environment; S – social; G – governance), increases due to popularity of the idea of integrated reporting.

According to IIRC (International Integrated Reporting Council) integrated reporting is a process that results in ongoing communication of the organization through integrated report that presents creation of value in time. Integrated report is a method and a tool for organization's communication that shows how its strategy, corporate governance and results should, in the context of external environment, create value in short, medium and long terms[13]. The creation of value by the company should be shown from the perspective of the contribution to actions that have been taken (input) as well as the results of these actions (output) and their effects (outcome).

Integrated report should provide subjects, that are a source of financial capital to the organization, with coherent picture of key elements that influence creation of current and future value of the organization. The value is created through engagement and use of the

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[11] See, Polish version of the Global Reporting Initiative's guidelines GRI G4 published in 2016, https://www.mr.gov.pl/media/21611/G4RSPD_Zasadyraportowaniaiwskazniki.pdf

[12] P. Buła, A. Żak, *Dyfuzja wspólnych działań w kierunku idei społecznej odpowiedzialności biznesu – CSR 3.0+* in: *Wyzwania współczesnego zarządzania strategicznego*, edited by. A. Sopińska, P. Wachowiak, Oficyna Wydawnicza SGH, Szkoła Główna Handlowa w Warszawie, Warszawa 2017, pp. 405 – 425.

[13] Consultation draft of the international <IR> framework, International Integrated Reporting Council qtd. in: A. Stanek – Kowalczyk, Raportowanie zintegrowane – nowy trend, stare wyzwania in: Wspólna odpowiedzialność. Rola raportowania społecznego, edited by N. Ćwik, Forum Odpowiedzialnego Biznesu, Warszawa 2013, pp. 45–46.

potential and relation between capitals (seen as "the warehouse of the value"), available in the organization. Capital is a kind of resource for the organization, that can be used to create value. IIRC lists six types of capitals that should be considered by an organization[14]:

- *financial capital* – available to organization and usable during production of goods or providing services,
- *manufactured capital* – produced material goods, available for organization during production or providing services (e.g. buildings, hardware, infrastructure),
- intellectual capital – immaterial resource, based on knowledge (connected with the brand and reputation of the organization as well as patents, rights and licenses, copyrights, systems, procedures, policies),
- *human capital* – competencies, experience and employees' motivation for development and innovation,
- *social and relationship capital* – organizations and relations in or between societies, stakeholders' groups and other networks as well as the ability to share information for the increase of standards for individuals and communities,
- *natural capital* – renewable and nonrenewable resources and processes used to deliver products or services supporting development of the organization (including, but not limited to: water, ground, minerals, forests, diversity and health of the ecosystems).

The company can focus on some of the capitals, limiting presentation or excluding the rest of the capitals, that are unimportant in the creation of the company's value. Skillful use of certain capitals together with others lets organization create value.

Important part of integrated reporting – despite different goals – is sustainable development reporting, because it presents perspective that should be taken under consideration when identifying key issues, strategic goals and assessment of achieving these goals[15].

Preparation and publishing of the report is a difficult and time-consuming, multiphase process for the company. It includes multiple steps, such as: identification of key stakeholders and key aspects and issues that should be incorporated in the report; building system of indicators, gathering relevant data, planning and setting goals and tasks for the future, their measurements and assessment, taking care of relevant communication effectiveness and publication of the report[16]. Hard work that is put into creation of such report can be rewarded in many potential ways. Amongst the most popular benefits are[17]:

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[14] Ibidem

[15] K. Baj, A. Krakowińska, *GRI G4 – nowy standard raportowania in: Wspólna odpowiedzialność..*, op.cit, p. 85

[16] P. Roszkowska, *Rewolucja w raportowaniu biznesowym. Interesariusze, konkurencyjność, społeczna odpowiedzialność*, Difin, Warszawa 2011, p. 97

[17] See, e.g. P. Roszkowska, op.cit., pp. 91 – 94; M. Greszta, *Raport społeczny: integralny element strategii CSR*, http://www.proto.pl/PR/Images/art_raportspoleczny.pdf; Jak zwiększyć obecność i skuteczność CSR w UE? - conference report, http://csr.pl/article/48/

- increased consumers' trust – income increase,
- stimulation of constructive changes in social and environmental management,
- reduction in emission of pollution, the usage of resources, energy, and as a result, in operating costs,
- education of employees, boost of motivation, increase of work effectiveness, increasing loyalty,
- better company's reputation,
- increase of the competitive advantage in supply chain,
- increased stakeholders' trust,
- tightening relationships with stakeholders,
- ability to better assess chances and identify business dangers resulting from changes in the environment,
- ability to observe – as a result of constant evolution of actions – company's development, improvement of the processes inside the organization as well as improvement in management where needed,
- ability to forecast market trends and directions of changes, connected to, for example, social or environmental challenges,
- risk management.

Enterprises also encounter restrictions in reporting. These are: low awareness of stakeholders, absence of openness and limited intellectual resources among employees, using reporting as a PR tool and high audit costs. Companies are also reluctant to reveal any important and classified information that may cost them loss of competitive advantage or impose legal sanctions (as well as court cases). The absence of the report may be a result of lack of awareness of the idea or importance of reporting, as well as fear of losing good reputation. There are also other arguments stating that clients are not interested in such reports and the company uses different ways of communication to present their CSR action to their stakeholders[18]. As it has been noticed by M. Morsing, on one hand, the bigger number of companies declaring usage of sustainable development principles, the more information there is on their practice. On the other hand, critical voices are rising about some companies, only bluffing and not caring about introducing sustainable development business. Therefore it is a challenge to believe, when all stakeholders assure, that business practice based on sustainable development is conducted on a daily basis[19].

Preparing reports that present non-financial data is becoming a popular topic of discussions, partially because of a directive that was adopted by the European Union in 2014 regarding disclosure of non-financial information and information on diversity. Estimate

[18] P. Roszkowska, op.cit., pp. 96–97.

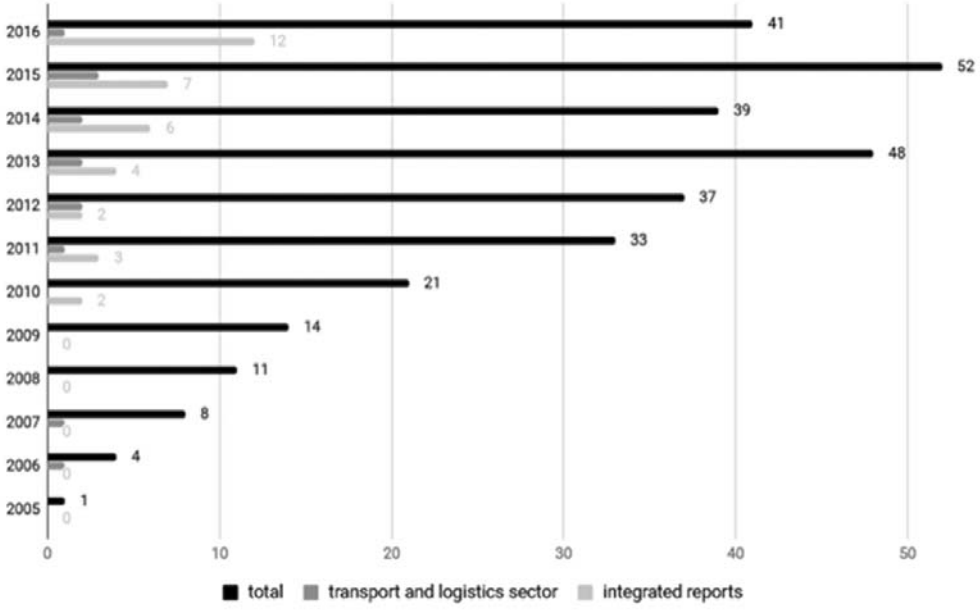
[19] N.C. Smith, G. Lenssen, *Odpowiedzialność biznesu. Teoria i praktyka*, Studio Emka, Warszawa 2009, p. 167

number of entities in the European Union whom new regulations might concern is 6000 whereas in Poland a responsibility of disclosing non-financial data will apply to about 250-300 companies[20]. According to the directive, it is expected that starting from 2017, companies will include important information on at least environmental issues, social and employee concerns, human rights as well as fighting corruption, in their annual report[21].

The analysis of the biggest registry of non-financial reports in Poland[22] shows, that above mentioned directive is a big challenge for Polish companies. After comparing 300 of Polish companies that will be subject to the directive starting in 2017 to the number of 309 reports that were published in the last eleven years (2005 – 2016) one may see how many companies will have to give an effort to prepare and publish report containing non-financial data.

Slowly increasing number of published reports and relatively small number of reports published by companies from logistics' sector can be seen (see Fig. 1).

Figure. 1. Number of non-financial reports published in Poland between 2005 and 2016, including number of reports from companies in transportation and logistics industry.



Source: own elaboration based on data from: http://www.rejestrraportow.pl/

[20] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, https://www.mr.gov.pl

[21] Regulations of the directive 2014/95/UE will be applied to companies that fulfill at least two out of three conditions listed below: average annual employment is over 500; the balance sheet total is over 20 million EUR or net income is higher than 40 million EUR.

[22] http://www.rejestrraportow.pl/

Among 309 reports published in 2010 – 2016 thirteen described 'transport and logistics' sector, which was only 4% of all non-financial reports. In turn, number of integrated reports published between 2010 and 2016 was 36 which is only 12% of all reports. Starting in 2010, when first two integrated reports were published – by Bank Gospodarstwa Krajowego and Lotos Group – their number has been increasing with each year. None of the 13 reports from transportation and logistics companies was an integrated report.

It is noteworthy, that companies which will have to prepare non-financial reports according to international standards, should include data about the whole value chain, with the consideration of characteristics of social, economic and environmental interactions, both positive and negative. Building complete value chain and describing sequence of actions or relationships between sides in order to provide the organization with products and services might be for many companies a big challenge. Tracing stock in the value chain is possible thanks to traceability, which is an ability to trace (reproduce history) of flow of goods in delivery chains and networks together with registration of parameters identifying these goods as well as all localizations included in the flow. Traceability will be mandatory for food, cosmetic and wood industries and will be a guarantee of safety and good source of the resources[23].

Proposed general guidelines for reporting sustainable development in the TSL industry

As presented in the previous part of the paper, the evolution of sustainable development idea was followed by a growing number of its measurement indicators. Their aim is to provide clear and accessible information on SD policy implementation and provide a source of information for continuous corporate (comparable reports allowing to verify meeting set goals) and social control (enabling interest groups to evaluate the level of realization of SD goals), at the same time showing whether the SD actions and processes that are taking place today actually follow the SD guidelines. The guidelines also help to raise awareness of the existing problems and barriers to the realization of the SD idea.

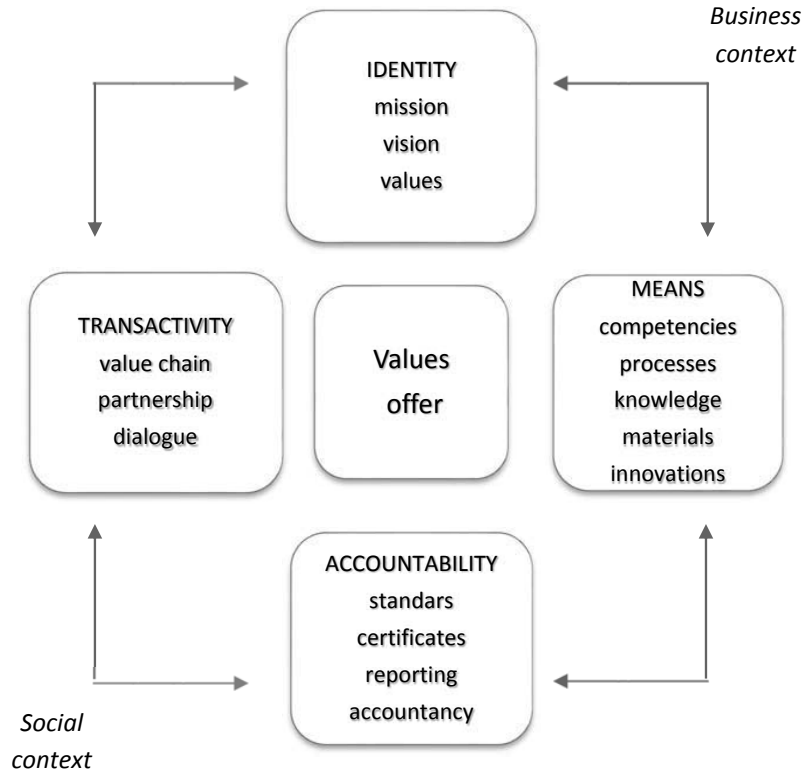
The basic premise of creating a set of indicators to measure sustainable development for TSL industry is the possibility to measure the effects of SD strategy implementation, operationalization of the concept for controlling the goals set for the industry or single companies.

The indicators for TSL industry should warrant durable and self-sustainable development through reaching economic, social and environmental goals. Those indictors should be considered on different scale levels – international, national and local (county and municipal). Another dimension would be time criterion, which considers short-term, medium-term and long-term goals.

[23] https://www.gs1pl.org/standardy-i-rozwiazania/traceability-recall

The first part of indicators for TSL industry should concern company's strategic attitude towards sustainable development, companies' values and its attitude towards SD in the whole supply chain. Means of implementing the SD strategy should be clearly identified and then, the reporting process can be prepared and carried out. The following step is identifying means of sustainable development, including possessed competencies, developed processes, gained knowledge and experience, materials, as well as planned and implemented innovations. Knowing the resources, values and processes, the company can then identify proper reporting technique and choose matching standards.

Picture 3. Management model for sustainable development.



Source: Jonker J., Rudnicka A., Reichel J., Nowe horyzonty Przewodnik po społecznej odpowiedzialności i rozwoju zrównoważonym, Centrum Strategii i Rozwoju Impact, Łódź 2011, p. 69.

Sustainable development of transport, as defined by the Polish Ministry of Infrastructure and Construction, is a sustainable development that:[24]:

[24] Ministerstwo Infrastruktury i Budownictwa, Słownik Pojęć Strategii Rozwoju Transportu do 2020 roku (z perspektywą do 2030 roku), http://mib.gov.pl/media/3510/Slownik_pojec_SRT.pdf

a) ensures the availability of communication objectives in a safe manner that does not jeopardize human health and the environment and in a way that meets the needs of present and future generations;
b) allows for effective functioning, offering the choice of means of transport and sustaining the economy and regional development;
c) reduces emissions and waste as part of their ability to be absorbed by land, uses renewable resources in quantities that can be recycled, consumes non-renewable resources in quantities that can be replaced by renewable substitutes, minimizes land acquisition and noise.

Inspired by this and many other definitions of sustainable development in logistics, the authors prepared a sample set of indicators that might be interesting for companies from TSL sector, that might want to report their sustainable development.

Table 2. Exemplary set of indicators for reporting sustainable development in TSL sector

Strategic perspective	• Sustainability values integrated with the strategy • Leadership focused on SD • Requirement of SD values in the whole supply chain • Clear, measurable and comparable designated SD goals • Long-term commitment • Sustainable services/products/product lifecycle • Regular reporting, transparency • Innovations • Good practices leader • Advocacy – leading change among others • Governance structure • Regular self – evaluation of influence on stakeholders and environment • CSR and SD audits • Evaluation of documents and processes in the SD context • Clear mission and code of conduct • Documented implementation of norms (ISO, EMAS or other) • Educating and training employees in SD area
Social perspective	• Stakeholder engagement and collaboration • Communication with stakeholders (acquisition of stakeholders' feedback, quality and amount of released information, number of meetings with stakeholders, percentage of audited suppliers, number of complaints, percentage of suppliers with CSR and SD programs, flexibility towards clients etc.) • Relations with consumers (transparency information flow, responsibility for products/services, return policy, warranty etc.) • Community involvement (percentage of local employees, social benefits, number of hours spent on building relations with local communities, number of volunteers among employees and managers, number of financial and material donations to local communities, charity programs, number of supported charity organizations etc.) • Social responsibility good practices • Labor practices (human rights, freedom of association, work-life balance, equal chances, absence indicators, labor law, employee welfare, safety at work, budget for training, level of employee satisfaction, wage scales, number of released employees etc.)

	• Strong ethical values • Reputation index • Clear communication in supply chain • Making sure the whole supply chain is engaged in sustainable development • Social trust • Safety o services, innovations, availability of services • Shortening the time of delivery and passage of passengers
Economic perspective	• Transparent reporting of profits and savings, ROI, SOI • Avoiding dishonest practices and dishonest competition • Fair competition • Repayment of liabilities • Solvency • Safe and economic usage of resources, machines and materials • Usage of space and land (including type of ecosystem and its state) • Limiting unnecessary transportation • Size and structure of company's assets • Investments level and fields of investments • Creditworthiness • Level of debt • Dividend paid • Profitability level • Discounts and loyalty programs • Marketing costs • Transparency of accounting
Environmental perspective	• Eco-policies (plans, programs and goals connected with protecting ecosystems) • Carbon-neutral • Environmental consciousness • Eco-awareness • Influence on climate changes and ecosystems • Pollution (percentage of waste harming environment) • Emission of noise • Effectiveness in using natural resources • Effectiveness in recycling • Packaging and storing • Recycling (including procedures for waste usage) • High technologies usage • Technical condition of cars and machines • Ecological solutions • Chemicals usage • Efficiency

Source: own elaboration

Making a decision about implementing sustainable growth reporting needs to be preceded by a thorough analysis of implementation costs and benefits. To have a satisfying effect, the company should go through a process, which begins in the moment of identification of SD reporting needs and finishes long after publishing the reports. The first step in the process is the identification of SD report generation prerequisites (goal, benefits, costs) followed by identification of stakeholders groups. Having those

information, the company will be able to identify key topics and issues of the report. Time-bound goals must be set in accordance to those issues. Those goals should also be measurable, realistic and achievable. Those goals will lead the way to action plan and preparing concept of the reporting process. The next step is the choice and development of key indicators, which will enable the next step: measurement and evaluation results. On this stage of the reporting process, a report is created. With every new report, effectiveness and utility must be improved. Companies must remember, that publishing a report is not the last step in the process. Feedback from stakeholders is extremely important for true sustainable development, and feedback management will help the company improve its actions and create recommendations for further development. Monitoring and control system is needed to properly realize sustainable development strategy.[25]

Irrespective of which presented-above guidelines the company will follow, or whether it will create its own reporting scheme, to be fully socially responsible, the company should engage stakeholders in this reporting process. It appears that companies are able to properly identify stakeholders' groups, but apparently they stop there. The following steps, that the company may take are extremely important and can be very beneficial. Identifying way of engaging stakeholders shows whether the company is truly committed to sustainable development and whether it is properly building relations with its social environment. Companies must remember, that being unable to build relations with key stakeholders and meet their needs might cause conflicts. These problems may be caused by a lack of understanding the influence that stakeholders have on companies, managers don't have enough knowledge and understanding of how to use this influence and how to manage it. It is important for managers to understand that CSR and SD programs are inseparably connected to relations with social environment. Without these relations, those programs are only superficial and that greatly influences the quality of reporting.

Summary

This paper presents an outline of concepts of sustainable development, as well as the issue of integrated reporting. The next stage is a characteristic of sample norms and standards of reporting non-financial data (including the framework for GRI, the Global Compact, AA 1000, ISO and SA 8000). The key element of this article is an analysis of guidelines for sustainability reporting in the context of the TSL sector. Verification of non-financial information published by companies in the analyzed industry has been made on the basis of available public reports.

The requirement of reporting non-financial data (since 2017) is a new obligation for many companies, but it is also an opportunity. Companies from the TSL

[25] Roszkowska P., *Rewolucja w raportowaniu biznesowym. Interesariusze, konkurencyjność, społeczna odpowiedzialność,* Wyd. Difin, Warszawa2011, p. 161.

industry, realizing the strategy of sustainable development, are gaining image of an organization taking care of both – its natural environment and its employees, as well as paying close attention to its customers and its social environment. Therefore it is important to promote the idea of sustainable development among companies in the industry.

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Determinants of Employee Turnover

The article, based on literature review, presents possible reasons of employee turnover. It also briefly describes employee turnover taxonomy and its cost both for the company and the individual parting ways with the firm. The number of different causes pushing someone to change a job, makes employee turnover very complex phenomena. What is more, some of the reason coexist at one time and its influence is not linear, and also moderated by other variables.

Article

The employee turnover is a phenomena present in every company's life. Therefore it was point of interest of researchers for quite some time. Despite the fact it is well described in literature, still neither the academic researchers, nor business practitioners have not build a model that can satisfy most of them. The more we dig into the problem, to more new layers occurs. Already in 1951 managers and researcher already consider phenomena of voluntary turnover as complex and caused by many reasons[1]. Now, with time and new research we may say that it is even harder to fully descriebe.

Cost of turnover

Employee turnover it is for sure a problem worth investigating, as it creates cost for companies. Both direct and indirect. "the costs are buried in line items like recruitment, selection, temporary staffing and training. Or worse still, the real but unmeasured costs from losses of customer service continuity or critical implicit knowledge are never calculated. Estimates of the losses for each employee vary from a few thousand dollars to more than two times the person's salary depending on the indus-

[1] Bowden, B. G. T. (1951). The Problem of Employee Turnover. *Harvard Business Review*.

try, the content of the job, the availability of replacements and other factors"[2] Mentioned by Holtom and others list of costs is not closed. For example we also observe that one person leaving an organization influences the morale of his colleagues. The person who already left may still have impact on his former team. If he changed for better job, he may try to recruit his former colleagues to the new employer. Also company's customers are affected by turnover. Gap in a process created by the person who left may lead to lower customer satisfaction and higher results variations, which is especially dangerous for companies which organized their processes in just-in-time philosophy. The lower satisfaction is also right when it comes to internal customer within the company.

On the other hand, employee turnover is also a cost for individual changing a job. The person usually devotes a lot of time and energy on going through job advertisements, preparing himself and attending for interviews. After starting a new job, a person have to adapt to new environment and most probably to new kind of duties.

Turnover taxonomy

In literature we distinguish voluntary and involuntary turnover; desirable and undesirable turnover[3]; avoidable and unavoidable turnover.

Voluntary turnover happens when an employee is willingly leaving his company. Involuntary when the company make someone to leave.

The key to understand the difference between desirable and undesirable turnover is taking a look from the company's point of view. Desirable turnover is when the person who is leaving was not so important, probably caused more trouble than advantage to the company and the management of the organization does not consider it as a loss.

The desirable turnover can be illustrated by many examples. One of the most obvious cases is when a poorly performing employee is leaving. The poor performance may be the result of lack of skills, engagement or high absenteeism. Sometimes the leave of important union member (the one especially fierce in blocking new ideas) can be considered as a desirable turnover. We also speak about desirable turnover when leaving employee is replaced by someone with higher skills, who simply performs better and brings more value to the organization.

On the other hand we have undesirable turnover, it is a situation when a company objectively speaking loses important employee. It may be certain knowledge, skills, a strong network of contact maintained by the person.

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[2] HOLTOM, B. C., Mitchell, T. R., Lee, T. W., & MARION B. EBERLY. (2008). Turnover and Retention Research: *The Academy of Management Annals*, *2*(1), 231–274. https://doi.org/10.1080/19416520802211552, p 236

[3] Eberle, G. J. (1919). Labour Turnover. *American Economic Review*, (9)

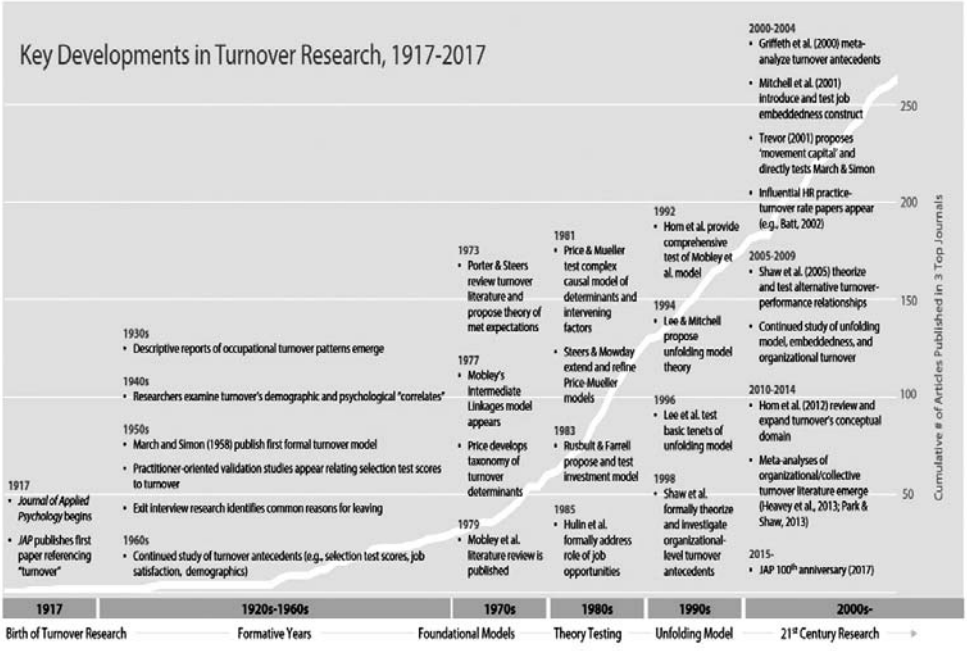
Speaking about turnover, it is good to mention a categorization for avoidable and unavoidable turnover.[4] The avoidable is caused by the reasons which a company can control and therefore avoid losing employee. Among them is pay, working conditions, quality of management and organization. The causes of unavoidable turnover are usually private situation of employee, who is changing place of stay to pursue his love of life or have to take care at home of a family member. In most drastic cases the employee himself is in serious medical conditions or dies.

The reasons of employee turnover

Although some of the causes of employee resignantion were already mentioned it is worth to look for some detail analysis of turnover predictors. Standing on the point of view of a company we may focus on voluntary turnover, as in most cases the company wants to decrease it.

There is a long tradition of turnover research. A tremendous job of summing it up was done by: Hom, P., Lee, T. W., Shaw, J. D., & Hausknecht, J. P and is presented on the figure below.

Figure 1. History of turnover research



Source: Hom, P., Lee, T. W., Shaw, J. D., & Hausknecht, J. P. (2017). One Hundred Years of Employee Turnover Theory and Research. Journal of Applied Psychology, (765), 1–35. https://doi.org/10.1037/apl0000103

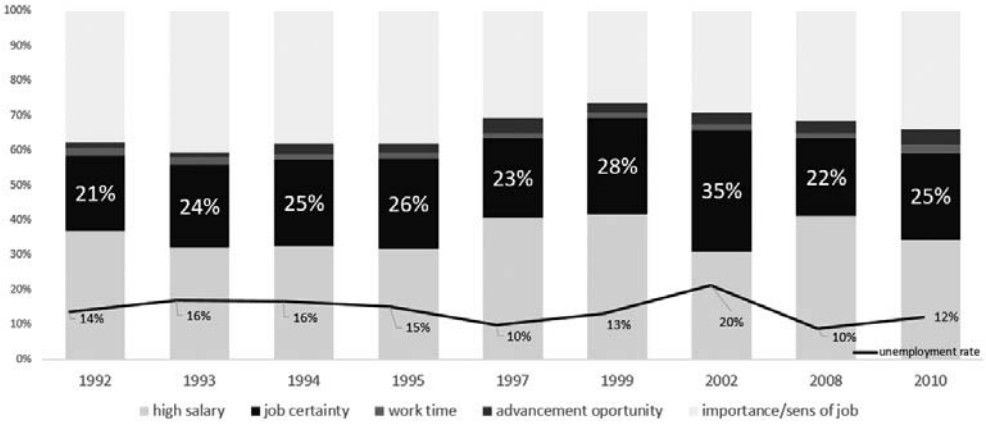
[4] Abelson, M. a. (1987). Examination of avoidable and unavoidable turnover. Journal of Applied Psychology, 72(3), 382–386. https://doi.org/10.1037/0021-9010.72.3.382

Reasons of voluntary turnover – the ones beyond of company's control

When it comes to reasons, one of the easy to notice is the state of economy[5]. The bigger the demand for work is, the more opportunities are open for someone considering changing his job. Another significant factor is, that higher salaries are offered by employers seeking for candidates. Also the more and more headhunting companies are used. What they do, is to directly contact employees of other companies and offer them a job in their clients company. It is possible that someone not currently looking for job advertisements will be approached by the headhunter with interesting proposition.

On the other hand, in time of crisis people tend to value their job more and their risk aversion is higher. We can illustrate in on the example of Polish General Social Survey, which in every edition gathered answers of over 1000 randomly chosen people. One of the question in the survey was: "what is the most important job quality?" We see, that in the time of higher unemployment people tend to choose „job certainty" more often and „higher salary" less.

Figure 2. „most important job quality" and unemployment level in Poland.



Source: Sedlak P. based on Bogdan Cichomski (program director), Tomasz Jerzyński, i Marcin Zieliński. Polskie Generalne Sondaże Społeczne: cumulated computer database 1992–2010. Instytut Studiów Społecznych, Uniwersytet Warszawski, Warszawa 2013 and Central Statistical Office for Poland; http://stat.gov.pl/en/.

The percent of people choosing mentioned qualities correlate with unemployment level.

[5] Schervish, P.G. (1983), "The structural determinants of unemployment, vulnerability and power in market relations," New York: Academic Press and also Arekar, K., Jain, R., Desphande, B., & Sherin, P. (2016). Relationship Between Individual and Structural Determinants on Job Satisfaction – Analysis of Employee Turnover in the Indian. The Journal of Developing Areas, 50(6), 387–398.

Table 1. Correlation matrix between unemployment and „most desirable job quality".

	High salary	Job certainty
unemployment	-,8181	,7313
	p=,007	p=,025

Surce: preapared by the author;

It is reasonable to say, that during an economy slowdown or crisis (the author understand the crisis, as decreasing GDP in 2 following years) people expect that their job search will take longer. This decrease willingness of changing a job, because even if one have an job offer from a new company, the person has to consider, that if the new job will not fulfill his expectation, he will have to find another one. This means looking for a job on employer market.

Nevertheless, job market condition is only one variable influencing peoples decisions whether to change a job or not. Personal characteristic is another one. Different level of risk aversion, openness for new experience, curiosity characterize different people[6].

Beyond company's direct influence are also matters occurring in persons' private life. Own, or family members serious illness, falling in love in someone living in the other city or country etc.

Still, some of the reasons may be influenced indirectly. For example, company's effort in promoting healthy life style, providing employee with personal health care, regular health check may prevent some of the illnesses.

Reasons of voluntary turnover – the ones that company creates

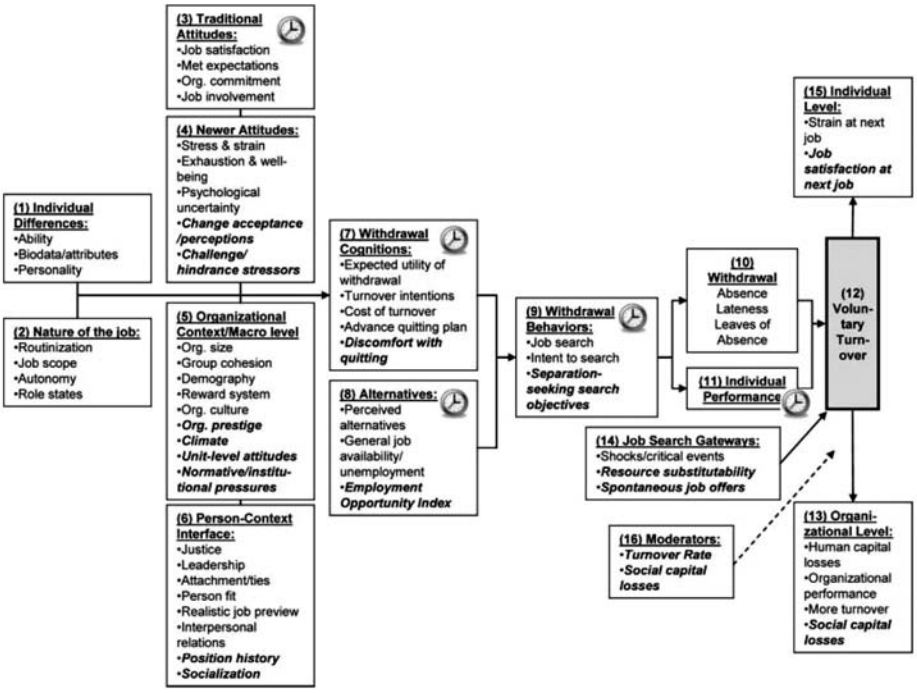
In authors opinion the most important thing is quality of the job itself, which result in overall job satisfaction experienced by an employee. Job satisfaction is multidimensional construct which is usually defined as consisting of: salary satisfaction, relations with colleagues and supervisors, type of duties and it's variety, recognition, quality of management and organization, level of independence, possibility of learning and being advanced, working conditions.

[6] Costa, P.T. Jr. & McCrae, R.R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) manual.* Odessa, FL: Psychological Assessment Resources

To understand it more it is worth to look how job satisfaction questionnaires are built. Among the most recognized are Minessota Satisfaction Questionnaire (MSQ)[7], Job Satisfaction Survey[8] or Job Descriptive Index (JDI)[9].

No matter how many components job satisfaction have it is still only a part of the story. It is hard to find a researchers who tries to gather and understand all causes at one time. On of such is a aery interesting summary of the causes of voluntary turnover is presented by HOLTOM, B. C., Mitchell, T. R., Lee, T. W., & MARION B. EBERLY.

Figure 3. Reasons of voluntary turnover



Source: HOLTOM, B. C., Mitchell, T. R., Lee, T. W., & MARION B. EBERLY. (2008), p. 244

[7] Weiss D.J., Dawis R.V., England G.W., Lofquist; Manual for the Minnesota Satisfaction Questionnaire; http://vpr.psych.umn.edu/assets/pdf/Monograph%20XXII%20-%20Manual%20for%20the%20MN%20Satisfaction%20Questionnaire.pdf, retrieved 14.04.2017

[8] Spector P.E.; Measurement of Human Service Staff Satisfaction: Development of the Job Satisfaction Survey; American Journal of Community Psychology;1985; Vol. 13, No. 6.

[9] Bowling Green State University; https://www.bgsu.edu/arts-and-sciences/psychology/graduate-program/industrial-organizational/research/job-descriptive-index.html

Conclusion

None of the company cannot fully control employee turnover. On the other hand every company can become a better employer, influence employee satisfaction and in result decrease number of reasons to leave the organization. Still one have to remember that even if possible the turnover should not be limited to much. Vacancies bring new people to organization and with them new knowledge and ideas.

When it comes to scientific deliberations concerning employee turnover it seems, that the knowledge gained by the separate researchers can be treated cumulatively, as each shed a new light on the problem of employee turnover. In authors opinion the challenge in research about voluntary turnover is that it is decision of an employee, and once we agree that psychology is involved a new level of complexity occur and giving a simple answer is very hard.

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Bowling Green State University; https://www.bgsu.edu/arts-and-sciences/psychology/graduate-program/industrial-organizational/research/job-descriptive-index.html

Central Statistical Office for Poland; stat.gov.pl/en

Tomasz Jerzyński, i Marcin Zieliński. *Polskie Generalne Sondaże Społeczne: cumulated computer database 1992-2010.* Instytut Studiów Społecznych, Uniwersytet Warszawski, Warszawa 2013

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Diagnosis of the phenomenon of creating open process innovations on the Polish market

The article presents a diagnosis of the status of the phenomenon of process innovation in Polish enterprises, based on the author's research. The subject of the research covered innovative enterprises operating on the Polish market, which during the last three years have implemented at least one process innovation in cooperation with other external entities. The analysis covered 129 enterprises. The research results indicate a small scope of the phenomenon of creating open process innovation on the Polish market and prevalence of the outside-in openness model. The ones who initiate open process innovations are mainly the enterprises. Cooperation on creating process innovations has been usually carried out within a system of neighbouring links of the chain value, with partial support of science & research institutions. Apart from the enterprises, also the clients, the providers and science and research institutions demonstrate the greatest involvement in creating open process innovations. Process innovations created in the open model are mainly progressive (gradual) innovations, not radical ones. The relation between implementation of open process innovation and the financial performance is not acknowledged in all enterprises.
Key words: open process innovations, innovation initiators, innovation participants, radical innovations, progressive innovations, financial performance, Polish enterprises.

Introduction

The acceleration of the technological progress, the common phenomenon of reducing the life-cycle of products and services, the information and communication revolution, covering IT development, intensification of globalisation phenomena and the spread of new forms of organisations and cooperation of enterprises based

on network links, have enforced the necessity to develop a new attitude to innovation creation based on cooperation with external entities, which is called "open innovation".

The concept of open innovation, introduced to the literature by H. W. Chesbrough and defined by him as a paradigm according to which firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology[1]; or as the use of purposive inflows and outflows of knowledge to accelerate internal innovation[2], is already well established in the modern economic environment.

It is worth mentioning that the open attitude to creating innovation for some researchers means systematically encouraging and exploring a wide range of internal and external sources for innovation opportunities, consciously integrating that exploration with companies' capabilities and resources[3]; while for others it means use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation[4]; still for other scientists it means a set of practices for profiting from innovation, and also a cognitive model for creating, interpreting, and researching those practices[5]. A considerable number of researchers, such as K. Laursen and A.Salter[6], perceive innovation openness as a number of various external sources of innovation activities of an enterprise. According to this logic, the bigger the number of an entity's external activities, the greater the openness of innovation.

Opening innovation processes in an enterprise may be effected using three schemes. They have been distinguished on the basis of the direction of knowledge flow, which can be:

- outside-in, where the process of flow of knowledge from the external environment into the enterprise prevails;
- inside-out, where the process of flow of knowledge from the enterprise to the external environment prevails;

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[1] H. W. Chesbrough, *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Boston Mass 2003

[2] H. W. Chesbrough, *Open Business Models: How to Thrive in the New Innovation Landscape,* Harvard Business School Press, Boston 2006.

[3] J. West, S. Gallagher, *Challenges of Open Innovation: The Paradox of Firm' Investment on Open Source Software*, R&D Management, 2006, vol. 36, no. 3.

[4] O. Gassman, E. Enkel, H. W. Chesbrough,, *The Future of Open Innovation*, www.alexandria.unisg.ch/publications/62764

[5] *Open Innovation: Researching a New Paradigm*, (ed.) H. W. Chesbrough, W. Wanhaverbeke, J. West, Oxford University Press, Oxford 2006.

[6] K. Laursen, A. Salter, *Searching High and Low: What Types of Firms Use Universities as a Source of Innovation?*, Research Policy, 2004, no. 33.

- or coupled, where the knowledge flows in both directions simultaneously by cooperation of enterprises under business networks or strategic alliances[7].

Innovation implemented in the open model is subject to typology similar to that applicable to the closed model. Depending on the area of introduced changes, they can be divided into: product innovation, process innovation, marketing and organisational innovation[8]; whereas depending on the rate of innovation they can be divided into: radical innovation and progressive (gradual innovation)[9]. A juxtaposition of both these criteria allows for distinguishing the category of "open process innovation" covering, in accordance with the *Oslo Manual*:

- introduction of new or significantly improved production or supply methods (whereas the supply comprises the entire logistics of an enterprise),
- introduction o f new or significantly improved methods of creating and performing a service,
- introduction of new or significantly improved methods for ancillary support activities of an enterprise (accountancy, IT support, supplies etc.).[10]

While the very idea of creating open process innovation is relatively well examined and described in the literature, there is a visible knowledge gap in the diagnosis of actual state of this phenomenon on the Polish market. The lack of such diagnosis results in a number of questions: To what extent do Polish enterprises use the open model in creating process innovation? Who do they usually cooperate with in creating process innovation? Who initiates creation of this process innovation? What is the involvement of particular participants of open process innovation creation on the Polish market? What is the level of novelty of innovations created? This article attempts to find answers for the above questions.

The goal of the article is to provide a diagnosis of the actual status of the phenomenon of open process innovation creation on the Polish market. It will be attained on the empirical level, on the basis of the author's research on 120 innovative enterprises operating on the Polish market.

Subsequent sections of the article provide methodological basis of the research along with description of the research sample and an appropriate presentation of in-

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[7] H. W. Chesbrough, *Open Innovation*, Harvard Business Review Press, Boston 2003; H. W. Chesbrough, A. R. Garman, *Otwarta innowacyjność: recepta na trudne czasy,* Harvard Business Review Polska, 2010, no 11; O. Gassmann, E. Enkel, *Open Innovation Forschung*, [in:] *Gestaltung von Innovationssystemen,* (ed.) M. Weissenberger-Eib, Cactus Group Verlag, Kassel 2005; O. Gassmann, E. Enkel, *Towards a Theory of Open Innovation: Three Core Process Archetypes*, www.alexandria.unisg.ch/EXPORT/DL/20417.

[8] *Oslo Manual. Guidelines for Collecting and Interpreting Innovation Data*, 3rd Edition, A Joint Publication of OECD and Eurostat, Paris 2006, p. 50-60.

[9] R. Knosala, A. Boratyńska-Sala, M. Jurczyk-Bunkowska, A. Moczała, *Zarządzanie innowacjami*, PWE, Warsaw 2014, s. 23-24.

[10] *Oslo Manual. Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition, A Joint Publication of OECD and Eurostat, Paris 2006, p. 50-60.*

dividual components of the phenomenon of open process innovation implemented by innovative enterprises operating on the Polish market.

Methodological basis of the research

The diagnosis of the phenomenon of open process innovation in Polish enterprises was a part of wider research entitled *Konfiguracja zasobów w modelach otwartych innowacji* [*Configuration of resources in open innovation models*] carried out in 2015-2016 by the employees of the Institute of Management of the Warsaw School of Economics under the direction of A. Sopińska. The 1st stage of research, concerning the category of open product innovation was completed in 2015[11] and resulted in a publication entitled *Otwarte innowacje produktowe realizowane przez przedsiębiorstwa działającej w Polsce. Podejście zasobowe* [*Open product innovation implemented by enterprises operating in Poland. Resource-related attitude*][12]. The 2nd stage of research concerning open process innovation was completed in 2016[13]. One of the research tasks of the 2nd stage was to diagnose the phenomenon of creating open process innovations by innovative enterprises operating on the Polish market.

Diagnosis of the open process innovation phenomenon covered four components:

1. Evaluation of the scope of the phenomenon of process innovation implemented in the open model,
2. Identification of initiators and participants of process innovation creation,
3. Evaluation of the level of involvement of individual participants in the innovation creation,

evaluation of the rate of novelty of process innovation created this way and their impact on financial performance.

The research was carried out using the Computer Assisted Telephone Interview (CATI) method. The survey questionnaire comprised both closed ended one and multiple-choice questions, as well as open-ended questions.

Due to the gradual course of the innovation process, the time aspect had to be taken into account from the moment of arising of a process innovation idea until its final implementation and commercialisation. The research assumes a 3-years time perspective (2014–2016).

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[11] Raport z badań statutowych nr KZiF/S/03/15: *Konfiguracja zasobów w modelach otwartych innowacji. Etap I- Innowacje produktowe*; director: A. Sopińska; participants: A. Sopińska, P. Wachowiak, W. Mierzejewska, SGH, Warsaw 2015.

[12] A. Sopińska, W. Mierzejewska, *Otwarte innowacje produktowe realizowane przez przedsiębiorstwa działającej w Polsce. Podejście zasobowe,* Oficyna Wyd. Warsaw School of Economics, Warsaw 2017.

[13] Raport z badań statutowych nr KZiF/S/36/16: *Konfiguracja zasobów w modelach otwartych innowacji. Etap II- Innowacje procesowe*; director: A. Sopińska; participants: A. Sopińska, W. Mierzejewska, SGH, Warsaw 2016.

The subject of the research included innovative enterprises operating on the Polish market. The sampling frame included: a base of *500 most innovative companies* provided by Gazeta Prawna and a the *Rating of most innovative Polish companies – Kamerton*.

The sample was selected randomly and the condition for enterprises to enter the sample was meeting the following criteria:

1. An enterprise has introduced at least one process innovation within the last three years,
2. An enterprise has created the process innovation in cooperation with external entities.

The input sample comprised N=271 enterprises which have introduced process innovations during the last 3 years (i.e. met the first conditions), 175 of which (65%) also met the second condition (the process innovations have been created in cooperation with other entities). One hundred and twenty interviews (N=120) were finally carried out with people having knowledge on the innovations introduced by enterprises, in particular with people holding positions of owners, presidents/deputy presidents, general directors/deputy general directors, directors of a department or deputy department directors. The *response rate* was 0.69.

The research sample was slightly diversified. The enterprises included in the sample were mostly medium-sized and large entities, operating on the market for at least several years, with majority national capital, specialising in production and having international experience (table 1).

Table 1. Description of the research sample

Description parameters		% share
Enterprise size (measured by the number of employees)	Micro-sized	3.3
	Small	12.5
	Medium-sized	44.2
	Large	40.0
Origin of majority investor	Foreign	12.5
	National	87.5
Major industry	Production	74.2
	Services	19.2
	Trade	6.7
Date of the enterprise establishment	Before 1989	50.0
	Between 1989 and 2004	41.7
	After 2004	8.3
Geographical scope of the enterprise's activities;	Local	5.0
	Regional	1.7
	National	20.0
	International	73.3

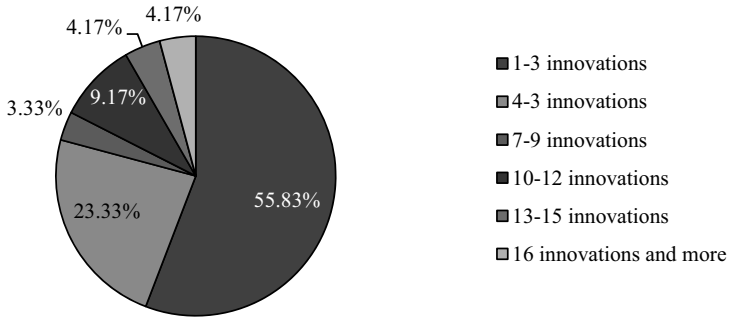
Source: own study, N=120

The incidence of open process innovation in the analysed enterprises

Evaluation of the incidence of open process innovation in the enterprises under research required the respondents to name the number of process innovations created in cooperation with external entities during the last 3 years.

The dispersion of answers to the survey was large, from 1 open process innovation (15% of respondents) to 50 such innovations (1.7%). The highest rate of respondents, or over 25%, indicated 2 process innovations implemented in the open model (in cooperation with external entities) during the last 3 years. Sectional grouping of the answers made it possible to draw more comprehensive conclusions. The basis, which set limits of particular sections, was the number of 3 innovations, which meant implementation of 1 open process innovation a year, taking into account the 3-year research time horizon. The percentage distribution of the answers with the aforementioned sections is presented on Fig. 1.

Figure 1. The number of open process innovations created in the enterprise during the last three years (% of answers)



Source: own study, N=120.

Apparently, the enterprises under research used the open model to create process innovations only to a slight extent. More than a half of the analysed enterprises (55.83%) are entities which during the last 3 years have had only 1-3 open process innovations (which means not more than 1 a year), while about 80% of the entities (exactly 79.16%) implemented 1-6 open process innovations, which makes not more than 2 innovations a year.

Interestingly, the very idea of creating process innovations in the open model was familiar to the analysed entities. This is reflected by the relatively large rate (65% of so-called original sample) of enterprises which declared having implemented process innovations in cooperation with external entities (their number was 175 per 275 analysed entities) during the last three years. However, the effectiveness of such cooperation in respect of created process innovations was low. As much as 15% of the analysed enti-

ties have implemented only one open process innovation during the entire three-year period, while 25% have implemented only two such innovations.

Taking into account the fact that entities demonstrating the highest innovation level were selected for the research (see sample selection), and that production enterprises for which process innovation is an important source of competitive advantage were prevailing among the analysed entities (74.2%), such a result may be found alarming.

To sum up, it may be assumed that the very idea of creating process innovations according to an open model is known to innovative enterprises operating on the Polish market, but it is still insufficiently exploited, which is proven by the small number of innovations implemented. It should be noted however that this statement can be partly false, since the research did not take into account the value of the implemented process innovation, and only their number.

Initiators and participants of the process innovation creation

The second component of the open process innovation phenomenon diagnosis in the enterprises was the identification of initiators of works on creating these innovations. The researchers intended to answer the question: who has taken the initiative of creating open process innovations? Has the initiative of creating process innovation been more commonly taken by the enterprises themselves or by external entities, or maybe by both equally? Additionally, the researchers also intended to identify categories of external entities that have most commonly participated in creating, or implementing process innovations.

On the basis of the results it can be stated that the ones to take the initiative of crating open process innovation have been definitely the enterprises themselves (69.17% of answers) or both parties equally (23.33% of answers). External entities as the ones who have initiated open process innovations were indicated by only 7.50% of respondents.

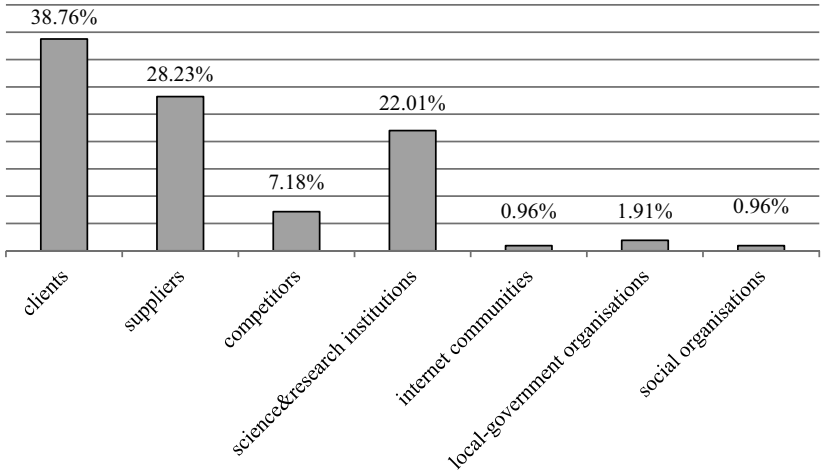
Such a low rate of answers indicating external entities as the initiators of open process innovations can be caused by two reasons. First, it is possible that the answers concerning the initiator of open process innovation were to some extent subjective. Second, the sporadic initiative of the external entities may reflect certain general regularity featuring the open nature of the innovation processes on the Polish market. It is possible that enterprises operating on the Polish market implement less advanced models of innovation openness (so-called supply-demand models or integrated models), not so-called simultaneous models[14]. It should be verified on a larger sample of enterprises.

Due to the sample selection condition (enterprises who have implemented at least one process innovation in cooperation with an external entity), the participant of open process innovation was each time, naturally, the enterprise itself. Identification of categories of external participants however remains an open issue. To this end the respond-

[14] R. Rothwell, *Towards the Fifth-generation Innovation Process*, International Marketing Review, 11/1.

ents were asked to name three out of seven potential categories of external entities which have been most commonly cooperating with them in creating process innovations within the last three years. Potential categories of external entities are: clients, suppliers, competitive enterprises, science & research institutions, internet communities, local government organisations, social organisations.

Figure 2. External entities most commonly participating in creating open process innovations (% of answers)



Source: own study, N=120: Note: The values do not sum up to 100%, since each respondent could give more than one answer.

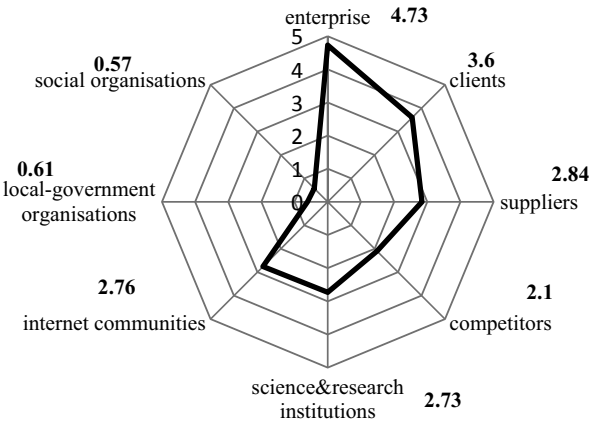
Among the potential categories of external entities the ones most commonly participating in creating process innovations were clients (38.76%) followed by suppliers (28.23%) and science and research institutions (22.01%). Two categories of entities were the last active in this area: social organisations and internet communities. Each of these categories was indicated by less than 1% respondents. Local government organisations have been slightly more commonly participating in creating open process innovations. They were indicated by less than 2% respondents. It can be therefore concluded that cooperation on creating process innovations has been usually carried out within a system of neighbouring links of the chain value, with the support of science and research institutions.

Evaluation of involvement of particular participants in creating open process innovations

Another component of the diagnosis of the open process innovations on the Polish market was the evaluation of involvement of particular participants in creating open process innovations. For this purpose the respondents were asked to rate the involve-

ment of each entity according to a 5-point scale, where 0 means no involvement and 5 means very strong involvement. Weighted arithmetic means of the evaluation of involvement of individual entities in creating open process innovations are presented on figure 3.

Figure 3. Weighted arithmetic means of evaluation of involvement of particular participants in creating open process innovations



Source: own study, N=120; Note: 5-point scale, where 0 means no involvement and 5 means very strong involvement.

The chart clearly indicates considerable diversification in respect of involvement of individual entities in creating open process innovations on the Polish market.

The most involved were, apart from the enterprises themselves (4.73), clients (3.60) and suppliers (2.84). It should be highlighted however that the high evaluation of the enterprises' involvement could partly be caused by the respondents' subjectivism.

The groups which were the least involved in creating open process innovations were: social organisations (0.57) and local government organisations (0.61). Internet communities and science & research institutions presented an average level of involvement (2.76 and 2.73 respectively).

The weighted arithmetic mean of the evaluation competitive enterprises' involvement was only 2.1 on a five-point scale, which has lead to the conclusion that the idea of coopetition in creating process innovations on the Polish market is still not common.

Summing up, it can be assumed that the involvement of an entity of a particular category in creating process innovations is not a simple derivative of its participation in creating innovations. For example, participation of internet communities in creating open process innovations was indicated by only 0.96% respondents, although the involvement of internet communities was rated as medium (2.76).

Rate of novelty of open process innovations and their impact on financial performance.

The evaluation of the novelty rate of innovations and their impact on financial performance was the last element of diagnosis of the open process innovations phenomenon on the Polish market. The respondents were asked to determine which kind of innovations were prevailing among the open process innovations created during the last 3 years: the radical or the progressive ones?

Radical innovations were defined as introduction of totally new processes (production or supply methods) replacing those applied so far, while progressive (or gradual) innovations were defined as innovations consisting in improvement/modification of already existing processes (production or supply methods).

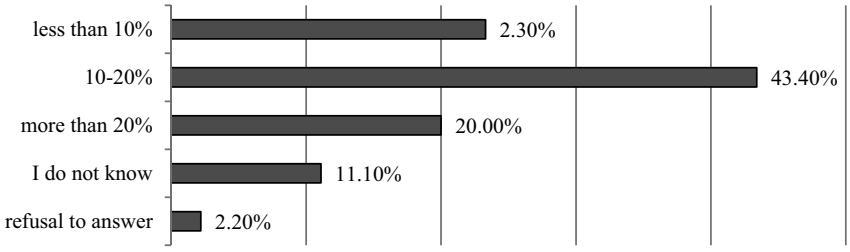
Progressive (gradual) innovations were definitely prevailing in the enterprises under research. As much as 55% of respondents indicated the progressive nature of the created innovations. Only 14.17% of respondents stated that radical innovations were prevailing among all the created innovations. The remaining 30.83% of respondents considered the innovations to be both radical and progressive. It can be therefore assumed that the mere fact of involvement of external entities in the process of creating process innovations does not guarantee that they would be of radical nature.

Most respondents (75.8%) clearly acknowledged the relation between the fact of implementing open process innovation and financial performance of their enterprises, whereas almost all of them indicated that this impact was positive. Only 1 respondent (0.8%) stated that the impact was negative. It is alarming however that almost a quarter of respondents (24.2%) did not see any relation (neither positive, nor negative) between implementing open process innovations and their enterprises' financial performance. There may be several reasons of this situation: first, the difficulty in separating one factor (of innovation) as the determinant of financial performance of an enterprise; second, the difficulty in assessing real relations between expenditures and effects of innovation; third, a small scope of incidence of open process innovation (1-2 innovations a year on average); fourth, low awareness of the essence of process innovations among the respondents.

Further analysis of results allows for the statement that mean evaluation of the power of positive impact of open process innovations on the financial performance of enterprises was 16.79%, the median was 11.5% and the mode was 10%. Over 66.7% of respondents evaluated the power of positive impact of open process innovation on their enterprises' financial performance as 20% or less, 23.3% of whom considered that the power of positive impact was less than 10%. Only 20% of respondents evaluated this power as more than 20%.

Interestingly, 11.1% of respondents could not evaluate the power of the positive impact of open process innovations on the enterprises' financial performance, although they had previously confirmed the positive impact of the innovations on financial performance. The distribution of answers is presented on Figure 4.

Figure 4. The power of the positive impact of open process innovations on financial performance of enterprises



Source: own study, N=90.

In short, most respondents acknowledged the positive impact of open process innovations on the enterprises' financial performance. As for the power of the positive impact, it is difficult to evaluate it unambiguously because we do not have any reference point. In order to draw conclusions it seems necessary to compare the results obtained for open process innovations with the results obtained for closed process innovations or results obtained for other category of innovations (product-, marketing-related etc.).

Recapitulation

The diagnosis of the phenomenon of open process innovations in the enterprises under our research made it possible to draw some general conclusions:

First, the very idea of cooperation in creating process innovations is familiar to entities operating on the Polish market, although not much exploited. The number of open process innovations created this way is still small.

Second, the ones that initiate creating open process innovations on the Polish market are mostly the enterprises, not external entities. The latter initiate open process innovations only sporadically. The outside-in model of openness (as opposed to the inside-out or coupled models) for creating process innovations prevails on the Polish market, where enterprises regard external entities as sources of knowledge.

Third, three categories of external entities usually participate in creating open process innovations on the Polish market: clients, suppliers and science & research institutes; while social organisations, local government organisations and internet communities are the least common participants. Cooperation on creating process innovations on the Polish market has been usually carried out within a system of neighbouring links of the chain value, with partial support of science & research institutions.

Fourth, the level of involvement of particular participants in creating open process innovations is very diversified. Apart from the enterprises, also the clients, providers and science & research institutions demonstrate the greatest involvement in creating open process innovations. Local government organisations and social organisations are the least involved in the process of creating innovations. The frequency of participation

in creating open process innovations does not determine the level of involvement of a particular entity in creating these innovations. There are entities which very seldom participate in creating open process innovations, but if they do, they involve strongly (internet communities).

Fifth, progressive (gradual) innovations prevail on the Polish market, consisting in modification/improvement of already applied processes (production or supply methods), and not radical innovations which result in creation of totally new processes (production or supply methods) replacing the current ones. The mere fact of involvement of external entities in the process of creating process innovations does not guarantee that they would be of radical nature. Within the open model both radical and progressive (gradual) innovations can be created.

Sixth, not all enterprises operating on the Polish market acknowledge the relation between implementing open process innovations and financial performance. Those which do acknowledge the relation usually identify the open process innovations with the positive impact on financial performance.

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Impact of the Positive Organizational Scholarship on the Management of Contemporary Organizations: Findings in the Areas of Technological Entrepreneurship and Creative Clusters

Positive Organizational Scholarship (POS) is a one of the new to trends in management science, significantly impacts the practice of organizations management. The key assumption of POS is recognition of social network as the main driving force of constituting and creation of all social reality including task groups, projects, ventures, enterprise organizing and communities. Methodological recommendations rationalizing the shape of processes of enterprise organizing, are the basic guidelines for practical management methodology, In the chapter selected aspects of POS have been analyzed as a results of the two research projects carried out in Silesian University of Technology in the area of technological entrepreneurship and creative clusters.

Introduction

The positive aspects of management can be seen for a number of years, until Cameron et al. (2003) described it as a new discipline. The essence of this approach was based on the observations that positive aspects used in leadership. motivation and other social activities are much more effective than negative ones: detailed supervising and control, penalties. As it is described by the authors it is not a single theory but consists of several aspects of organization's life: excellence, thriving, flourishing, abundance, resilience and virtuousness. According to Dutton and Glynn (2008) Positive Organizational Scholarship (POS) has three core perspectives:

1. a concern with flourishing (people and organizations),
2. a focus on the development of organizational strengths or capabilities,
3. an emphasis on the generative, life-giving dynamics of organizing.

The justification of network paradigm in contemporary management arises from different sources in environment:

- dissemination of entrepreneurial approach in strategic management,
- dissemination and awareness of necessity for cooperation on the following levels:
  - global: dissemination of rules and values – human rights, respect for natural environment, justice, solidarity, support for excluded and refugees,
  - strategic management of organizations and regions,
  - operational management in clusters and networks.
- dissemination and awareness Corporate Social Responsibility (CSR) rules,
- development of the prosumers groups and new forms of cooperatives,
- dissemination of the forms and rules of project management (new models of project management maturity),
- new role of leaders in strategic management of regions, organizations, command of military units.

On the operative level, POS is revealed through the following organizational phenomena:

- development of the team forms of organization for supporting creativity, innovativeness and quality improvement,
- dissemination of the new forms of innovation management and knowledge management in organizations,
- dissemination of the anti-corruption attitudes in organizations and social rejection of greed,
- conscious transition from the model homo economicus to the model of "wise man" (Stachowicz 2014),

changes in organizational structures considering group organizational forms.

POS refers to such important issues like: knowledge management, collaboration (on individual, group and organizational level), innovation and creativity. Dutton and Glynn also stress the fact that POS consider positive emoting in organization as the rational activity, not the bias of formally well-organized processes.

On the ground of POS many specific theories, approaches and concepts have been developed. One of the consider innovation, new knowledge creation and creativity. Innovative and entrepreneurial processes disturb the autopoietic (self-regulated) processes similarly to other processes and phenomena, being the result of disorders and disturbances in the environment, disadvantageously in relation to the assumed objectives. Thus, each organisation is characterised by necessary amount of freedom (deviation) from the state ensuring autopoiesis, but also a state which is a consequence of actions – an action net. This degree of freedom is autopoiesis level is, as already stated, the range of necessary innovations for its development. This level is dependent on the skills and entrepreneurial abilities of managers. Each organisation has a unique scope of this freedom. Hence, questions about the level of this range, scope and effects of the excess (e.g.. as a result of the learning process by double loop) are well-founded. Moreover, it is also

justified to consider the range of reference to new knowledge, creation of new knowledge in an organisation, to preferred moral and organisational values of the members of an organisation, to their positive attitudes, norms, value transformation phenomena in organisations. Innovation among organisation members is conditioned by their identification with the mission of an innovative organisation. Research on this problem was conducted by: M.J. Stankiewicz, J. Stachowicz and P. Zbierowski.

M.J. Stankiewicz and A. Glińska-Neweś implement the concept of Positive Organizational Potential (POP), defined as "..such state, levels and configurations of organizational resources which stimulate positive organizational climate and positive organizational culture in order to foster positive, pro-developmental employee behaviours". The authors identify nine areas of POP, considering them as subsystems:

1. Corporate governance,
2. Leadership,
3. Middle managers,
4. Trust,
5. Interpersonal relationships,
6. Talent management,
7. The language of interpersonal communication,
8. Organizational citizenship behaviours,
9. Corporate social responsibility.

P. Zbierowski (2010) build a model of high effective organization model consisting of the following elements:

1. Strategy – outstanding (clear and challenging) vision – thinking in the future tense, visionary goals posing challenges
2. Culture – relationships based on trust, social integration, improvisation (innovation, wide range of freedom to experiment, ability to change)
3. People – attracting exceptional (positively, internally motivated) people who are strongly committed, skilled in empowerment, involved in organizational leadership and citizenship
4. Structure – flexible (functional flexibility), decentralized, deformalized, flat and simple
5. Tasks – sharing information and knowledge, continuous improvement of new processes and products, creating value for stakeholders
6. Systems – fair remuneration and motivation; open communication, flexible systems across the whole organization

The elements of Positive Organizational Scholarship in the processes of technological entrepreneurship

The central area of the theory of entrepreneurship is to create and to explore new opportunities. The concept of an opportunity is well – developed in the management literature (Short, Ketchen, Shoop, & Ireland, 2010). Defining an opportunity depends on

the epistemological perspective which has been adopted, but most likely it is defined as "situations in which new products, services, materials, markets or methods of organization can be introduced through the formation of new meanings, practices or relationships". There are two main approaches to the analysis of a chance as a cognitive construct (Alvarez & Barney, 2007). Under the first approach the opportunity is discovered, it was a pre-existing element of reality. According to the second approach an opportunity is created, it is the result of entrepreneurial behavior and action. Process of entrepreneurship circulates around the opportunity category and is based on two, main phases: phase of creation/discovery opportunity and phase of exploitation of opportunity.

Technology entrepreneurship concept originates from the entrepreneurship theory, this phenomenon occurs when the development of science and engineering (consisting of the development of new technologies) forms a key element of opportunity, which allows generation of project, market, cluster or even the whole industry (Beckman, Eisenhardt, Kotha, Meyer & Rajagopolan, 2012). In other words, the phenomenon of technology entrepreneurship might be distinguished from the general characteristics of the phenomenon of entrepreneurship through its main characteristic that opportunities are enhanced by the development of new technologies. Technology entrepreneurship is strongly associated with the development of new technologies and in a result the development of new products and markets. The core of process of technology entrepreneurship is technological opportunity, and its main phases are creation/discovery of technology opportunity and exploitation of technology opportunity.

Three, the most common in the literature of management, features of entrepreneurial organizational orientation are: innovativeness, risk taking, and proactiveness (Covin & Wales, 2012). Innovativeness is the predisposition to engage in creativity and experimentation through the introduction of new values (i.e. new business models, products or services) as well as technological leadership through constant research and development activity. Risk taking involves taking bold actions by venturing into the unknown, often outside, and/or committing significant resources to ventures in uncertain environments. Proactiveness is an opportunity-seeking, forward-looking perspective characterized by the introduction of new business models, products and services ahead of the competition and acting in anticipation of future demand. Technology entrepreneurship orientation composites of the same features as entrepreneurship orientation but with strong emphasis put on technology opportunities.

The technology entrepreneurship process carried out by entrepreneurially oriented organization is being done within the environment. The most important feature of environment is level of uncertainty. Three the most often used in the literature dimensions of uncertainty are (Dess, & Beard, 1984): dynamism, complexity and hostility.

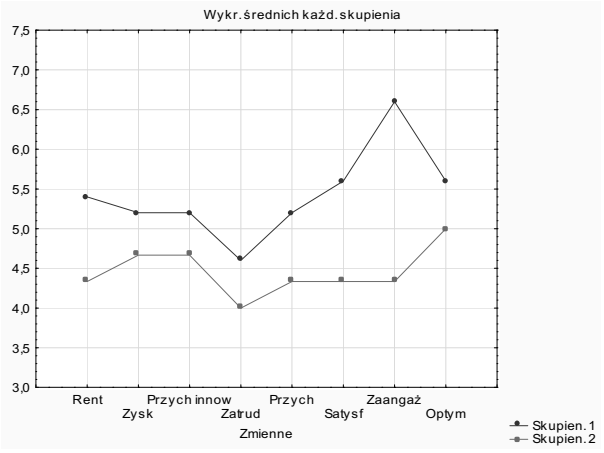
In knowledge based economy we can consider technology entrepreneurship as a key mechanism of building high – performance organization. Integrated frameworks of high performance organization concept has been presented by De Waal (De Wall, 2012). De Waal defines HPO as organization that "achieves results – both financial and

nonfinancial – better than the peer group in the period of at least 5-10 years". It seems to be clear that the multi-dimensional approach to performance must be applied.

The below scheme presents cluster analysis of start-up companies (the members of Aviation Valley Technology Cluster in Poland) according to multidimensional measurement of high performance organization.

Figure 1. Cluster analysis according to performance of start – up companies.

The evaluation of performance measurements in comparison with competitors (according to 7 points Likert scale)



The description of abbreviations: skupien. 1. – cluster 1 (high effectiveness organizations); skupien. 2 – cluster 2 (average effectiveness organizations); rent. – profitability of sales, zysk – profit, przych. innow. – share of revenues from sales of innovations, zatrud. - increase in employment, przych. – increase in total sales revenue, satysf. – level of satisfaction of employees from work, zaangaż. – level of engagement of employees in work, optym. – level of optimism of employees about the organization's development perspectives.

Source: prepared by the author with use of Statistica.

Two clusters of firms (i.e. high effectiveness organizations and average effectiveness organizations) are very similar according to objective, quantitative measurements and very different according to subjective, qualitative measurements (especially level of employees engagement). Subjective performance measurement embraces such organizational features like level of satisfaction, engagement and optimism. These social measurement of organizational performance are connected with positive organizational scholarship.

Comparing the entrepreneurial orientation and environmental features of clusters of high and average performance organizations, two the most important differences are as follows (Kordel, 2016): (a) high performance organizations take much less risk during development process, (b) high performance organizations perceive the environment as definitely non-hostile. Other features of entrepreneurial orientation (i.e. innovativeness and pro-activeness) and environmental (i.e. dynamism and complexity) are on the very similar, definitely positive levels.

The elements of Positive Organizational Scholarship in creative clusters

Clusters and especially creative clusters are the very promising area of POS, fulfilling a large number of theoretical POS premises. Clusters are mainly self-governed, they activities are generally based on the members needs and expectations. Even when the clusters is established by administration (top-down approach), cluster action must be adjusted with the rest of members with positive mechanisms of coordination.

Creative cluster is defined as: *"a group of cooperating organizations and individuals originating from local and regional societies, representing business, science, the arts, culture, education, health, entertainment and leisure activities. The cluster dynamics come from the creation of a regional identity, the innovative utilization of resources and a talent search with the protection and development of local and regional values. The creative clusters are the reservoir of creative resources and skills for other clusters and innovative environments." (Knop et al 2013)*

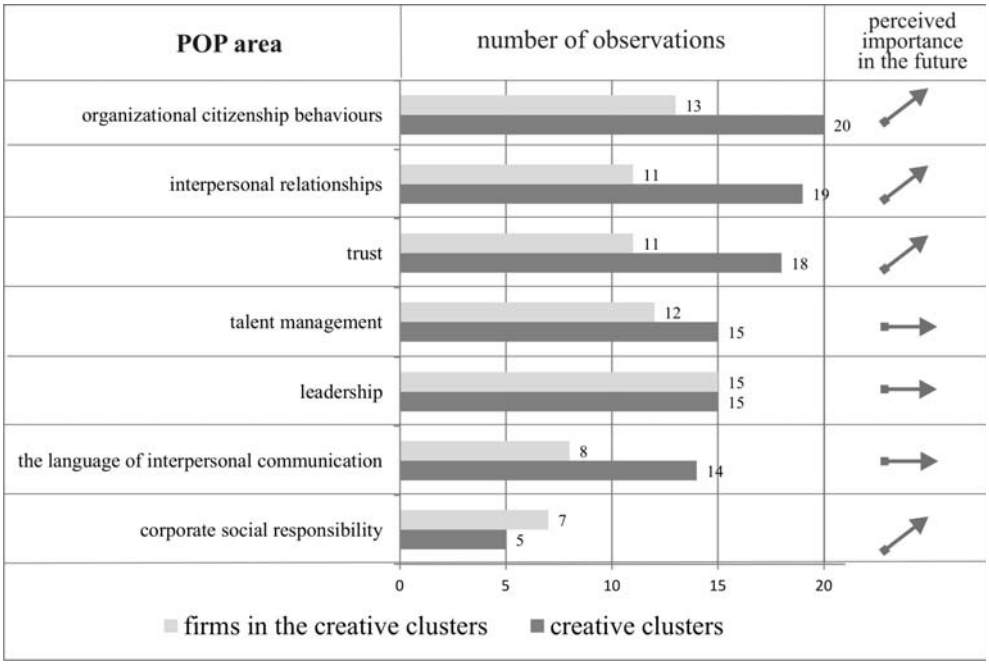
Another important definition of creative cluster were proposed by A. Klasik (2006): *"A creative cluster includes companies and non-profit institutions, public and business, cultural and research institutions and special places to meet and exchange ideas of individual artists and scientists, such as science parks, cultural centres and media centres. Creative clusters are places of life and work, places of production and consumption of products the material for which is intellectual property such as patents, new technology or processes, trademarks and brands, copyright and design work of various kinds."*

According to findings form the research, there were 294 clusters founded in Poland, among them we can identify 44 creative clusters. In the most of them the direct research were carried out gathering information about the essence of knowledge management in the cluster. In particular a semi-structured interview with the cluster coordinators/managers was carried out in 2016. A group of n=21 respondents took part in the interview, answering for 16 open questions that were a interview scenario. After the interview all of the content of the respondents' statements were recorded as a texts. Recorded texts were further analyzed.

As a contribution to the topic of the chapter the texts for the interviews was subject of analysis, reinterpreting the data for the purpose of the impact of POP on the management in creative clusters. To meet this goal, the authors analyzed the texts of interviews, searching for the characteristics (actions, behaviours, artifacts etc.) of POP. In the analysis the approach of nine key areas of POS were used, described by (M. Stankiewicz and A. Glińska-Neweś). Two of the theoretic areas: middle managers and corporate governance has very low rating because they were not adequate to clusters' situation. Most of the cluster firms are small and cannot fulfil the "corporate" rules. The area of middle managers is also not adequate to the cluster environment where the organizational structures are flat, sometimes without middle management. The same situation is on the cluster level where there is not middle management. Every statement of the respondents was rated as consistent (1) or inconsistent (0) with the POS characteristics. In the statements rated as "1" we can find some elements (behaviours, artifacts) consist-

ent with the POP characteristics. In the statements rated as "0" we can't find any elements consistent with the characteristics of POS. The analysis was conducted separately for the creative cluster as a whole (dark gray on the diagram), and the firms-members of the cluster (light gray). As the results of such analysis the diagram presenting the rating of importance of POP areas in the environment of creative clusters presented on Figure 2. The other important element of the analysis was estimation of perceived importance of the POP characteristics in the future. Based on respondents' statements every area of POP were rated as "growing importance" (arrow up), "stable, the same importance" (horizontal arrow) and "decreasing importance" (arrow down).

Figure 2. Estimation of importance of POP areas in creative clusters and firms-creative clusters' members (n=21)



Source: prepared by the author.

The most important POP areas are organizational citizenship behaviours and interpersonal relationship. This is consistent with the verified hypothesis of the research: relationships in the clusters have mostly informal character and they are based on interpersonal social ties. Of course trust is very important area and has the third position in the ranking. In the middle we can observe other areas like trust, talent management and the language of interpersonal communication. The language is more important as the way of communication between people within the cluster than between persons in the same organization. Probably it is more important to establish the language for ef-

fective communication within the cluster while in the same organizations the language is mostly already developed. The problem of communication have been many times stressed by the respondents oriented to establish "dialogue", "internal communication", "open communication forms" – as it was stated by the respondent.

The last position in the analysis has corporate social responsibility (CSR) – the concept just starting in clusters (creative clusters), that is why we cannot expect perceived high level of importance, however the perceived importance of the area in the future is growing. CSR is very important element of ethical dimension of knowledge management in the clusters presented by J. Stachowicz and S. Olko (2016).

Conclusion

Entrepreneurial approach to strategic management requires elaboration of strategy implementation methodology based on the three strategic domains (strategy, structure and business model) presented in the chapter. The main effect of presented research is the methodology developed by J. Stachowicz (2016).

Presented findings justifies the need for further exploration of practical aspects within new management paradigms (Stachowicz 2016) as well as methodology of network management (Stachowicz and Olko 2016). In the presence of highly unpredictable environment, when management organizations is on the edge of chaos (Brown and Eisenhardt 1998), the main force rationalizing actions and cooperation in organization is interpersonal trust.

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University mergers – Poland on the background of international trends

There are very rich experiences in the world regarding the consolidation of public universities, in the United States, most states have performed consolidation processes in the last decade involving both state universities and community colleges. The subject of the article is to find out the answer to the question about prospects for the implementation of mergers in Poland. The article presents a review of consolidation processes in the world and the condition of the sector and readiness for a wave of mergers.

Introduction

University mergers are an increasingly widespread phenomenon throughout the world. Consolidation of non-state universities is carried out on a commercial basis, most often as an initiative of the university itself or its founders. Mergers between public HEIs are sometimes implemented as a bottom-up initiative of the HEIs but increasingly as active implementations of public policy in the higher education sector. The list of countries with intensive consolidation processes among state universities can go on and on; the USA, Great Britain, Australia, Norway, Denmark, Finland, China, South Africa, Russia, Norway and others (Goedegebuure 2012, Harman, Meek 2002, Harman, Harman 2003, Skodvin 1999, HEFCE 2012).

The objective of this chapter is to find out the answer to the question about prospects for the implementation of mergers in Poland. The article begins with a review of consolidation processes in the world, then analyzes the condition of the sector and readiness for a wave of mergers. Final conclusions include the postulates of effective implementation of consolidation processes in science and higher education.

World experience in the consolidation of higher education sector

Early examples of mergers come from the United States, back in the nineteenth century[1]. Also in the US, we were dealing with the first wave of mergers involving both private and public universities. In the UK, consolidation in higher education increased in the second half of the 1970s and 1980s (Kavanagh, Ashkansay 2006). Another country with the wave of consolidation of universities in the 1980s was Australia. In the 1960s and the first half of the 1970s, universities were consolidated in the UK and Australia, creating a binary system, where colleges of advanced education functioned along the universities. Then in the 1980s, the governments of these countries used merger processes again to liquidate the binary system and replace it with a unified university system. In the 1990s, mergers were carried out in many European countries. The Belgians and the Norwegians were restructuring their colleges by merging the universities. In turn, the Finns have differentiated the sector by separating the polytechnics, also using the method of merging universities. University mergers were used on the large scale as a tool for implementing public policy in the 1990s in the Netherlands and Austria.

The European Union is conducting research on consolidation processes in EU member states. Between 2000 and 2015, over 100 mergers of universities in the European Union took place. The dynamics of merger implementation in Europe has been increasing since the beginning of the 21st century (Pruvot, Estermann 2014). Initially it was only a few mergers per year, whereas in the past few years, it is already several consolidations a year. The merger wave started in Northern Europe, i.e. in Denmark (2007), Belgium (2009–2011), Finland (2010) and France (2014–2015) (Estermann, Pruvot, Claeys-Kulik 2013). However, the current dynamics of the wave of mergers in the European Union continues to grow, taking on more countries.

There are very rich experiences in the world regarding the consolidation of public universities. In the United States, most states have performed consolidation processes in the last decade involving both state universities and community colleges. In many states, these processes are initiated through political decisions at the state level. Georgia, for example, has reduced the number of public universities through merger processes from 18 to 9 over the past five years (Jia 2017). Great Britain has been developing large-scale consolidation processes of universities since the mid-1980s. Scandinavian, French, Italian and German experiences, where the development of consolidation has led to a better international position of some universities and has been a fundamental method of university restructuring, are also positive. A positive example of such successful 'mega consolidation' was the creation of the Finnish Aalto University as a result of the merger of three public universities in Helsinki in 2010 (Tienari, Aula, Aarrevaara 2016, Pinheiro, Geschwind, Aarrevaara 2016). Currently in the webometrics ranking Finland is on the 10th position preceded, out of the EU countries, only by the Netherlands[2]. Nev-

[1] https://en.wikipedia.org/wiki/List_of_university_and_college_mergers_in_the_United_States

[2] http://www.webometrics.info/en/node/54

ertheless, criticism has also been raised that the strategic objectives of the three mergers in Finland have not been met (Nokkala, Välimaa, Westerheijden 2016). In France, several consolidation projects have been implemented since 2010, one of the objectives of the process is to select 5-10 French universities that can be included among world class universities. Currently, the change can be seen in the move of two French universities to the top 100 of the Shanghai list, and another eight – to the top 200 (Docampo, Egret, Cram 2015). Consolidation processes in the European Union are also taking place in Dutch, German and Italian universities (Barrier, Musselin 2016). In China, university mergers are realized through administrative decisions and are intended to reduce the dispersion in the sector and to increase the efficiency of scientific and educational activities. Since the beginning of the 1990s to 2005, 424 mergers were carried out, and after 2005 the consolidation processes have been intensified (Radulescu 2016). Likewise, consolidation mechanisms are being developed through merger support programs in Russia and the CIS countries (Chirikov 2013). The countries of our region, such as Romania, also carry out consolidation processes for public universities.

Polish perspective of university consolidation

In Poland, consolidation processes in the higher education sector are very incidental. However, it might be argued that the dispersion in the sector, implosion of education, deprivatization and public policy increasingly based on accountability will lead to a wave of mergers (Sułkowski 2015). In the non-state sector, the number of mergers is increasing because of the demographic low. Large, networked universities take over selected smaller entities. In the public sector, the wave of mergers will begin if the public policy stimulators implemented by the Ministry of Science and Higher Education are successful. Undoubtedly, consolidation will also be facilitated by a very large dispersion in the higher education sector, manifested by a relatively large number of specialized universities in the higher education sector (Table 1).

Table 1. Number of universities in Poland, by their profile.

No.	University profile	Number
1	universities	19
2	technical universities	18
3	medical universities (without postgraduate medical training centres)	9
4	agricultural / natural science universities	6
5	academies of physical education	6
6	economic universities	6
7	pedagogical universities	5
8	arts academies	5
8a	including: fine arts academies	19

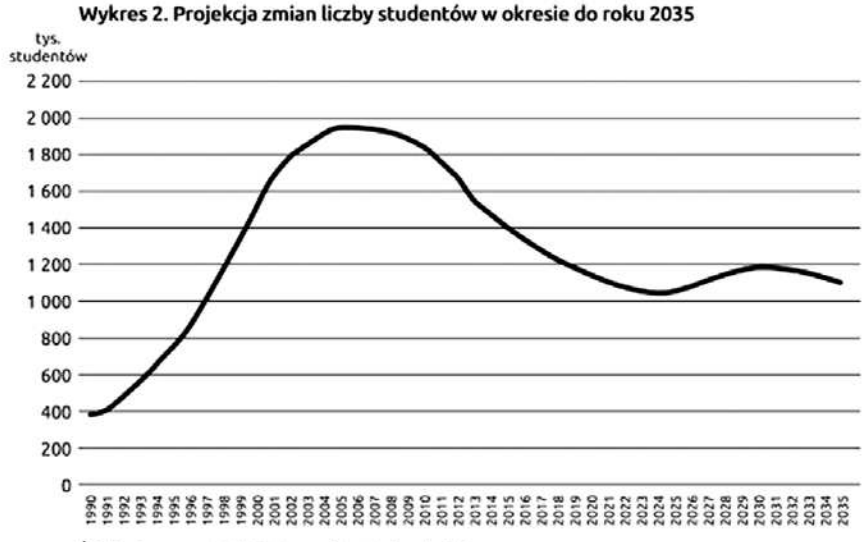
No.	University profile	Number
8b	musical academies	8
8c	acting academies	3
9	maritime academies	2
10	military academies	5
11	civil service universities	2
12	vocational higher schools	35
13	seminaries and theological universities	9
14	non-state universities with the permission to award the PhD degree	20
15	other non-state universities (active)	241
	TOTAL	401

Source: on the basis of POL-on higher education institution registry.

At the peak period there were more than 300 non-state higher schools in Poland, which provided education for almost 30% of all students. Such rapid growth of higher education was the answer to the growth in demand for higher education in the last twenty-five years in Poland. Due to the increasing demographic low and relatively high scholarization rate of young people, the demand for higher education gradually decreases after 2005.

The development of consolidation processes in Poland will also be facilitated by further deepening of demographic decline and a decrease in the number of potential students in the next decade (Picture 1).

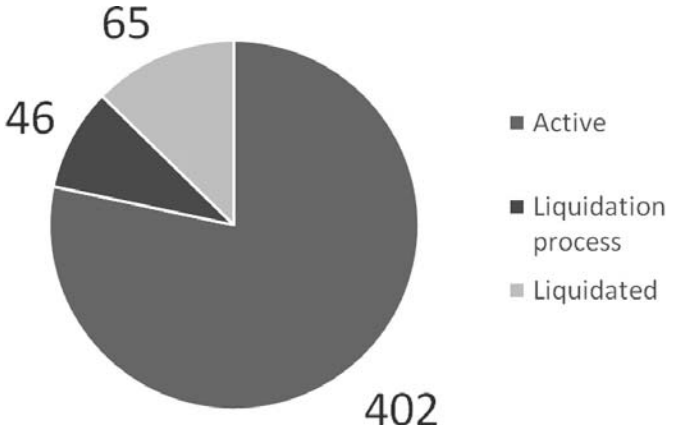
Picture 1. Projection of changes in the number of students in the period up to 2035.



Source: GUS.

Consolidation processes in the non-state sector are happening on market rules on a much larger scale than in the public sector. Over the past five years, the number of non-state HEIs has decreased by 46, while another 65 are in liquidation (Picture 2). Some of the universities just closed, the others were taken over by larger educational entities.

Picture 2. Number of universities in Poland in 2017.



Source: author's study on the basis of Ministry of Science and Higher Education data, 2017.

The number of public universities remains at the highest level in Poland, which is comparatively small compared to other countries as regards the number of citizens per one university. The few successful examples of university consolidation in Poland were the incorporation of the Medical University of Cracow into the structure of the Jagiellonian University and the merger of the Medical University of Bydgoszcz with the Nicolaus Copernicus University. Since 2016 the process of incorporating the State Higher Vocational School in Sandomierz into the structure of the Jan Kochanowski University in Kielce has been realized. Demographic trends and striving to improve the position of Polish science in the world should foster the development of consolidation processes in the coming years.

The Ministry of Science and Higher Education in Poland seeks to implement mechanisms that stimulate universities to undertake consolidation processes. The algorithm introduced in 2016 gives incentives for the merging of public universities, which should foster the universities' bottom-up merger decisions. The regulations provide additional funding for five years after the creation of a university as a result of a merger or a merger with another university. The basic donation will not be lower than 103% of the sum of basic donations awarded to the merged institutions during the merger year. The first university to benefit from this mechanism is the Jan Kochanowski University in Kielce, in relation with the 2016inclusion in of the State Higher Vocational School in Sandomierz into the structure of this institution[3].

[3] *National science congress*, Łódź, May 2016.

Conclusions

Finding the answer to the question about the value of the consolidation processes with the use of world-wide research results is not an easy task. The analysis of research results and world literature studies of the subject does not lead to unambiguous conclusions and leaves the researcher with a sense of ambivalence. Therefore, the conclusions should be formulated very cautiously, with the assumption that in Poland the consolidation experience is very small and the approach needs to be flexible and situation-based.

In many countries, consolidation processes have yielded positive results in terms of: increased research efficiency (grants, publications and implementations), increased visibility of universities and national systems in the world (positions in international rankings), or cost optimization. At the same time negative effects of consolidation related to: lower than expected efficiency of many mergers, resistance of the academic community, increase of bureaucratization of the university and weakening of academic culture could be noticed. The conclusion is that consolidation between higher education institutions can produce positive results, but the merger process should be effectively managed. This implies the need for a strategic analysis and then planning and implementing a consolidation strategy. Strategic analysis should focus on the complementarity of the universities and expected synergy effect. The focus of *due diligence* research should not only be finances, programs and scientific activities, but also human and intellectual capital as well as the image of the university. The planned strategy should be flexible, open and detailed in defining the roles and stages of managing the consolidation project. The key element of the implementation of mergers described in monograph is the integrated management of: finance and information, image and communication, human resources and organizational culture.

Participants of the consolidation project should be aware of the limitations and weaknesses of such organizational ventures. Basically, these types of projects always involve the risk that the targets may not be met in spite of the costs incurred. Thus, the decision to undertake the consolidation should be subject to several conditions. Firstly, from the point of view of the effectiveness of a merger between the universities, the will to merge is highly desirable. It allows to acquire change leaders and project teams responsible for making the change. It limits barriers and resistance to changes. Secondly, the prospect of achieving measurable, but also difficult to measure, results is important. A university that is in a more difficult position may be considering the consolidation with a stronger institution as a necessary restructuring method, and at the same time as a prestigious undertaking. Another example could be a merger between two or more strong scientific units that leads to an increase in academic standing, the creation of a research university or, most desirable, a world class university. Thirdly, resistance to the implementation of the consolidation project coming from the university and the environment should be taken into consideration. The source of the resistance is, on the one hand, the rational calculation of groups and social actors who believe the change can be bad for them, and on the other hand, conservatism is reinforced by traditional academic

cultures. The ability to reduce these consolidation barriers lies in designing, communicating, conducting, and assimilating (sensemaking) a positive change that will benefit many stakeholder groups. It is also important to focus on organizational culture, values and communication systems as well as human emotions. Contrary to the instrumentalizing language of management science, university consolidation is not just an organizational project ('projectification'), it also means the development of new values, bonds and subcultures that are not axiologically neutral. It is very important to draw attention to the identification of key stakeholders from the university in the project, leading to strengthening of the identity of the university. The final postulate is the stabilization of the change and evaluation of the results. As in the classic Lewin's scheme, even making such a revolutionary change like consolidation, requires the stage of unfreezing, then transitioning and finally re-freezing. Such stabilization is needed for the stakeholders of the university but also for the organization itself. Evaluation of results is simpler when it comes to measurable criteria such as: international rankings, finances (accountability) and measurable research results. It is much more difficult to evaluate the image aspects related with organizational culture, employee morale and intellectual capital. Attempts to conduct such analyzes are possible, but they usually have a subjective character, moving rather towards a narrative approach in which values and beliefs of social actors play a dominant role.

From the Polish perspective, that is a very dispersed system of higher education and science, we can conclude from international comparisons that consolidation in the higher education sector is inevitable. A safer solution is to allow mergers only between state universities or between private organizations. This will allow for the implementation of transparent financial policy in public management. In the group of non-state universities, which is the most dispersed, the consolidation will take place on a market basis. From the point of view of the public interest, the sooner it happens, the better. A large number of small non-state higher schools do not have adequate resources to provide quality education. The accreditation system, based on the domination of one strong institution, the Polish Accreditation Committee, is not fully capable of verifying the quality of education in a significant number of small programs and non-state institutions. Thus, with regard to non-state universities, public policy should support the consolidation processes by means of legislation but not financially. This means that legal regulations should facilitate the rapid acquisition of universities and their educational credentials. A stronger central intervention is needed in the group of state HEIs. It can take the form of consolidation facilitation at the regulatory level, but also supporting the stimulation of pro-quality consolidation with targeted funds. Consolidation scenarios among public universities will be many, though two trajectories seem to dominate:

1. a pro-quality merger of two partners giving the combined university or, possibly, the consortium of universities, a stronger scientific position or a promotion to the group of research universities,

2. a pro-quality merger of a weaker, financially or in terms of prestige, institution with a university allowing for retain some of the activities in departments of the combined entity.

The effectiveness of consolidation processes, as well as of the overall governance and management of science and higher education in Poland, can be assessed on three levels. The macro perspective reflects the degree of consolidation on the level of the whole Polish higher education system in a strategic perspective (e.g. 5-10 years). The measures of effectiveness will be, for example: the worldwide achievements of Polish science, the position of Poland in international rankings (of universities, economy, competitiveness), the costs of functioning of the system of science and higher education. The condition for effective stimulation of rational consolidation processes in Poland at macro level is making the results of the evaluation of science and quality of education of universities more real, as well as diversifying efficiency measures for different types of universities and developing pro-quality financial incentives. It is also important to make rational decision-making at central level and to maintain continuity in the realization of the reform of the system of science and higher education. The organic and fundamental level is the micro level, referring here to universities understood as organizations and management processes. The success of consolidation processes will influence the competitiveness of some Polish universities, both state and private ones. At this level, the effectiveness of managing merger projects, combining strategies with other functional areas of the academic organization, is localized. Academic order, whose framework is created at the macro level (central), is complemented by managerial solutions adopted by the universities themselves. Effective management systems, leadership skills, talent management, image creation and communication, and other organizational activities will allow for the improvement of some academic centers and probably lead to the marginalization of universities that do not professionalize management. The key component of micro-level management in higher education are people acting as social actors in different impact groups. Effective leadership, people management, human capital management and organizational culture are all conditions for effective management of the entire academic organization. Between the macro and micro levels, the mezzo perspective is embedded in the functioning of a university in the region, with its diverse roles: economic, social and culture-creating.

Summing up the considerations presented in this book, the postulates of effective implementation of consolidation at the level of the whole system of science and higher education (macro) and at the university level (micro) can be formulated. For the effectiveness of consolidation in the higher education and science sector in Poland, the following are necessary:

- a coalition of academic community around the need for rational consolidation,
- public policy stimulating pro-quality mergers (Winckler, Puukka, File, Holm-Nielsen, Marklund, Melin, Naczynski, Ziarko 2017),

- accountability system based on performance,
- in-depth scientific analysis of the effects of consolidation in science and higher education systems worldwide,
- relying on global research and benchmarks.
- positive examples in Poland and supporting in management processes of merger projects.

At the micro level, effective implementation and realization of mergers between universities in Poland, which will lead to the achievement of pro-quality objectives, will be facilitated by the following:

- effective management of merger projects,
- convincing universities undertaking consolidation activities of the added value resulting from the merger,
- participation of key stakeholders in the consolidation process,
- support from the international, public and business experience of the university with regard to the effective implementation of relations between higher education institutions.

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Synergy in development strategies of business enterprises.

A Framework of the Study Project

The article develops an idea of the comprehensive study project devoted to the problem of synergy in development strategies of business enterprises. On one hand, the phenomenon of synergy and the attempts to achieve synergistic effects have become a kind of must for majority of contemporary managers. On the other hand, the knowledge and practice of the implementation of synergy in a strategic process still seems limited and sketchy. Parting from this general observation the main goal of the article is to build a framework of the study project which might lead in final to establish foundations of an analytical and operational procedure to harness synergy for business development strategies. A set of basic assumptions, questions, hypotheses, goals of the project is expanded, and the overviewed research model is presented.

Introduction

Synergy, or rather pursuit to benefit that phenomenon has been unconsciously underlying the business activity since ever. The breakthrough took place when the awareness of synergy and its essence (iconic "2 + 2 = 5", or "1 + 1 > 2") has appeared. A cognitive distance between business people and the phenomenon of synergy gave birth to a purposeful and deliberated inclusion of synergy into a development process of a business enterprises. However, to make it possible special conditions to generate specific synergistic effects must be created. For many reasons, starting from the vague nature of a synergy, those conditions are hard to be established and their absence leads to the situation in which synergistic effects remain mostly normative and hypothetical. It means that they are recommended and feasible, but less possible, and difficult to be identified and quantified. Activities to obtain synergistic effects are performed in a restricted manner, based on presumptions rather than hard evidences, because of the limited possibilities to separate synergistic effects. Meanwhile today's managers, having realized the competitive advantages stemming from harnessing synergy for the development strategies,

eagerly started to run for synergistic effects. Nevertheless, those endeavors are quite often not backed-up by a solid knowledge of a synergy phenomenon, neither accompanied by proper activities nor instruments to make synergistic effects more predictable and measurable.

Considering the above indicated circumstances the main goal of this paper is to categorize the key issues and questions faced by contemporary managers who attempt to make use of a synergy as a vital element of development strategies to be formulated and/or already introduced by their firms. It is assumed that those problems should be addressed and solved in a right sequence, i.e. perceived like a coherent system of managerial actions. In terms of a study project it requires to develop a research model – a set of questions, hypotheses, goals, and studies to be fulfilled and verified within a framework of theoretical, methodological, and empirical aspects of synergy in development strategies of business enterprises. This presentation is not aiming at answering the key questions and problems to be explored and solved but it is focused on the best way to organize the research process (*modus operandi*) according to the rules of a scientific study.

Questions and Hypotheses

Putting the problem of synergy in development strategies in terms of a study project it requires to start with a set of research questions and hypothetical answers (hypotheses). It is assumed that in the planned study the three comprehensive groups of such questions (Q1-Q3) and hypotheses (H1-H3) should be addressed. Generally, they refer to the following issues:

1) The nature of a phenomenon of synergy in business management and the relations between synergy and development strategy.
2) The limitations and possibilities to deliberately generate synergistic effects as an outcome of business development strategies.
3) The ways to verify (confirm) a usefulness of the recommended approach to asses/generate synergistic effects by a business enterprise for its strategic purposes.

The key question referring to the first issue is:

(Q1) How are synergy and development strategies of business enterprises interrelated?

To answer this question, it is necessary: (1) to analyze the nature of synergy looking for its strategic premises, (2) to develop a strategic concept allowing to turn the idea of synergy into real synergistic effects. As it was mentioned in the Introduction numerous studies confirm a vital interest of contemporary managers to benefit that phenomenon while competing for the future of their businesses. They develop strategies that more, or less explicitly point out synergistic effects as feasible and desired ones. The concept of **building a synergistic potential** seems to be an appropriate proposal to transform the synergy as a strategic idea into synergistic effects. At the initial phase, i.e. constructing the research framework one may assume that building a synergistic potential means

the set of analyses, activities, and solutions based upon strategic premises of a synergy and carried on by managers. Above mentioned tools and operations should identify and strengthen existing and possible relations of convergence, complementarity and compatibility among agents which can substantially increase the probability to obtain synergistic effects. It is worth to mention that building a synergistic potential of business enterprise refers to both, internally- and externally-bounded analyses, activities, and solutions.

In compliance with above presented reasoning the hypothesis directing studies at the first, **theoretical stage** of the project is following:

(H1) Shaping the synergistic potential is an essential condition to benefit synergy in development strategies of business enterprises.

The limitations and possibilities to deliberately generate synergistic effects as an outcome of business development strategies, i.e. the second group of questions and hypotheses to be addressed is more practically oriented and can be straightforward expressed as a key managerial problem:

(**Q2) How to moderate/overcome difficulties to implement synergy in development strategies**? Partial and more general answer to this question should stem from the formerly developed concept of building a synergistic potential. However, to facilitate this concept it requires to adapt appropriate analyses, procedures, or even step-by-step algorithms to make synergistic effects real. Due diligence performed in mergers and acquisitions is one of the examples of such analyses. One may presume that other similar instruments can be also devised within the project.

Following the idea of mitigation difficulties and facilitation of making use of synergy in development strategies and deliberately generate synergistic effects, the leading hypothesis at the second, **methodological stage** of the project is following:

(**H2) A set of tools and measures – solutions helping managers to identify and quantify synergistic effects of development strategies – can be formulated and introduced.**

Logically taking, the verification, or hopefully confirmation of the conclusions drawn throughout the project makes the last, third group of research issues. They may be articulated altogether in the question:

(Q3) Does building a synergistic potential and an application of the proposed analyses and procedures support harnessing synergy for development strategies of business enterprises?

The evidences confirming correctness and usefulness of the research proposals and recommendations will be considered within the two-fold perspective. The first set of cases will comprise examples of business enterprise that have already implemented development strategies aiming at synergistic effects. Nest, the second set of cases comprising examples of business enterprises that are going to, or could implement synergy-oriented business strategies would be examined.

Considering an idea of the verification of researched results the leading hypothesis of the third, **practical stage** of the project can be formulated as follows:

(**H3) Selected studies illustrate benefits of the recommended approach and confirm its usefulness in harnessing synergy for business development strategies.**

The set of research questions and hypotheses allows to put through the whole project, starting from its initial, theoretical stage, then entering the methodological (instrumental) stage, and finally reach the practical stage of empirical verification. Planned studies and expected evidences are going to confirm the general hypothesis:

(H0) Substantive and methodological premises to build a useful and coherent procedure of harnessing synergy for business development strategies can be designed and pursued by managers to achieve synergistic effects.

Goals and studies

The project will be run at three levels (stages) which allow to realize three basic goals (G1-G3) closely associated with the hypotheses presented in the previous chapter. As it has been already mentioned there are the following planned levels of studies and research:

- **(**A) Theoretical Level.
- (B) Methodological Level.
- (C) Empirical Level

(A) Theoretical Level

Theoretical insights at the first (A) level will serve to:

(G1) Define the essence of synergy, with focus on strategic management, i.e. formulation, implementation, and assessment of business development strategies that make use of synergy.

Regardless the managerial focus of the project theoretical insights into synergy will start from an **economic perspective** as fundamental for each business entity and its basic activities. Such perspective gives a broader picture of this phenomenon, including historical evidences of a presence and growing significance of the synergy in the most meaningful economic theories and approaches. The already done studies in economy yield a set of conclusions important to the project, e.g.:

- Classic economists had made references to the approach which is based not only on the increase of measures and/or forces in use to manufacture more, but also on the efforts to particularly integrate them in coherent procedures (e.g. technologies making use of division of labor). Thus their combined effect could be greater than a simple sum of their individual effects[1].

[1] W. Petty, one of the precursors of classic economy stated, referring to the relation: man – land – capital, that a nation of eight million people is more than twice richer than a nation of four million people inhabiting the same territory. W. Petty, *Traktat o podatkach i daninach* (*A Treatise of Taxes and Contributions*); (in): *Merkantylizm i początki szkoły klasycznej. Wybór pism ekonomicznych XVI i XVII wieku*, Warszawa 1958. Other classic example of a specialization (division of labor) that multiplies the quantity of final output is the famous pin making factory. A. Smitha, *An Inquiry into the Nature and Causes of the Wealth of Nations*, http://www.gutenberg.org/files/3300/3300-h/3300-h.htm (retrieved June 27, 2017).

- The neoclassical Marshallian model of the firm had introduced organizational activity of an entrepreneur as an additional factor of production, which combined with remaining factors (land, labor and capital) creates brand new possibilities to influence the results of functioning and development of business enterprises[2].
- The essence of innovations according to the Schumpeterian theory of innovations consists in a combination of factors of production, bringing them about integration by entrepreneurs who take a step beyond a static, daily routine to reach the new goals[3].
- A widely approved idea of transaction costs, underlying the powerful, institutional approach, introduces a complex context of their minimalization, including the synergy promising relation between the costs of market transactions and the costs of internal operations performed by a business enterprise[4].
- A set of frequently discussed economic theories and approaches develops the concepts of an efficient, "qualitative" use of resources. These concepts go beyond the limitations of a conventional optimization and allocation of resources[5]. A new approach to the cost minimization and cost-efficiency relationship also makes path to the deliberated synergistic effects as an outcome of the redefined business development strategies.

The studies on a **management perspective** of the synergy in business activities will be focused on a development of the strategic management which seems to be a convenient platform to trace, but also illustrate some of synergistic effects. Following a conventional approach to the evolution of a strategic management a set of initial conclusions concerning synergy and synergistic effects can be drawn:

The planning approach to the strategic process gave birth to an explicit introduction of the synergy as a new element to build business strategy (H.I. Ansoff). What it is more, the general rules to shape diversification strategies based upon the synergistic idea have been proposed and a threat of the negative synergy (dissynergy) stressed[6].

The evolutionary approach (H. Mintzberg), which heavily criticized the usefulness of a static strategic planning, did not denied the idea of synergy in crafting strategy, but enlighten the whole strategic process from different points, pointing implicitly the dynamic complexity of reaching for synergistic effects with emerging strategies[7].

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[2] A. Marshall, *Principles of Economy*, London, 1920, 8th edition.

[3] N.W. Balabkins, *Adaptation Without Attribution? The Genesis of Schumpeter's Innovator*; (in): *Joseph Alois Schumpeter. Entrepreneurship, Style and Vision*, J. Backhaus (ed.), Dordrecht 2003, p. 209.

[4] R. Coase, *The Nature of the Firm*, Economica, New Series, Vol. 4, No. 16. (Nov. 1937), p. 386-405.

[5] One of the examples of a disputable but inspiring idea is rendered by the X-Efficiency theory. See more: H. Leibenstein, *Beyond Economic Man*, Cambridge, MA 1976.

[6] H.I. Ansoff, *Corporate Strategy. An Analytic Approach to Business Policy of Growth and Expansions*, London 1965, p. 75 et passim.

[7] H. Mintzberg, J.B. Quinn, *The Strategy Process. Concepts, Context, Cases*, Englewood Cliffs, NJ 1991, 2nd edition.

The strategic positioning approach brings back synergy as a vital component of a strategy building and declares the need to reexamine an attitude toward synergy. M.E. Porter writes that "economic, technological and competitive developments are increasing the competitive advantage by those firms that can identify and exploit interrelationships among distance but related business"[8]. Additionally, the value chain concept becomes a useful and efficient template for business entities putting together the value creation process and the pursuit of synergistic effects.

Resource based approach as a next step of the strategic management evolution emphasizes the importance of the firm's internal competences and capabilities (the VRIN concept) as a source of building the competitive advantage[9]. A key role of the firm's intangible assets, especially the accrued organizational knowledge seems to stimulate and broaden new, resource- based practices of attaining synergistic effects as a crucial component of competing for the future.

Management perspective of the synergy in business activities also reveals the **phenomena that are close, similar, or related to the synergy** as far as the nature of final (combined) effects is regarded. These phenomena are usually generated by contemporary managers upon a base of certain levers (gears) that gain extra results, or at least a potential to attain them. Referring to interrelationships between development strategies and synergy the phenomena that are to be explored at the initial level of the studies comprise:

- Economies of scale.
- Economies of scope.
- Learning effect and the curve of experience.
- Network effect.
- Competence leverages – a technological leverage, product-market leverage, business model leverage.
- Organizational ambidexterity.

On a leading assumption that the main goal of a business enterprise is to create and maximize the value in a long run for possibly a large group of its stakeholders[10], an identification of the **internal and external sources of synergy**, as a next step at the theoretical stage of the studies, will be performed in a context of the value creation pro-

[8] The cited author stresses that "These interrelationships are not the fuzzy notions of "fit" which underlay most discussions of synergy, but tangible opportunities to reduce costs or enhance differentiation in virtually any activity of the value chain". M.E. Porter, *Competitive Advantage. Creating and Sustaining Superior Performance*, New York 1985, p. 318.

[9] J. Barney, *Firm Resources and Sustained Competitive Advantage*, Journal of Management 1991, Vol.17, No. 1, p. 99–120.

[10] A concept of the value creation and maximization in a long run for possibly a large group of its stakeholders stems from the original idea of A. Rappaport (Creating Shareholder Value: A Guide for Managers and Investors, New York, NY 1997).

cess. The two groups of value-oriented, **selected strategies** will be examined from the perspective of a synergistic potential building:

Strategies built upon the processes of an internal growth – integration, insourcing, restructuring of a business enterprise.

Strategies built upon the processes of an external growth – outsourcing, strategic alliances, mergers and acquisitions.

A final task of the theoretical stage will be to build a framework of the analytical model tentatively denoted as the **3S Model**: **Strategy – Synergy – Structure**. The model is rooted in a conventional and classic idea of an organizational structure that follows strategy[11], emphasizing synergy as a catalytic component and one of the mechanisms of this process. The 3S Model seems to be useful both, in an analysis of the interrelationships between synergy and development business strategies, and in managerial practices of building synergistic potential and reaching for combined effects.

(B) Methodological Level

The main goal at this level of the planned studies is to:

(G2) Explore limitations and capabilities to benefit synergy in development strategies of business enterprises.

At the current stage of the study it is assumed that at least three groups of above mentioned limitations should be examined. All these limitations emerge directly from a vogue nature of the studied phenomenon. They include:

- Poor recognition of the interrelationships between synergy and business development strategies.
- Difficulties to separate synergistic effects from other additional results of a business activity.
- Scarcity of tools and methods to evaluate synergistic effects – the applied instruments rather trace synergistic effects as possible, but they do not precisely evaluate them.

Analysis of the methodological capabilities to benefit synergy in business development strategies will focus on:

- Traditional 3-stages procedure of measuring synergy which is based on financial results (lowering costs or increasing sales of a diversified business enterprise)[12].
- Value-based approach which refers to the value maximization through changes within a business value chain.
- Balanced Scorecard approach introducing an idea of the corporate alignment[13].

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[11] A.D. Chandler, Jr., *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*. Cambridge, MA 1962.

[12] M. Romanowska, *Planowanie strategiczne w przedsiębiorstwie*, Warszawa 2004, p. 102–110.

[13] R.S. Kaplan, D.P. Norton, *Alignment: Using the Balance Scorecard to Create Corporate Synergies*, Boston, MA 2006.

At the end of the methodological stage of the studies a development of the Synergy Due Diligence framework is expected.

(C) Empirical Level

The main goal of this stage is to:

(G3) Analyze selected business cases – looking for synergistic effects and their evaluation.

It is assumed that altogether 12 selected cases will be analyzed. The cases will consist of two groups:

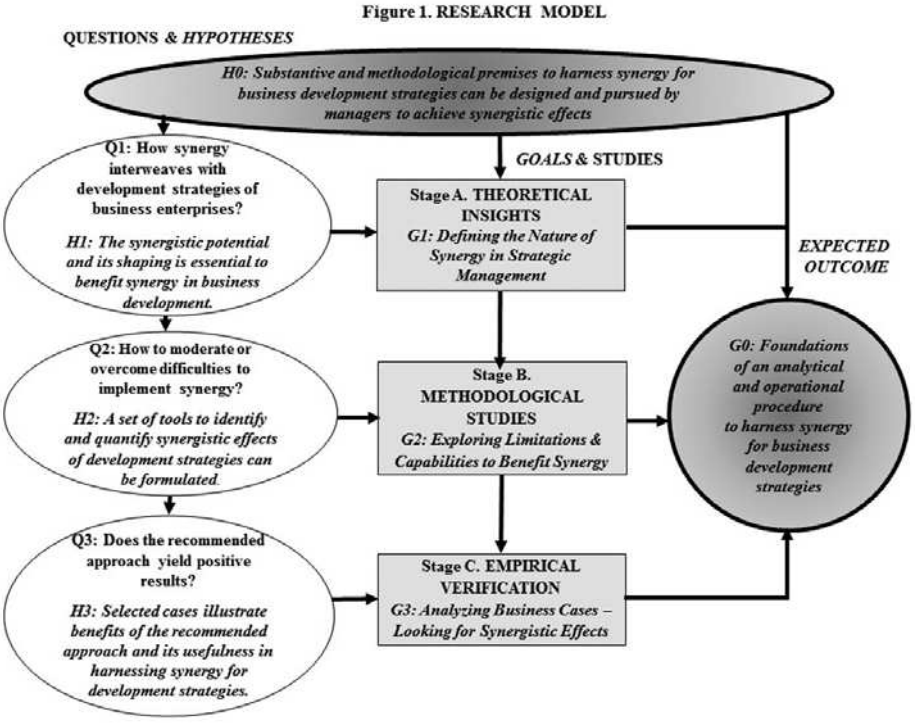
- The first group of 6 cases will serve for an assessment of the already **effectuated strategies**. There will be 3 examples of strategies based on an internal growth (an integration, insourcing, and restructuring), and 3 examples of strategies referring to an external growth (an outsourcing, strategic alliances, and mergers and acquisitions). This will help to develop an *ex post analysis* of the gained synergistic effects (if any).
- Similarly, the second group of 6 cases will serve to develop proposals of **new strategies, not introduced yet**. This, in turn, will help to practice an *ex ante analysis* of planned synergistic effects.

Regardless of the main goal of the final stage the intended analyses will also serve to verify the correctness and usefulness of the concepts and proposals forged at the theoretical and empirical levels of the study.

Research Model

The set of questions, hypotheses, and goals discussed so far can be presented within a straightforward framework showing a step-by-step analytical procedure to attain assumed research results (Figure 1). As it can be seen the main goal, or in other words the expected outcome of the project is to:

(G0) establish foundations of an analytical and operational procedure to harness synergy for business development strategies.



Source: prepared by the author.

Methodological Remarks

The planned study is a vast and complex research project. It requires to:

- Establish a comprehensive theoretical background.
- Build analytical models.
- Develop proposals of appropriate instruments and procedures.
- Verify the models and proposals applying them to the selected business cases.

A profound studies and analyses will be the key method to establish a theoretical background, as well as build analytical models. The proposed instruments and procedures to harness synergy for business development strategies will be developed upon the evaluation of limitations and capabilities of tools and measures available and applied in management practice. Final verification of the models and proposals requires a direct contact with the process of crafting business strategies and managers who are involved in this process.

Conclusion

Due to the project complexity a research team of 4–5 specialists in an organizational management (skills and competencies in strategy development, marketing, corporate fi-

nance, M&A) should be the best choice. An additional insight and support of managers and consultants is strongly recommended and it would be invaluable.

A tentative time schedule of the project is 12–18 months. The Project might be co-funded by business organizations and scientific institutions (programs).

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The Economic Foundations of Outsourcing Under Condition of Destabilization in Selected European Countries

The destabilization in today's business environment requires placing an increase attention on stability of the country to handle the risk in the appropriate manner. The analysis of underlying economic indicators is conducted here with the aim of building the model to predict future positions of analysed countries in the business process outsourcing market. The countries need to compete to attract the foreign investments. The ability to identify what economic parameters are considered by companies wishing to outsource their operations is crucial to improve the countries competitive advantage.

1. Introduction

Outsourcing is a vital business process and is a subject of numerous publications. Decision making process, whether and where to outsource companies' non-core activities, is a subject to individual decision of each investor. As stated in research provided by Teczke, (2014) the shape of the current world is not influenced by globalization process, but political, economic and social destabilization. Destabilization created society where risk is a strong driving force, the society relying on the expert's knowledge. Despite of the fact that uncertainty might be mitigated by the free access to diverse sources of knowledge, such knowledge is specialized and not utilized efficiently, when assessing either social or economic factors. Therefore, the current world is characterized by unpredictable environment conditions. Consequently, destabilization leads to the perception of country attractiveness from the perspective of particular situation.

Two existing theories, Transaction Cost Economics (Williamson, 1985) and Resource-Based View (Peteraf, 1993) help to understand main motives of outsourcing decisions. Based on various theories and also individual perceptions of the business environment numerous rankings of the countries were proposed, (Delloite, Cushmann

and Wakefield, ABSL just to mention a few) showing competitive advantage of various European countries.

Authors of this article would like to indicate major factors, that could be used in the outsourcing decision process, which are grouped into cost, risk and conditions categories. Further, authors would like to show how change of weights put on these factors influences the view of the country attractiveness.

2. An overview of the literature in the subject of outsourcing

The trend of outsourcing or offshoring is strongly present in today's reality. Significant volume of research papers is available on the subject. Unfortunately, the results are fragmented and unified view needs considerable synthesis effort (Mihalache & Mihalache, 2015). The benefits of outsourcing are clearly the driving force behind the growing trend that is observed in the global environment. However, the risk is always present when the profit is to be achieved. The quantitative analysis is presented by Zhu (2016). The impact of cost as well as quality and market lead time is analysed there and the game theory utilized in the decision-making process modelling. Outsourcing of company operations provides the possibility of reducing the fixed costs that include equipment and salary costs into variable cost represented by the invoiced amount charged by the supplier. The reduction of overhead costs is possible by introduction of outsourcing. Not only the costs are typically reduced, but also risk is transferred to the service provider (Giertl, Potkany & Gejdos, 2015). Unfortunately, the benefits are often lower than these predicted in the outset, therefore the costs and benefits need to include all elements, in particular additional costs of management of the supplier. There are numerous definitions of outsourcing. Examples of them are presented in Table 1.

Table 1. Definitions of outsourcing

Author/s (year of publication)	Definition of outsourcing
Bailey et al. (2002)	Handing over some or all of that particular activity and related services to a third party management, for the required result.
Blumberg (1998)	Process of making contracts with a third party to handle a part of the client firm's business.
Campos (2001)	It consists of contracting an external supplier to perform a task previously executed by the organization itself, and may also even involve new activities.
Casani et al. (1996)	Long-term link related to the development of determined activities or tasks that are not essential to the firm by specialized professionals, who, in time, become strategic partners.
Gilley and Rasheed (2000)	It is the substitution of activities performed in-house by acquiring them externally, although the firm has the necessary management and financial capabilities to develop them internally. It is also an abstention from performing activities in-house.
Greaver (1999)	The act of an organization transferring periodic internal activities and decision-taking to external suppliers through contracts

Author/s (year of publication)	Definition of outsourcing
Lei and Hitt (1995)	The act of trusting in external capabilities and skills for the manufacture of determined production components and other activities that have added value (often capital intensive).
Loh and Venkatraman (1992)	External vendors' provision of physical and/or human resources associated with the user organization's information technology infrastructure.
McCarthy and Anagnostou (2004)	Not only consists of purchasing products or services from external sources, but also transfers the responsibility for business functions and often the associated knowledge (tacit and codified) to the external organization.
Mol et al. (2005)	The procurement of supplies from legally independent entities (suppliers).
Quélin and Duhamel (2003)	The operation of shifting a transaction previously governed internally to an external supplier through a long-term contract, and involving the transfer to the vendor
Quinn and Hilmer (1994)	External acquisition of activities, including those traditionally considered an integral part of any firm, provided that they do not form part of the firm's core capabilities.
Rothery and Roberson (1996)	The act of turning to an external organization to perform a function previously performed in-house. It entails the transfer of the planning, administration and development of the activity to an independent third party.
Sacristán (1999)	Collaboration agreement between different types of firms in which one firm is a specialist in technology and makes a significant contribution to the other by providing physical and/or human resources during a certain period in order to attain a determined objective.

Outsourcing became popular as a new trend of sending unskilled work from developed countries to developing countries. As stated by Khan & Bashar (2016) at the beginning, the major benefit of outsourcing was related to the significant decrease in operational cost which was obtained by offering lower, by half the usual amount, salaries to their offshore outsourcing partners. (p. 191-207).

There are two existing approaches, when it comes to outsourcing:

- Business Process Outsourcing (BPO),
- Shared Service Centers (SSC).

Those are often used in exchange although have a different meaning considering the client. In general, BPOs offer services for external clients while SSC are separate entities, but within the same company and covering service for internal client (Budzynska K., 2012).

Click and Duening (2005), defines BPO as "being the movement of a business processes from within the organization to external service providers". Wanyama (2016) defines BPO as "the act of transferring some of an organization's repeated non-core and core business processes to an outside service provider so as to achieve cost reduction while improving the business service quality".). G2R, TPI, and Milbank, Tweed, Hadley & McCloy LLP (1998) define BPO as "the delegation of one or more IT-intensive business processes to an external provider who, in turn, administrates and manages the selected processes based upon defined and measurable performance metrics".

On the other hand, SSC, refers to the creation of a single, "accountable entity in the internal organization of a firm or institution tasked to deliver specialized services to the operational units on basis of a service level agreements against set transfer prices" (Bondarouk, 2014). In other words, SSC is the autonomous business unit to provide services which were previously supplied independently, "on-site".

The interesting recent trend observed in outsourcing area is to outsource not only low skilled processes, but the core business functions. Such an approach leads to cost cutting or downsizing, as well as, to gather better well-skilled experts to produce high quality solutions. Outsourcing offers qualified people who have the skills, required by the business along with tools and methodologies. As a result, business processes, which were not considered to be outsourced a couple of years ago, have now become a part of standard portfolio of shared service centres.

Another visible trend which attracts management teams to use BPO services is the move towards standardization. The economic crisis of the recent years put in favour structured and simplified solutions over client customized services, managing of which is more expensive and too complex. What's more, in order to offer value added to their clients, BPOs started to introduce process automation. Such approach creates additional opportunities and reduces their staff and become more efficient and accurate. The next opportunity coming with outsourcing implementation is flexibility in adjusting a project size. Nowadays, not only significant size projects are sent off the company but it became more and more popular to look for flexible and specialized solutions to support business. Outsourcing of smaller projects help companies to retrieve their businesses after economic crisis in a short time period (Porter, Kramer, 2011).

3. Research methodology and research model

This thesis focuses on answering how Resource Based View of the firm (RBV) and Transaction Cost Economics (TCE) theories were utilized as a basis for the growth of the outsourcing in Europe and what are the possible future trends resulting from adoption of these major theories. The review of the academic literature given earlier as well as the practical part in this work is focused on the past decade as it is believed that the recent changes in technology and global trends justify such an approach.

The analysis presented in this work attempts to quantify the benefits of the outsourcing based on selected measures. It is analysed to what extent the general movement of the outsourcing market attempts to support the survival of the business by reducing the cost to the essential minimum. On the other hand, it is assessed how companies try to reach the best know-how that exists on the market by outsourcing to the partner company that specializes in the outsourced process and possesses the know-how and bullet-proof automated processes. The global outsourcing companies are located in countries or cities that have access to the best people supplied by top education institutions functioning there. In addition, the risks of the business operation matters and means a lot. The smooth operation of national/government institutions is

a key to the success of the business and the indices that monitor the risk levels will be analysed. The monetary and non-monetary benefits are therefore compared in order to prove that the non-monetary benefits are now becoming increasingly important for the customers interested in outsourcing of the business processes. The regional background of outsourcing locations is thoroughly considered and possible future trends forecasts given.

To provide the indication of how future position of countries where companies outsource their operation will likely change it is necessary to concentrate the attention on quantitative investigation of the relationship between the macroeconomic data and decision process of individual market players. It is already well established, that with an advent of the cheap and efficient telecommunication and data connections, the world had collapsed to the size of a compact global village. It allowed companies to outsource substantial portions of their operations to the locations that provide lower labour rates to stay competitive. However, some companies had seen such strategies as risky and decided to cooperate within geographically or culturally closed environment. Finally, some companies decided to keep their complete business in the high-cost locations as they see the risk of communication misunderstandings and lack of collocation as being too high. The process of opening the barriers and the fact that all market players have already gone this way reduced the financial savings' impact of the outsourcing. This financial incentive was historically the initial trigger for the process. In today's more mature environment, the attention is turning towards the quality of the service and the risk mitigation. The outsourcing enables companies to reduce their exposure to long term investment in the infrastructure and staff. It enables them to be agile and mobile, providing a feasibility to freely move between countries. In case of negative impact of a political situation in a concerned location, the company that runs most of their operations through outsourcing partners would much easier relocate compared to the company with investments in the brick and mortar with the army of unionized employees.

The research carried out in this article is based on the synthesis of the available statistical data. On one hand the well-recognized and accepted statistics published by World Bank or Eurostat are going to be used. On the other hand, the outsourcing area is quite specific and for more specialized information, international statistics organizations do not collect sufficiently relevant information. It is important that the data relating to various countries is comparable and the harmonized methods for data collection between these counties are adopted. Therefore, as a data source only an international institutions/organisations are considered. Only the data that are published collectively in one coherent report is used. For example, the national statistics data collected from various national sources was excluded from the analysis, since there is no assurance of uniformity. The uniformity is important since the thesis will focus on comparative approach. The following statements will essentially form the basis of the investigation presented in this article:

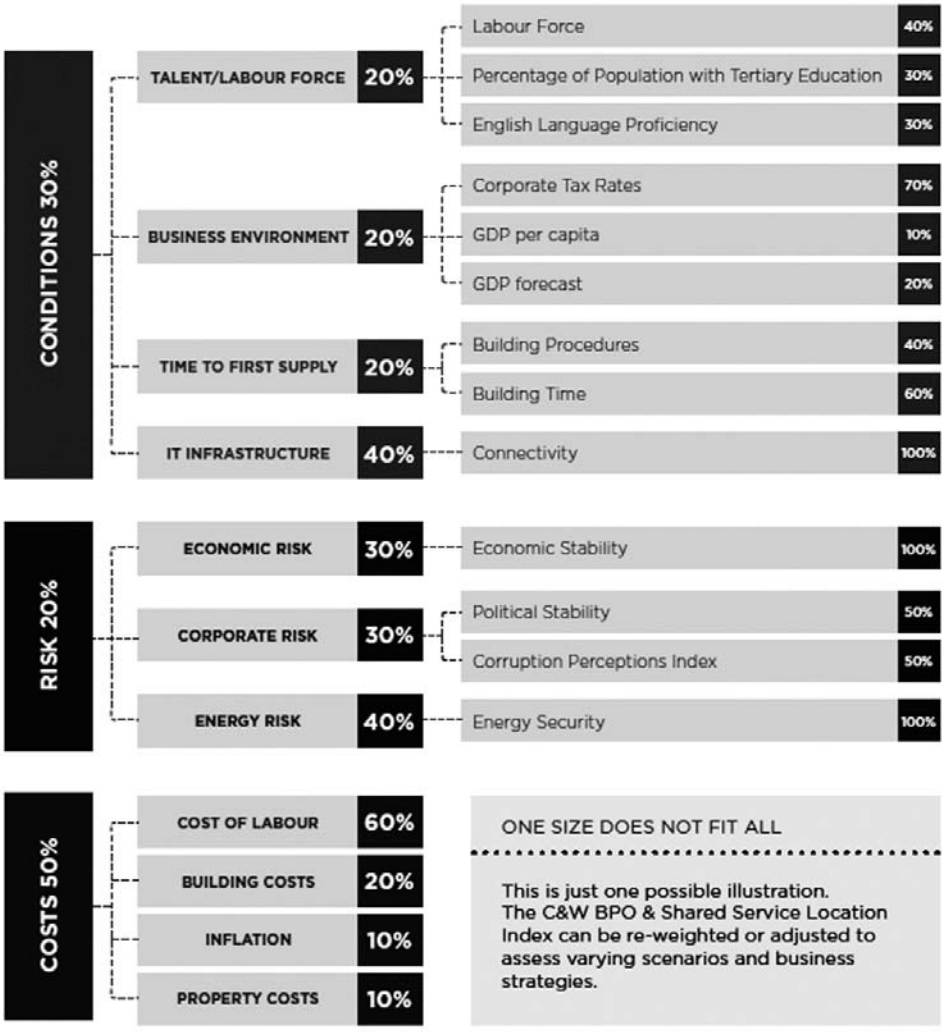
The background economic, social and political data that is widely available as published by internationally recognised institution is bound to be utilized by outsourcing decision-makers

It is then the task in this thesis to analyse how the background data translate to the growth of the outsourcing on the country basis. If the pattern can be identified, it might then be assumed that the average decision-maker follows certain decision-making pattern and is triggered by some key indicators.

The strategy described above requires an extensive data mining exercise. The final product being aimed at is a model with the structure and coefficients resulting from the correlation analysis and the mathematical estimation (fitting) of the model coefficient to the data.

The selection of the set of countries to analyse is a key step. The first decision taken is to concentrate on Europe, therefore the countries that are strongholds of outsourcing and are located in Asia are not analysed (e.g. India or Philippines). For Europe, still, there are many countries to choose from. In the process of thesis write-up authors have altered the countries of focus several times. However, there were so called must-have countries that had to be taken into consideration and these were identified as Poland, Romania and Hungary. In addition, the increasing level of automation in the outsourcing puts Western European countries back in the game. Therefore, an attention turned to the service industry tiger – Ireland. In addition, the second Western European benchmark country was selected to give a better balance: Spain. The selection was also inspired and confirmed by the analysis of ABSL industry report that provides some key statistics used in this thesis. The latest ABSL annual report (Popławski, van Herwaarden, Jasińska, M., Weeink, M., 2016) provides the data for 10 European countries: Hungary, Ireland, Poland, Romania, Spain, Czech Republic, Lithuania, Portugal, Slovakia, United Kingdom. The above countries will be analysed in the initial data mining round. Then, the list of countries will be narrowed down to come up with the final relationship model create by Cushman and Wakefield (2016). that will allow analysing future fate of analysed countries. Taking into account market conditions, cost and risks, and based on the information obtained from Foreign Direct Investment Markets, divided BPO centres into developed and developing locations. They have identified 35 countries, the highest recipients of Foreign Direct Investment in the sector of BPO.

Figure 1.



Their subjectively selected weight criteria are shown in Figure 2. The authors emphasize, that the criteria they selected are very individual and should be adjusted to the particular situation of the company and the outsourcing location. In their consideration, for mature outsourcing locations Romania was also concluded as the top destination, as listed in Table 2.

Figure 2. Index criteria and weighting Source : Cushman and Wakefield (2016)

						Final weight
Conditions	30	Talent/Labour force	20	Labour force	40	2,4
	30		20	Tercentage of population with Tertiary Education	30	1,8
	30		20	English language proficiency	30	1,8
	30	Business Environment	20	Corporate Tax Rates	70	4,2
	30		20	GDP per capita	10	0,6
	30		20	GDP forecast	20	1,2
	30	Time to first supply	20	Building procedures	40	2,4
	30		20	Building time	60	3,6
	30	IT infrastructure - connectivity	40		100	12
Risk	20	Economic Risk (stability)	30		100	6
	20	Corporate Risk	30	Political Stability	50	3
	20		30	Corruption Perceptions Index	50	3
	20	Energy Risk (energy security)	40		100	8
Costs	50	Cost of Labour	60		100	30
	50	Building Costs	20		100	10
	50	Inflation	10		100	5
	50	Property Costs	10		100	5

Table 2. Ranks for European Countries, according to Cushman and Wakefield (2016)

	2016 Rank	2015 Rank	Conditions	Risk	Cost
ROMANIA	1	2	1	12	6
HUNGARY	3	5	6	16	5
CZECH REPUBLIC	6	8	9	8	7
POLAND	7	9	10	9	8
UNITED KINGDOM	12	15	2	3	14
GERMANY	13	13	5	4	15
IRELAND	20	20	7	13	22

Another market report by Deloitte (Deloitte, 2014) provides a survey report results where the percentages of responses indicated the highest growth potential for Poland and Romania (see Table 5).

Table 3. Growth potential for various locations (Source Deloitte (2014))

	Already there (%)	Planning to go or would consider (%)
POLAND	35	27
ROMANIA	21	26
ICELAND	2	28

As cost is a key driven for many BPO decisions, the major reason of outsourcing is to obtain a proper balance between cost and quality. The countries with low labour cost, are usually affected by high risk of business operation.

It is also evident that new technologies that originate from the Internet and the growth of the computer programming based automation are going to change the outsourcing game. It is possible that reduction of labour intensity of certain business processes might convince some companies to stay away from outsourcing and consider usage of modern software / automation within the company that could be licensed at reasonable cost (Deloitte, 2014).

The cost of labour was given the highest weight in the work of Cushman and Wakefield, (2016), as presented in Figure 1. To reproduce the derivation of the 2016 rank of countries provided by Cushman and Wakefield, (2016), the basis individual ranks for risk, cost and conditions was considered and the index calculated with the original weights (50% for cost, 30% for condition and 20% for risk). Then, in the next step, the weights were modified: cost weight reduced to 20% and risk weight increased to 50% in order to simulate the rank of countries appropriate for more risk-focused decision-making process. The result is presented in Table 4. In this case the countries located in Western Europe moved to the leading positions. It should also be noted that in case of the UK the latest political decisions are not reflected in the rankings for individual categories. Authors believe that the "Brexit" will have very negative consequences in the category of risk, and if not compensated by cost and conditions improvement, the UK will lose the top position indicated in Table 4.

Table 4. Ranks for European Countries with 50% weight on risk, 30% on conditions and 20% on cost, based on to Cushman and Wakefield (2016) individual category scoring

	2016 Rank	2016 modified Rank	Conditions	Risk	Cost	30/20/50 index (cost focused)	30/50/20 index (risk focused)
UNITED KINGDOM	12	1	2	3	14	8,2	4,9
GERMANY	13	2	5	4	15	9,8	6,5
ROMANIA	1	3	1	12	6	5,7	7,5
CZECH REPUBLIC	6	4	9	8	7	7,8	8,1
POLAND	7	5	10	9	8	8,8	9,1
HUNGARY	3	6	6	16	5	7,5	10,8
IRELAND	20	7	7	13	22	15,7	13

The above analysis show how decisions may change if weights on the major categories of business interest are altered. Each executive management team in the company needs to allocate weights according to their strategy – higher the risk, better the potential to generate higher risk but also the loss. The relationship between the underlying data and the market development directions needs to be discovered. It is clear from various sources that Romania is developing at the fastest rate and Poland holds a strong position in the developed market, being a large country with a stable economy.

Conclusion

The world constantly changes. The changes that are observed are often cyclic. Today, customer companies that wish to outsource their operations do not only expect to resolve their operational issues. They expect proactive and ongoing optimization of the services and repetitive improvement in the ability to generate value for them. This new relationship gives great insight into what customers are achieving through the technology and subsequently also what can be improved to support them even better.

Over the last few years' strong shift towards more agile and faster process automation is observed. Today, the customers expect rapid time to value and flexibility that allows them to place the business process innovation according to their strategy and ability to digest change. In the upcoming years a heavy need to transform the outsourcing delivery models into process simplification and automation will be observed.

Trend of outsourcing is clearly visible and beneficial. However, there are processes that are worthwhile to outsource and those that may be outsourced but this action either brings questionable benefits or even overall loss. Companies that made this mistake may sometimes overreact by withdrawing completely from outsourcing. Some companies may continuously take a pragmatic approach and assess the situation and decide accordingly (Immelt, 2012). This does not mean that the volume of outsourcing service does not grow. The saturation of the revenue growth might be a result of introduction of latest information technologies and consequent automation in the process. Just like in 20th century automation revolutionized manufacturing industry, now the IT is proving a means to reduce labour intensity of standard business processes. The outsourcing companies are best positioned to lead this innovation as the diversity of experience coming from needs of various customers and ability to invest is better compared to dispersed powers of individual customers. This also changes the labour market, where programming skills become a standard requirement for Finance, Accounting and HR specialists. Programming skills are almost like the language skills, since we always refer to the knowledge of the programming language. The knowledge of this 'new' language will become like a must to know foreign language(s) in today's society. There will be a requirement to possess a combination of professional skills like finance or engineering and languages: foreign and programming. The demand for staff will once again move towards highly skilled and unemployment rates for once that do not combine aforementioned skills will grow [show the statistics for unemployment]. The trouble from this fact then comes from the fact that education can bring the society at a higher level, but not all in the country will be able to become high class experts as expected by job market. The low skill job migration to low cost countries creates social tensions that result in radical right-wing parties to win in general elections. Success of Donald Trump, Brexit and growing popularity of nationalistic parties in Germany, France and Austria may inflict pressures that may disrupt the outsourcing business in the years to come.

The position of countries is subject to continues change. For Poland, the international rating agencies provide improved forecasts. In the view of the recent data provid-

ed by Moody's Investors Service (2017), ("Moody's"), Poland's rating forecast has been changed from negative to stable. The affirmation is based on the economic resilience of Poland which is demonstrated is solid and diversified economy that is reflected in GDP growth, institutional strength and limited vulnerability to domestic and external impacts.

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Importance of intangible assets in the flexibility of selected small and medium enterprises – results of empirical research

Introduction

Flexibility of organizations in the second decade of the 21st century has become one of the most important aspects that can lead to a competitive advantage over other organizations. It should be considered in several ways. The first one will be the type of resource. The author made a division into human, tangible, financial and non-tangible. The second aspect is the speed of response and the risk of changes. The greater the risk of introducing changees and the longer the time is needed for them, the less flexible the resource is. The third aspect is the type of business activity. It determines which of the resources will play the most important role in the functioning of the enterprise. This leads to the conclusion that the flexibility of an organization depends on the amount of flexibility (time and risk) of all resources, but with taken into account the impact of each resource of the organization.

Literature review

Intangible assets require precise definition to identify key flexibility tools. The market value of an enterprise consists of financial capital and intellectual capital. The company's financial capital is the sum of financial and material resources, while intellectual capital consists of human capital and structural capital [Edivnsson, Malone 2001]. Structural capital has been called durable values for the company, including trademarks, elements of organizational culture, copyright, databases [Pocztowski, 2004]. The thing that primarily distinguishes human capital from structural is ownership. While all elements included in structural capital are owned by the company and can be traded on the market, human capital can not be seen as the property of the enterprise. A. Pocztowski proposes the definition of intellectual capital as „stocks and streams of knowledge from which an organization can reap and which represent opportunities for its current and future revenue generation. The essence of intellectual capital management is to shape the interaction between human capital and structural capital, aimed at creating new products, services and markets for the company. „[Ibidem]. This definition shows a clear focus on

ensuring a company's continued growth as one of the most important components for which intellectual capital is responsible. Interaction between human capital and structural capital is in turn a critical element of intellectual capital management. Companies pay more and more attention to exploiting employees' potential. Often this potential is hidden by the lack of appropriate procedures to reward the creativity of workers [Amabile 1979, pp. 221-233]. An employee will not be creative if he or she does not benefit from it, and it may even be harmful to him or her. Teresa Amabile [1996, p. 1154-1186] draws attention to three characteristics that determine individual creativity: (1) abilities needed in a given area, (2) creative predispositions and (3) motivation to perform a task. Creativity itself can be defined as the capacity for creative thinking and broadly understood ingenuity [Zakrzewska 2010, p. 19]. Creative solutions that contribute to greater efficiency can cause an employee to have more work for this reason. Management may not be in favor of changes proposed by employees or middle managers can block creativity. Many modern companies, aware of these limitations, are introducing procedures that develop the creativity of their employees to make greater use of their potential. Another tool used to better utilize your knowledge is to stimulate the processes of knowledge sharing and organizational learning. Lower creativity, both individual and group, occurs in environments with high levels of control. Creativity is conducive to worker autonomy [Lipowska 2013, p. 29].

In order to maximize the potential of resources, an organization needs to adapt its organizational structure to its current needs. The concept of organizational structure can be understood as a system of functional and hierarchical relations and a system defining the way a company operates [Walas Trębacz, Tyrańska, Stabryła 2009, p. 18]. The effective organizational structure will be responsive to the current challenges of the industry where the business operates and the actions of competitors will minimize the risk of the business. Today's management is striving to simplify structures so that they are as efficient as possible and allow for adaptation. This involves the promotion of behavior and elasticity. With regard to organizational structure, flexibility can be reduced to the following changes: [Beliczyński, Mesjasz, Stabryła 2009, p.180]: change of character of entities, change of character between entities, change of configuration of entities and relations between them, change of relations between organization and environment, change of character between organization and surroundings. Employees can often be reluctant to make regular changes and prefer current solutions, but this approach makes it easier to overcome problems within the organization and to make better use of market opportunities. Making changes in the company is a very difficult process. Studies show that 2/3 of TQM programs fail, as is the case with reengineering, which fails in 70% [Senge 2014, p. 6]. One of the ways to reduce this risk is the concept of a learning organization that is constantly changing. This type of organization can be defined as an enterprise capable of acquiring, creating and transferring knowledge, and changing its way of doing things to reflect new knowledge and perception [Garvin 1985, p. 3]. These activities help

to increase the competence of employees and create a culture of knowledge sharing. A problem that has already been diagnosed by Greiner in the organizational development model is the bureaucracy crisis. This is one of the elements that greatly hampers the flexibility of the organization, often making it impossible to make quick decisions. The development and use of structural capital should be understood as identifying processes that increase the efficiency of an entire enterprise and increase its productivity by investing in the development of its structure. This development concerns both investment in information flow equipment, allowing for the collection and management of large databases, the purchase of specialized research equipment, and the introduction of improvements in the organization's organizational structure. Information during dynamic, unpredictable changes is one of the key factors in responding appropriately. From the perspective of this article, the approach of T. Kasprzak and Z. Mesner seems to be the closest to using information to manage risk in small and medium enterprises. It is significant that researchers in the 1980s pointed out that the critical task was not "to generate, store or transmit information, but to properly filter it" [Simon 1982, p. 158]. Since then there has been a revolt in accessing information resources and this statement seems more up-to-date than ever. The use and development of external (client) structural capital takes place primarily through the use of various marketing techniques to maintain the loyalty of key customers and acquire new ones. Caring for the corporate image is another important point in the development of client capital. It is possible to distinguish several planes in which action should take place. An enterprise that is important for the acquisition of the best employees should be well-regarded as an employer within marketing activities. This allows to reach more people who might be interested in working for company. It is equally important for a company to have a good reputation as a company that cares about its employees, local communities or the environment. Companies are increasingly investing in their image, using it in their marketing efforts. These include corporate social responsibility (CSR). This is currently one of the main themes of management considerations. The main areas of the issue are economics, society and the environment, although Friedman is of the view that corporate social responsibility is an increase in profit [Friedman 2007, p. 1]. Corporate social responsibility is derived from the concept of sustainable development [Budzanowska Drzewiecka, Dudzińska Korczak, Lipińska 2011, p. 310]. P. Jedynak points out [2014, p. 20] that CSR operations implemented in one company can also affect its suppliers by expecting to meet specific requirements. Intellectual capital management in a company is a result of organizational culture, processes, individuality, and behavioral standards in a company, so it would be very difficult to create one universal model for managing intellectual capital. Creating this uniqueness and protecting it from competition is a prerequisite for creating competitive advantage. Intellectual capital management in a company is a complex system of dependencies. Managers who are aware of the importance of managing intellectual capital and exploiting it to increase their competitive advantage will strive to increase

the efficiency of human and structural capital. After analyzing the state of the capital, he will be able to create a system that will guide the direction of action. By using well-chosen metrics, the manager will be able to influence the development of intellectual capital. Analyzing the results will create a long-term development plan. These tools to increase the flexibility of intangible assets are strongly linked to the rest of the company's resources. To make the change, you need the right people, the right equipment, the right financial resources, and the right knowledge. The combination of these elements allows for the creation of conditions for the company to function flexibly.

Characteristics of respondents and subject of research

The survey was conducted in 30 companies operating in the manufacturing, trading and service sectors. 10 companies were selected from each sector, allowing for a comparison of results between sectors and, consequently, showing the similarities and differences between companies operating in different sectors. The study was conducted through extensive structured interview.

Intangible resources relate mainly to information and relational resources, so the selected characteristics described are:

- A clear organizational culture,
- unchanging mission and vision of the organization,
- positive image of the employer,
- organizational structure that gives freedom to workers,
- the efficiency of information management processes that identify the risks and opportunities of the environment,
- availability of suppliers,
- existing relationships with other organizations,
- the reputation of the company on the market,
- opportunities for commercialization of intangible assets held by the company,
- state of the learning process of the organization.

There is a very low „insignificant" indication (Table 1). This response only comes with one characteristic – „the possibility of commercialization of intangible assets held by the company (copyright, patents, etc.)", and this is the only characteristic that has not been evaluated as very important.

Tabele 1. Significance of intangible assets in enterprises

	Irrelevant (1)	Not important (2)	Avarage important (3)	important (4)	Very important (5)	Sum
A clear organizational culture	–	2	10	14	3	29
Unchanging mission and vision of the organization	–	3	10	9	7	29
Positive image of the employer	–	1	3	11	15	30
Organizational structure that gives freedom to workers	–	3	9	10	6	28
Efficiency of information management processes that identify the risks and opportunities of the environment	–	2	3	12	11	28
Availability of suppliers	–	2	4	4	20	30
Existing relationships with other organizations	–	2	10	10	6	28
Reputation of the company on the market	–	1	3	7	18	29
Opportunities for commercialization of intangible assets held by the company	17	5	5	1	–	28
State of the learning process of the organization	–	4	8	10	6	29

Source: prepared by the author.

It has been confirmed that the companies surveyed do not focus on innovative activity, do not develop new solutions, have no possibility of commercializing intangible assets. Lack of innovation is currently one of the major threats to small and medium-sized businesses. While Polish companies have mastered the strategy of price fight, also on foreign markets, it is necessary to support innovation in order to maintain competitiveness in the perspective of the coming years.

The low score also has the „state of learning organization processes". The concept of learning organization is not yet very widespread among entrepreneurs. Learning organizations are more likely to be identified with companies that base their strategy on

highly-developed staff, with a strong focus on developing the company's intellectual capital. This is, however, a broader concept that can be applied in any company. Most important is the employer's approach to the employee and what both parties expect from each other and what they can offer.

Definitely the highest ranking in other characteristics considered the most important in enterprises are those which directly affect the functioning of companies. The availability of suppliers is at the forefront. In 20 cases it was considered that this is a very important characteristic. For many companies, especially in the commercial and manufacturing sectors, this is one of the key factors in the company's functioning. Availability to suppliers in many cases is a determinant of a company's performance, and therefore a high result.

Second place is the reputation on the market, however, given the average of all indications, it is at the top of the most important characteristics. Every company depends on the best reputation. It depends on whether it will receive new orders, will be recommended, will be able to make valuable contacts, or will attract good employees to themselves. The reputation of the company depends on its success. Once ruined reputation is very difficult to rebuild, and sometimes it is impossible.

The reputation of the company is also linked to the positive image of the employer, which was found to be very important by half the respondents. The positive image of the employer allows you to hire the best professionals, who generally have great career prospects and often the salary alone is not enough. Positive image allows you to reduce recruitment costs as employees will already know the company and will want to work in it. Large international corporations have long recognized the importance of building the right image. These companies are fighting each other for the best employees and building a good image is one of the most important elements of a strategy that employs the best employees. Small and medium-sized companies are generally not able to compete with international companies, and they do not have such advertising and sponsorship budgets, but they can offer an atmosphere of work that is unmanageable in the corporation, or more self-fulfilling.

The last characteristic, more than ten times mentioned as very important, is the efficiency of information management processes that identify the risks and opportunities of the environment. It plays an increasingly important role in business management. The unpredictable environment in which companies operate creates a mechanism for minimizing risks while encouraging opportunities. Companies that create the right information management processes for identifying threats and opportunities from the environment will be able to gain significant competitive advantage. Having this skill for business executives is an increasingly important challenge and is seen as essential to maintaining a high level of competitiveness.

Fewer than ten respondents mentioned the unchanging mission and vision of the organization, the state of the organization's learning processes, existing relationships with other organizations, an organizational structure that gives workers the freedom to work, and a clear organizational culture. You can see that these characteristics are more

abstract in character than those on the top of the list. Therefore, the correlation between them and the functioning of an organization is not always obvious.

Diagnostic arrangements

Intangible resources, although difficult to identify and diagnose unambiguously, are undoubtedly more and more important in business management. The study indicated high knowledge of the subject by the surveyed companies. The proposed resource management tools are widely used by the surveyed companies [see Table 2]. Only one tool, the sale of patents and copyrights, is practically not used by companies. Other tools are of great use.

Tabele 2. Utilization of tools for managing intangible assets

	Scale of use				
	At all	**In small extent**	**Avarage**	**Common**	**Sum**
Procedures to reward the creativity of employees	2	6	15	7	30
Shaping the effective organizational structure and counteracting inertia	2	5	15	7	29
Utilization of computer-aided management systems	2	4	9	14	29
Participation in networked databases (for example, industry portals)	7	10	2	11	30
Employer branding to ols	7	12	7	3	29
Management through organizational culture	2	5	15	6	28
Stimulating the processes of sharing knowledge and organizational learning	1	5	15	9	30
Taking action on CSR (corporate social responsibility)	9	15	3	2	29
Taking CRM activities (customer relationship management)	2	4	5	18	29
Promote behaviors and attitudes towards flexible actions	3	3	11	12	29
Overcoming formalization excess	2	8	14	5	29
Use of external and internal consulting	5	6	12	6	29
Use of external sources of information (business intelligence)	8	7	10	5	30
Evaluation and selection of suppliers to ensure the safety of the organization	2	1	9	17	29
Engaging with competitors	6	13	8	3	30
Sale of patents and copyrights	27	2	1	-	30

Source: prepared by the author.

The most commonly used are: stimulating knowledge sharing and organizational learning processes, rewarding employee creativity, shaping an effective organizational structure and counteracting inertia, using IT management support systems, managing organizational culture, undertaking CRM activities, counteracting formalization, Selection of suppliers to ensure the safety of the organization. The less popular tools used by about twenty companies include: participating in network databases (for example, industry portals), tools for shaping the employer's image on the labor market, taking action on CSR, using external sources of information.

Such extensive use of intangible resource management tools is certainly very beneficial for the surveyed companies. The presented data indicate the importance of transfer of knowledge within companies and attempts to create an organizational culture focused on the development of intellectual capital.

Five tools are used to the largest extent in more than ten companies surveyed. Eighteen companies mentioned CRM in this context. This is an important element of the functioning of the business regardless of the sector in which it operates. It allows to increase sales and manage company's processes involved in interacting with contractors more easily.

Evaluation and selection of suppliers to ensure the safety of the organization is used to the greatest extent by seventeen companies surveyed. Each company dependent on one provider operates under continuous threat. Its existence is closely related to the supplier. If he chooses to raise money or stop supply, it will have a huge impact on the functioning of the company that is dependent on him. That is why it is important to choose the right suppliers to ensure the security of your organization and to strengthen your negotiating position. Fourteen companies use IT management systems to a large extent. They allow you to make better use of your resources and potential. It facilitates the process of enterprise management, which avoids unnecessary errors.

The companies surveyed also noted the problem of organizational flexibility. Twelve companies promote behavior and attitude oriented towards flexible actions to a very large extent. The problem of business flexibility is becoming increasingly challenging for businesses and can be seen in the results of questionnaires as well. It can be expected that the shorter life cycles of the product and other factors affecting the large variability of the environment will enhance the importance of this organization's quality as it is needed to achieve satisfactory returns.

The last tool that plays a very important role in more than ten companies is participating in networked databases. Internet development has made it much easier to access databases that allow you to assess the condition of your business against others or acquire new customers.

Five tools have achieved an average level of use of intangible resource management tools over 3.0 [see Table 3].

Table 3. The average level of use of intangible assets management tools in enterprises – by business type (four point scale rating, where 1 means "no use" and 4 "high level" use)

	Sector			Average
	Service	Trading	Production	
Evaluation and selection of suppliers to ensure the safety of the organization	3,2	3,6	3,5	3,4
Taking CRM activities (customer relationship management)	3,0	3,7	3,4	3,3
Utilization of computer-aided management systems	3,1	3,7	2,9	3,2
Stimulating the processes of sharing knowledge and organizational learning	3,1	3,0	3,1	3,1
Promote behaviors and attitudes towards flexible actions	3,0	3,6	2,8	3,1
Procedures to reward the creativity of employees	2,8	3,3	2,6	2,9
Shaping the effective organizational structure and counteracting inertia	2,5	3,1	3,2	2,9
Management through organizational culture	3,0	2,9	2,8	2,9
Overcoming formalization excess	2,3	3,3	2,7	2,8
The use of internal and external consulting	2,2	2,8	3,0	2,7
Participation in networked databases (for example, industry portals)	2,6	3,2	1,9	2,6
Use of external sources of information (business intelligence)	2,0	2,7	2,5	2,4
Engaging with competitors	2,3	2,3	2,2	2,3
Employer branding	2,3	2,4	1,9	2,2
Taking action on CSR (corporate social responsibility)	1,5	2,7	1,7	1,9
Sale of patents and copyrights	1,0	1,3	1,1	1,1

Source: prepared by the author.

These are: the evaluation and selection of suppliers to ensure the security of the organization, the CRM activities, the use of IT management support systems, the stimulation of knowledge sharing and organizational learning processes, and the promotion of behavior and attitude oriented towards flexible operations. The two tools are used very rarely, achieving the result below two: taking action on CSR and selling patents and copyright. CSR is a relatively new area that is not yet widespread, especially among small and medium-sized businesses. Large corporations often form global CSR strategies and use them

later for marketing purposes. Investigated companies do not sell patents and copyrights. The biggest differences between the different types of companies are the following tools used: counteracting the excess of formalization, participation in network databases, undertaking CSR activities. In all three cases, trading companies are the leader. These companies use the tools of intangible resources management to the greatest extent. Their average use level is 3.08. For service companies this ratio is 2.59 and for manufacturing 2.68. Resource management tools are widely used by all surveyed companies. These companies also show great sensitivity to intangible elements of business management.

Summary

The companies surveyed showed a great deal of knowledge about intangible assets. The most commonly used tools are to provide businesses with relevant suppliers, introduce CRM elements, and introduce computerized decision support systems. It can be concluded that the companies surveyed show a great deal of pragmatism using mainly those tools that directly and quickly influence the results achieved.

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The significance of water management within social and economic development

Water has always been, still is and will be the most precious natural resource. It is considered one of the common resources which are – at least in theory – available to all. Yet, the structure of global water resources (97% sea water, 2% snow and ice, 1% fresh water) and the insufficient development of technical infrastructure translate into scarcity of water. The economic development and the increase in population resulted in almost doubling global consumption of water. Despite the implementation of water saving technologies in the developed countries, the deficit of water will be becoming more acute and 2 – 3 billion people living in about 50 countries will suffer from chronic shortage of water[1]. This paper is poised to discuss the issue of the deficit of water resources and present its impact on the quality of life from the perspective of sustained social and economic development.

1. The concept of water resources and their deficit

Commonly understood water resources include waters that may be utilized, i.e. waters which are currently available, both actually and potentially within a certain region, of a certain volume and quality (annual river outflow). By the same token, the deficit of water can be described as the demand greater than the supply, i.e. the supply determined by the volume of available water resources and the technical and economic capacity for arranging such supply. In practice, the deficit of water resources is less common than the crisis in water supply due to the limitations of technical infrastructure or excessive charges for water supply.

The index of *water stress* has become the most commonly applied scale in the measurement of water resources and it represents the resources of 1000 – 1600 CBM per capita per one year. Water stress brings about disturbances in the vegetation of plants and in the life of humans and livestock. The countries most affected by the

[1] World Water Development Report. Ośrodek Informacji ONZ, Warszawa 2015; Progress on Sanitation and Drinking Water. UNICEF – WHO, Genewa 2015, pp. 22-25.

scarcity of water resources include those in northern Africa, the Middle East and Central Asia. About a dozen countries possess resources below 500 CBM i.e. less than the water management barrier. The scale of water resources management is presented below.

Table 1. The scale of water resources management in thou.CBM /per capita/year.

Class of resources	Characteristics of brackets	Brackets		
		According to P. Kowalczak	According to M. Falkenmark	According to World Resources Institute
I	Below water management barrier	do 0.5	do 0.5	do 1
II	Chronic shortage	0.5-1,0	0.5-1	do 1
III	Water stress	1,001-1,7	1-1,6	1-1,7
IV	Basic problems in resources management	1,701-5,0	1.6-10[a)]	1.7-5
V	Certain problems in resources management	5,001-10,0	1.6-10[a)]	5-15
VI	No basic problems in resources management	10,01-100,0	above 10	15-50
VII	Abundance of water	above 100	x	above 50

The scale elaborated by M. Falkenmark does not distinguish separate values for class IV and V resources.

Source: Elaborated by the author on the basis of : A. Brown, M.D. Matlock: a Review of Water Scarcity Indices and Mathodologies. The Sustainability Consortium, Fayetteville 2011; P. Kowalczak: Konflikty o wodę. Wyd. Kurpisz, Przeźmierowo 2007; http://www.wri.org/our-work/topics/water

2. Water resources and water management in Poland

Despite the on-going climatic changes within the territory of Poland and contrary to the reported decline in the volume of rainfall, the statistics do not show a declining tendency. Average annual precipitation over the decades within 1951 – 2011 reached a similar volume of 617 – 622 mm and 193 – 197 billion CBM . Similarly, the runoff of water of 1 sq.k. amounted to 198 – 200 thousand CBM, which translates into 1,6 – 1,8 thou.CBM per capita, a decent figure in terms of Europe (Europe 3,9 ,and 5,4 thou. CBM in global terms). It should be noted that the runoff of surface waters was on the decline due to the increasing consumption of water by the economy in the 1990s (currently that consumption has been curbed), and the increased evaporation attributable to the global warming (approx.. 71% of rainfall). In particular, the Greater Poland and the Kujawy regions noted greater evaporation than precipitation over the past dozen years which translated into the negative balance of water and steppe formation within those areas.

Table 2. Water resources and the consumption of water in Poland over 2005-2015

Specification	2005	2010	2014	2015	2015 2005
Rainfall in mm	580,3	802,9	644,3	501,2	86,4
- in km^3 (billion CBM)	181,4	251,1	201,5	156,7	86,4
Runoff in km^3	56,7	86,9	52,2	40,8	72,0
- per 1 km in thou.CBM	181,3	277,9	167,1	130,5	72,0
- per capita in thou. CBM	1,5	2,3	1,4	1,1	73,3
Ratio of runoff to rainfall in %	31.3	34.6	25.9	26.0	83.1
Water consumption in km^3	10,94	10,87	10,69	10,50	96,0
- for production (excluding farming)	7,73	7,65	7,64	7,46	96,5
- water supply network	2,11	2,06	1,99	2,05	97,2

Source: Statistical yearbook. GUS, Warszawa 2016, p. 103

As shown in Table 2, over 2005 – 2014, precipitation was higher than the average for the preceding 50 years. Yet, there was a drop within 2015 – 2016 which resulted in a draft in most territory of Poland. Industrial production has a 71% share in water consumption whilst municipal services reach 19% and irrigation for farming and forestry less than 10%.

Prior to 1990, the consumption of water in Poland was clearly on the rise in line with the social and economic development. Currently the consumption of water dropped owing to the restructuring of industry, the implementation of more efficient technologies and water saving policies. As indicated by the statistics, over 1990–2015, the consumption of water in Poland declined from 14,3 to 10,5 billion CBM which represents a drop of 25% (30% for households).

The decrease in the consumption of water was accompanied by the drop in the volume of discharged sewage, which was attributable to the technological development. Over the investigated period, the percentage of municipal sewage in the total volume of sewage declined from 20% to 14%. In Poland, the percentage of sewage which does not require treatment is relatively high (75%) which is attributable to the high volume of cooling water discharged from power plants and coal-fired heating plants. It is important to note that the proportion of sewage not requiring treatment to that needing it dropped from 32.5 to 5% in 2015.

3. The possibilities for implementing sustainable development

The concept of eco-development, i.e. an economic development conforming to the requirements of the environmental protection underpinned the theoretical foundations of the economic policy which would give regard to the ecological aspects. Nonetheless, it was considered excessively confined to the natural sciences issues. Hence, the concept of Sustainable Development emerged, based on recycling of waste and renewable energy sources.

The principle of the sustainable character of development is an important criterion bringing order to the economic approach to the natural resources. That criterion reflects large differences in economic, ecological, and quite frequently ethical reference as well as the existing conflict between the conservative approach to the natural environment and the expansive forms of exploitation of the natural resources (Borys, 2013, pp. 20-23). The concept of sustainable development entails ensuring appropriate quality of life and the natural environment, also for the generations to come, and it is graded in line with the degree of restrictions in preserving natural capital. It reflects the transition from the postulate of perfect sustainability to a less perfect model, in other words, a moderate complementation and substitution of capitals. It should be noted that the first principle, *weak sustainability* in simple terms corresponds to the contemporary economic and ecological policy whilst the second principle, *sensitive sustainability* constitutes the foundation for the environmental protection entailing its complementary character Finally, the third principle, *strong sustainability*, underpins the discussed concept and the dominance of natural capital, and the fourth one, *restrictive sustainability* makes the basis of ecological economy.

The author shares the view that it is not just the first principle which is undisputed but also the second one which is proven by the efficient programs of environmental protection. Yet, there are doubts about viability of the third principle despite the attempts at its implementation. The fourth principle seems unrealistic – even though it might be enforced in national parks and natural preserves – and it seems to be highlighted merely for didactic purposes.

Particular variants of sustainability were allocated a defined concept of sustainable development. Rationalization of the approach to the natural environment should be conducted with the demonstrated axiological attitudes (systems of values, moral and ethical conduct). Economics is obliged to analyse those attitudes. The approaches to the environment show a huge axiological disparity ranging from egocentrism (the attitude found in the economics of the environmental protection) through mild anthropocentrism found in the concept of sustainable development to biocentrism apparent in the ecological economics. Such distinction is revealed and translates into the relationships of the contemporary economics and ecological issues which are understood as follows:

- the impossibility of changing the contemporary society (exclusionism) and firmly standing the ground of egocentrism,
- the need to abandon anthropocentrism in favor of ecocentrism,
- the need to appease the anthropological approach avoiding its radical rejection, hence adopting a version of mild anthropocentrism (Borys, 2013, pp. 20–23; Łuszczyk, 2013, pp. 46-51).

The contemporary science, and political practice in particular, shows a derangement of the hierarchy of values which is apparent in the tendencies for taking a relativistic view on truth, freedom, honesty and other axiological attitudes. That derangement is due to the fact that marketing and management generate artificial needs, i.e. the

needs which a human does not really have or such that do not foster the development of man. Nonetheless, the natural protection postulate advocates moderation and restraint in consumption, hence here we have clear axiological controversies.

Hence, the author advocates a departure from the anthropological model and suggests adopting an eco-centric model. The conclusion is that the loudly voiced postulate of economizing the environment calls for giving priority to the economic prerequisites and objectives in view of ecological prerequisites and the need to protect the natural environment. From the perspective of that theory, water resources are regarded as secondary with regard to the criteria that decide about the welfare of an individual and the whole society. Raising the material welfare may lead to the adoption of such economic coefficients that will deteriorate instead of minimizing the deficit of water resources.

In case of the areas affected by the water resources deficit, there may arise the issue of "fair access" to the dwindling resources. Another suggestion is combining economization of the environment with the concept of sustainable environment. Within this context, there are opinions about "weak sustainable development" which boil down to preserving the whole capital irrespective of its structure which includes natural capital, man-made capital (economic and cultural), and human capital. In keeping with that approach, various types of capital are assumed to be substitutes. This is a *technocratic* approach which is the extension of the traditional economic welfare theory supplemented with the factors that, to a certain degree, entail most apparent requirements involved in the safe exploitation of the natural environment resources. Such development may not be identified with the sustainable development.

4. Sensitive and restrictive principle of sustainability

The institutional and even the main stream economy accept a "soft" version of the sustainable development. It is prerequisite that while maintaining the total volume of capital, the principle defining the relationships between its constituent parts remains untouched. Hence, the man-made capital and the natural capital may become substitutes only within predetermined limits. It is mandatory for proper functioning of the system that the main constituent parts of capital which are present maintain mutual proportions and allow for negligible changes.

The described above models primarily consider the eco-logical limitations on human activity, yet admit reaching a compromise and translating ecological premises into the language of practical management of natural resources whilst sustaining their use. The sensitive version of sustainable development allows for a mild form of economizing the environment with the application of economic, market and administrative regulations. This may be regarded with a certain dose of optimism as the manifestation of care for the environmental protection within the prevailing dominance of economic aspects of human activity. In this context it is still a development which moderately balances social, economic, ecological and spatial aspects.

The conducted analysis demonstrates that the first and by large the second principle of sustainability advocate egocentric axiology which is typical for anthropocentrism. According to that view, all processes and natural phenomena are strictly subordinated to humans. The only utility of biosphere is that is serves humans, hence its value is purely instrumental. The radical protagonists of anthropocentric ethics in its egocentric form (Luc Ferry) claim with zest that biocentrism poses a serious threat to the contemporary civilization (Piątek, 2008). Economic criteria and the fear of losing by man his privileged position in the world of nature still prevail in the opinions about this line of study. Once we adopt a hard line anthropocentrism, this would deprive us of any change to the contemporary society. Such approach is the basis of exclusionism, or egoism of species.

In turn, the ecological paradigm of economics requires that natural prerequisites and the objectives of management of natural resources be considered superior to the objectives formulated by the traditional economics. This paradigm gives floor to axiological premises and not to solely utilitarian criteria. Nonetheless, the orthodox principle of sustainability means a ban on depleting the natural resources. Hence, the non-renewable resources and those close to exhaustion would not be exploited, whilst the renewable resources would be used only in part equal to their annual increase, in this way preventing depletion of capital and sustaining the ability to renew. This is not quite realistic, if not outwardly utopian, with the exception of extremely valuable ecosystems.

The principle of sustainability goes hand in hand with the development of natural ecosystems. That is a kind of development that promotes the protection of natural capital at the expense of economic capital. As such, it is intentionally non-sustainable. Under such circumstances the economic ratios must be surrendered to ecological factors which give due regard to the evolutionary survival of humans and not mere augmentation of material wealth. In the future, due to the lack of certain resources, that material wealth might prove quite an unsatisfactory prospect for existence. The concept of sustainable development must serve both humans as well as the natural resources. Such form of economics may be formulated only by people with an appropriate level of harmony and axiology. Ecological economics founded on such concept is a holistic economics which considers not just the criteria of material wealth but also more resilient conversion ratios and non-renewable character of ecosystems.

The presented point of view on the prospects for the implementation of sustainable development is divergent from the opinions presented by the economists. To give an example, Hogler Rogall (2010) maintains that the concept of Sustainable Development presents a higher level of development sustainability, the so-called "strong sustainability" and he demands that the individual parts of capital be preserved – each separately. In addition, he admits that the critical capacity of the environment which determines the limits for safe economic development in line with the limits set by the very nature is the basis for discarding the balance of three objectives; economic, social and environmental.

It is hard to agree with this theorem since an integrated order is the gist of sustainable development, and the natural and anthropogenic capitals do not substitute but

complement each other. This pertains mostly to the regulatory functions of the environment. Hence, depletion of a certain type of a resource (such as degradation of water resources) should be compensated with an increase of the same, and not investment in another type of capital. Nonetheless, in case of non-renewable resources it is not feasible to bring them back. Thus, the limitations of the world of nature should constitute a natural impediment to expansive economic strategies.

5. The measurement of sustainable development.

There are so many gauges for measuring sustainable development that their selection has been entrusted to the international organizations headed by the UN. Tadeusz Borys (2005) made an important contribution in this area. In turn, W.Kundzewicz (2000) listed the UN gauges grouping them into social, economic, environmental and institutional ones dividing them into the coefficients of pressure, condition and response (Kundzewicz, 2000, pp. 101–105 and 118–119)

By far, the measurement of sustainable development, i.e. the standard of living and preservation of natural capital are most complex. The commonly applied GDP index is more of a measure of economic and not social development, and the standard of living. HDI seems to be a much better index, however it was questioned in a few aspects (Bartkowiak, pp.59-63)

That is because the UNDP experts claim that HDI (Human Development Index) applied till 2050 and calculated in the current way will be 8% lower, and even 12% lower for the RSA and Sub-Sahara Africa in case the results of global warming have not been considered. These entail the drop in farming production attributable to climatic changes and lower precipitation, more difficult access to potable water, deteriorating sanitary conditions, etc. [2] At low HDI, the impact of those factors on its volume is even greater.

The increase in revenue and the rise of HDI index may be attributable to the deteriorating condition of the natural environment and dwindling ecological coefficients such as soil and water quality, and the rising number of the groups of *excluded people*. Clearly, this gives grounds for the criticism of HDI index. That is why MPI (Multidimensional Poverty Index) was constructed where the lack of potable water and unhealthy sanitary conditions play an important role. It is worth mentioning that a paper of Marcin Łuszczyk (2005) is a good attempt at elaborating a new index. His synthetic index of the standard of living entails a geometrical mean of 5 indexes covering social, ethical and moral, spatial, economic, environmental and political and social aspects. The index has been calculated for 124 countries.

The concept of sustainable development, which by its very nature is a macroeconomic concept, finds application in various practical programs implemented by *gminas* and enterprises, hence at the mezzo-economic and microeconomic level. The UN directives and Polish regulations play an important part in the following areas: the as-

[2] *Raport o rozwoju społecznym*. UNDP, Waszyngton 2011, pp. 17–18.

sessment of ecological impact of state programs and private undertakings, the criteria for assessment of investment impact on the natural environment, the impact of spatial planning on the natural environment, and voluntary participation of enterprises in eco-audits. In addition, the EU has been initiating complex programs of waste management and the increasing share of renewable energy sources in fuel and power balances (from 5% to 20%) which stands for a particular realization of the principles of "self-sustained" and "sustainable" development.

Conclusion

The issues of world water resources will continue to aggravate since water is a finite resource. Nonetheless, it will be necessary to increase the volume of water to meet the sanitary and other needs of the growing population of people. An important direction for action, to be assumed in the first place, is the elimination of water losses and conserving water by water saving technologies, introducing closed circuits, launching double networks providing water of various quality, etc. It is prerequisite to increase water retention capacities even though storing water in large shallow reservoirs is subject to intense evaporation in a dry climate. Such losses may be avoided by storing water in the mountains or underground, yet such solutions necessitate higher investment.

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Social responsibility of projects – the essence and results of survey

Social responsibility is gaining social recognition and is increasingly used by managers of organisations. The increase in the extent and the importance of projects in operations of organisations results in the fact that the practice and theory of management has begun to focus also on the issue of social responsibility of projects. The article presents the origin and the essence of the issue, as well as results of the studies on the use of good practices related to social responsibility of projects in Poland.

1. Introduction

Social responsibility concepts are gaining social support and are used by managers of various organisations to an increasingly greater extent. They are based on the idea of sustainable development which satisfies aspirations and needs of the present generation without reducing opportunities of future generations to satisfy their own aspirations and needs. Sustainable development is achieved by actions that:

- contribute to development, health and welfare of the society,
- take into account expectations of different interest groups,
- are consistent with the binding law and international norms of behaviour,
- are consistent with the rules of the organisation and practiced in its relations.[1]

The idea of sustainable development is based on *the Earth Charter* – a declaration of fundamental principles and values for building just, sustainable and peaceful global society of the 21st century, prepared on the initiative and under the auspices of the

[1] Acccording to ISO 26 000: Guidance on social responsibility

United Nations. These principles concern „the conduct of all individuals, organisations, businesses, governments and transnational institutions."[2]

The idea of sustainable development has been crystallised in *The Ten Principles of the UN Global Compact*, in which organisations undertake to accept, foster and implement a set of fundamental principles concerning human rights, employee affairs, environmental protection and counteracting corruption in their sphere of influence.[3]

It focuses on global problems and its implementation at the level of particular organisations is defined as the CSR concept (*Corporate Social Responsibility*). The main document regulating the issue of social responsibility is ISO 26 000 *Guidance on social responsibility*.[4] The standard is a practical guide to the social responsibility concept, defining the ideas, values and frames of social responsibility in seven core subjects:

- organisational governance,
- human rights,
- labour practices,
- environment,
- fair operating practices,
- consumer issues,
- social involvement and development.[5]

Social responsibility of organisations are regulated also by other standards, from which the one of particular importance is a set of AA 1000 standards concerning stakeholder relations, prepared by AccountAbility – a recognised international think tank:

- AA1000 Principles Standard,
- AA1000 Stakeholder Engagement Standard,
- AA1000 Assurance Standard.[6]

Other standards in this area include: IFC *Environmental and Social Performance Standards*[7], *SA8000 Social Accountability standard*[8] and OECD Guidelines for Multinational Enterprises.[9]

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[2] The Earth Charter. Official Polish website of the Earth Charter https://kartaziemi.wordpress.com/tekst-karty-2/

[3] The Global Compact Office, March 2007, www.unglobalcompact.org

[4] ISO 26 000: 2010 Guidance on social responsibility

[5] I. Ślęzak-Gładzik, Społeczna odpowiedzialność w ujęciu normy międzynarodowej ISO 26 000 Guidance on Social Responsibility, „Modern Management Review", No. 4 / 2013

[6] Standardy AA1000. Narzędzie społecznej odpowiedzialności organizacji. Przewodnik dla biznesu, CSRinfo, Warsaw 2011

[7] IFC Environmental and Social Performance Standards, International Finance Corporation 2012

[8] *SA 8000 Social Accountability Standard, Social Accountability International 2008*

[9] OECD Guidelines for Multinational Enterprises, OECD Publishing 2011, http://dx.doi.org/10.1787/9789264115415-en

2. Social responsibility of projects

Initially, the idea of sustainable development and the concepts of social responsibility were related to an organisation as a whole, without distinguishing internal operations related to this responsibility.

Right now, the issue of social responsibility takes account of this diversity. The reason is that management of organisations covers two different types of operations: run the business and change the business. The increase in the extent and the importance of project activities, referred to as projectification, occurs in all fields and at all levels of human activity: organisations, global and national economy, economic sectors, particular organisations and units.

The share of project activities in the economy has been growing over the last 100 years. A study of the World Bank indicated that ca. 25% of gross world product (GWP), i.e. ca. USD 50 billion, is generated by the projects. It is estimated that in 10 years it will be 35% of GDP, and the value of the project management sector will increase at that time by USD 6.61 billion.[10] This trend is confirmed by the growth observed in national economies. For instance, in the period 2009-2014 the level of projectification in Germany increased from 29.3% to 35.8% at around 4% per annum. The authors of the survey estimate that in 2018 this level would be ca. 40%.[11] The level of projectification may differ from one organisation to another, but it shows a similar increasing trend. For instance, in 2010 projects generated 50% of turnover in Siemens plants. From among 400 thousand employees, 73 thousand are constantly working on projects, and 15 thousand project managers implemented ca. 40 thousand projects.[12] In a personal dimension, projectification means new, attractive professional development opportunities. It is estimated that by 2020 ca. 15.7 million project manager positions will be created in the most important sectors of global economy, opening new, attractive perspectives of professional and personal development, related to project management.[13]

The phenomenon of projectification brought to the attention the significance of projects for corporate social responsibility. Theoreticians and practitioners became interested in social responsibility of projects, treated both as a part of organisation's operations, as well as stand-alone organisational issues. This interest resulted in research, publications and methodical studies. Such papers were produced, among others, by GPM Global, „an organisation dedicated to advancing sustainable development through the responsible management of portfolios, programs and projects."[14] The GPM Global's

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[10] A. Nieto-Rodriguez, The Focused Organizations, Gower, London 2012, p. 38.

[11] A. Wald, R. Wagner, C. Schneider, Y. Schoper, Towards a Measurement of "Projectification": A Study on the Share of Project Work in the German Economy, GPM Deutsche Gesellschaft für Projektmanagement 2015; s. 29 - 31

[12] E. Bittner, W. Gregorc (eds.), Experiencing Project Management, Siemens 2010

[13] Project Management Institute, PMI's Industry Growth Forecast, Project Management between 2010 and 2020, p. 2

[14] http://www.greenprojectmanagement.org/about-gpm

offer includes numerous standards, from which *P5 Standard for Sustainability in Project Management. People, Planet and Profit, Project Processes and Products* is of fundamental importance. It is a tool that supports the alignment of portfolios, programs and projects with the organisational strategy for sustainable development and focuses on the impact the project will exert on environment, society, corporations and local management. The structure of P5 Standard for Sustainability in Project Management. People, Planet and Profit, Project Processes Products and is presented in Table 1.

The symbol of the standard is 5P, representing its main issues. Similarly to other corporate social responsibility standards, it consists of Triple Bottom Line (TBL), covering: People, Planet, and Profit, as well as two areas typical of projects: Products and Processes of projects. Thus, the 5P Standard covers the entire issue of social responsibility of projects.[15]

The specific character of projects is represented by the scope, diversity, intensity, endurance and consequences/significance of process and product impacts for all groups of project stakeholders. It results both from the essence of projects, namely unique and complex undertakings, as well as from a wide group of project stakeholders, namely people, groups and institutions, whose interests are related to projects, due to the possible impact on the course and effects of the project and/or due to being subjected to the effects of the project and its results.[16]

First of all, external project stakeholders should be highlighted, both beyond the organisation – such as recipients of the project products/clients, regulators, suppliers and competitors – as well as inside the organisation – e.g. supervisory bodies, top management, managers and front-line and functional employees, experts, employee representatives, etc. An important role in shaping social responsibility of projects is played by internal project stakeholders, e.g. steering committee, project managers, implementing teams, project management teams, administrative-technical service, specialists, consultants. [17]

[15] The GPM Global P5 Standard for Sustainability in Project Management. People, Planet and Profit, Project Processes and Products, The GPM 2014www.greenprojectmanagement.org

[16] M. Trocki, B. Grucza, *Zarządzanie interesariuszami projektu*, in a collective work edited by M. Trocki and E. Sońta-Drączkowska: Strategiczne zarządzanie projektami, Wydawnictwo Bizarre, Warsaw 2009, P. Littau, N. J. Jujagiri, G. Adlbrecht, 25 Years of Stakeholder Theory in Project Management Literature (1984–2009), „Project Management Journal", No. 9 / 2010

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Table 1. Structure of P5 Standard for Sustainability in Project Management. People, Planet. Profit, and Processes and Products of Projects

Product impacts: objectives and efforts, lifespan and servicing				**Project**				**Process impacts: maturity and efficiency**		
P5 and social bottom line: society (people)				**P5 and environmental bottom line: environment (planet)**				**P5 and social bottom line: finance (profit)**		
Labour practices and decent work	**Society and customers**	**Human rights**	**Ethical behaviour**	**Transport**	**Energy**	**Water**	**Waste**	**Return on investment**	**Business agility**	**Economic stimulation**
Employment Labour/ management relations Health and safety Training and education Organisation-al learning Diversity and equal oppor-tunity Trained professional emigration	Community support Public policy/ compliance Customer health and safety Products and services labelling Market com-munications and advertis-ing Customer privacy	Non-discrim-ination Freedom of association Child labour force or compulsory labour	Invest-ment and procurement practices Bribery and corruption Anti-competition behaviour	Local pro-curement Digital com-munication Traveling Transport	Energy used Emission/C02 Renewable energy	Water quality Water con-sumption Water dis-placement	Recycling Disposal Reusability Incorporated energy Waste	Benefit cost ratio Direct finan-cial benefits Internal rate of return External rate of return Net present value	Flexibility/ optionality in the project Increased business flexibility	Local economic impacts Indirect benefits

Source: The GPM Global P5 Standard for Sustainability in Project Management. People, Planet and Profit, Project Processes Products and, The GPM 2014, p. 8

3. Results of studies on social responsibility of projects in Poland.

Studies on social responsibility of projects were rarely undertaken, as compared to studies on social responsibility of organisations, in particular enterprises. This section presents the results of the first stage of research (2016-2017) on social responsibility of projects, carried out by the team of the Department of Project Management of Warsaw School of Economics.

It was focused on the social bottom line, namely a degree to which social impacts of processes and products of the project are taken into account in project management. The survey was carried out in March 2017 using CATI surveying technique (Computer Assisted Telephone Interview). 127 people were interviewed, all of whom were involved in projects in their companies. The most common role which respondents performed was project management (51%), project monitoring (20%) and participation in the project team (17%). Respondents had different experience in working on projects; most of them declared more than 7 years of experience (54%), which was followed by 4 – 7 years (30%) and up to 3 years (16%) of experience. Businesses employing the surveyed represented different sectors: first of all, services (57%), industry (28%) and trade (8%). Project experience was obtained by the surveyed from various kinds of projects. The largest percentage of the surveyed constituted people working in companies employing more than 250 people (35%) and 10 – 49 people (25%). These were businesses with nationally and internationally active companies (65%), as well as the ones operating only in Poland (30%) and only abroad (6%). The majority of projects (57%) was implemented as external projects, i.e. at the request of external clients, while the rest (43%) as internal projects, that is for internal purposes. Project budgets indicated most often were those amounting to ca. PLN 1,000,000 (10%) and PLN 50,000 (6%). Durations of the project were as follows: half a year – 15%, year – 12% and 3 months – 11%.

The research concerned 19 issues of social responsibility in the projects, according to the P5 standard, i.e.:

- labour practices and decent work
- labour/management relations
- occupational health and safety in the project
- training and education,
- organisational learning,
- diversity and equal opportunity,
- local competence development
- community support,
- public policy/compliance,
- customer health and safety,
- products and services labelling,
- market communications and advertising,
- customer privacy,
- equal treatment,

- child labour,
- forced or compulsory labour,
- investment and procurement practices,
- bribery and corruption,
- anti-competition behaviour.

Each particular issue was assigned with good practices demonstrating that a given issue was taken into consideration in projects, e.g. for training and education:

- Are shortages of skills and development needs of project participants (project managers, project team members, managers, support cells) examined?
- Are participants of projects supported and encouraged to undertake training and development activities?
- Do project managers act as mentors and trainers of the project team as regards the development of their skills?

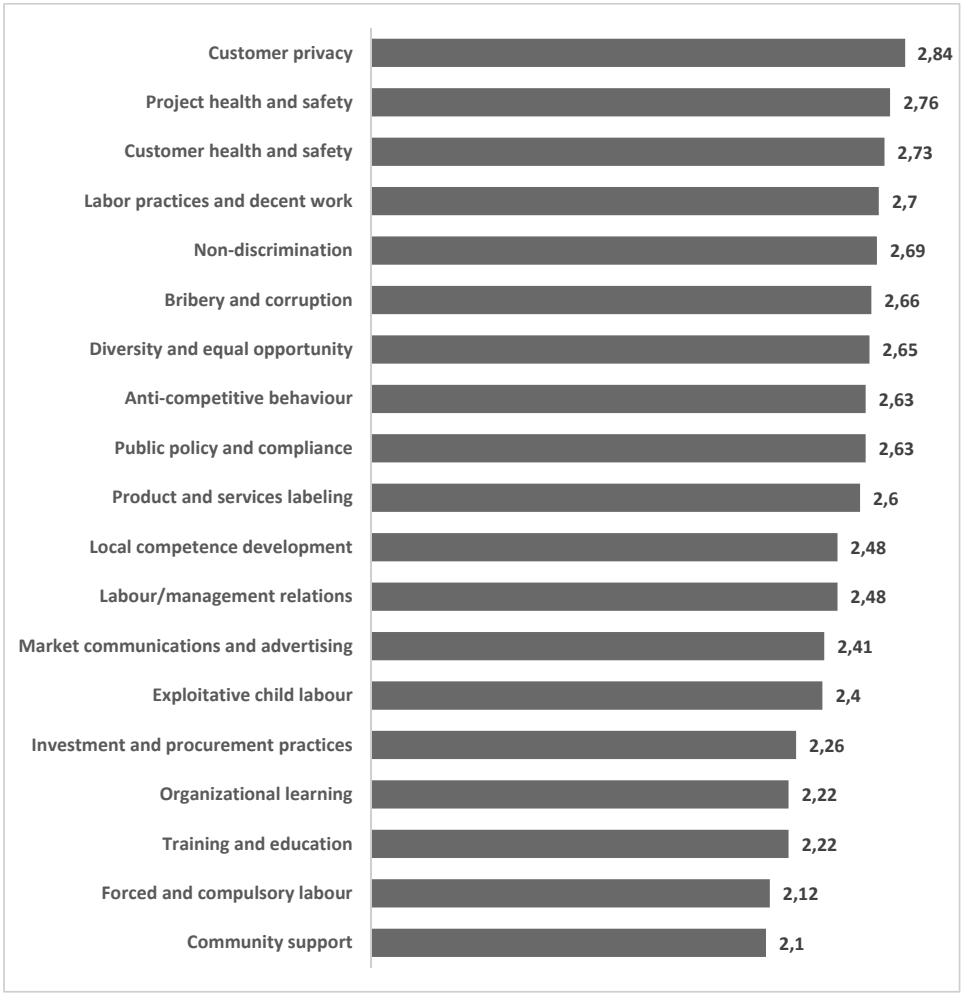
A total of 59 best practices were formulated in the survey. Their wording and assignment to particular issues were based on the structure of the P5 version 1.5.[18]

Their application was evaluated according to the following diagram: 0 = I don't know, 1 = never or in few projects implemented in the organisation, 2 = usually/in most projects implemented in the organisation, 3 = always/in every project implemented in the organisation.

The research produced results as presented in Figure 1 (ordered according to average results).

[18] The GPM Global P5 Standard for Sustainability in Project Management. People, Planet and Profit, Project Processes and Products, The GPM 2014

Figure 1. Inclusion of issues of social responsibility in projects



Source: prepared by the author

The average from all the issues covered by the survey was **2.50**, which means that, in most cases, the analysed companies use proven good practices related to social responsibility in projects. The highest compliance with good practices was recorded for project client privacy (2.84), occupational health and safety in the project (2.76) and project clients (2.73). The lowest results were recorded for community support (2.10), forced and compulsory labour (2.12), as well as training and education and organisational learning (2.22).

The issues of **labour practices and decent work**, related to taking into consideration the interest of project participants, such as safety, stability and dignity, remuneration for work adequate to requirements, appropriate working conditions, work-life balance

and compliance of forms of employment in projects with the employment rules within the sector. The average result amounted to 2.70. The best result (2.83) was recorded for companies employing from 50 to 99 people, while the worst in sole proprietorship (2.46).

Labour/management relations related to the issues of cooperation in implementation of project results, supporting projects by the management, teamworking atmosphere, appreciating efforts of contractors, as well as building the company's position as ‚Employer of Choice.' The average result of this group was 2.48. The best result (2.60) was recorded for companies employing from 50 to 99 people, and the worst in sole proprietorship (2.39).

The issues of **project health and safety** covered the compliance with legal health and safety requirements and regulations, undertaking actions limiting or eliminating health and safety hazards, minimisation of negative effects on occupational health and safety or health related to the use of project products, and preparation of emergency plans in case of hazards for health or safety of project participants. The average result of this group was 2.76.

The issues of **training and education** related to diagnosing skills and development needs of project participants, supporting and encouraging them to undertake training and development activities, performing the role of mentors and trainers of the project team by project managers. The average result was 2.22. The highest results were recorded among people inexperienced in working on projects – up to 3 years of experience (2.47), while the lowest (2.07) among people with 4 – 7 years of experience.

The issues of **organizational learning** covered collection and analysis of project experiences, analysing recommendations of project experiences, using of these experiences, as well as system solutions supporting and utilising project experiences of companies from outside the company. The average result was 2.22.

Research on **diversity and equal opportunity** related to issues of discrimination in work environment, management's response to inequalities, as well as inclusion of diversity of the team in the recruitment process. The average result was 2.65. The best result (2.85) was recorded for companies employing from 50 to 99 people, and the worst in sole proprietorship (2.58).

The issues of **local competence development** related to relations of the company and project management with local community, using resources of local community in projects, preference of the local labour market, as well as seeking and involving local business partners. An average result for these was 2.48. The best result was recorded for nationally active companies (2.61), while the worst for internationally active companies (2.28).

The study covered also the issues of **community support** which is affected by the project – its approval and possibilities for supporting this community. The average result for these issues was 2.10. Cooperation between the organisation and the community was most often recorded in enterprises operating within the country (2.23), in other organisations the frequency of cooperation was lower and ranged between 2.03 and 2.05.

Issues related to **public policy and compliance** covered the observance of rights and customs of the country/region, mechanisms ensuring the compliance of companies with regulations and customs, as well as the system for communicating and reporting this compliance. The average result for these issues was 2.63.

Research on the impact of project products on **customer health and safety** covered issues of respecting valid regulations on occupational health and safety and safety standards of products, equipping products with safe use information for clients/consumers. The average result for these issues was 2.73.

Project products were also related to the issues of **product and services labelling** relating to safe use and disposal of products and services, as well as other factors which could cause negative environmental or social impacts, and establishment of uniform procedures for meeting requirements for products and services for all deliveries. The average result of this group of issues was 2.60.

Issues of **market communications and advertising** related to transferring credible and exhaustive information to the market participants, taking into consideration the diversity of information market, as well as responding to incidents relating to the non-compliance of this information with regulations, human rights, environmental impacts, public rights or policy. The average result was 2.41.

The study covered also issues **customer privacy**, i.e. existence and observance of organisational principles and procedures protecting customer privacy throughout the project and after its completion. The average result was 2.84.

The survey focused also on issues of **non-discrimination** regardless of race, colour of skin, origin, age, religion, disability, gender, psychosexual orientation, military veteran status, pregnancy, etc. Moreover, the research sought to answer whether decision-making process is free of prejudice and whether the amount of remuneration depends exclusively on skills, personal contribution and results. The average result was 2.69. The survey shows that equal treatment is related to experience in projects; employees with more than 7 years of experience – 2.72 and with up to 3 years of experience – 2.66.

Issues of **exploitative child labour** were covered by the study owing to the need to determine whether no children are employed in any part of the supply chain and whether suspected cases of child labour are reported. The average result was 2.40.

The study on **forced and compulsory labour** related to diagnosing forced labour practices in the supply chain, reporting these practices and establishment of procedures to prevent them. The average result was 2.12.

The subject of the study was also **investment and procurement processes** and the answer was sought to the question whether procedures of selection and implementation of projects reflect the issues of sustainable development, as well social, environmental and economic effects of projects. The average result was 2.26.

Insofar as **bribery and corruption** were concerned, the survey investigated whether this phenomenon is sufficiently limited in companies, whether projects implement mechanisms ensuring safe delivery of information on bribery by the informing party, whether

members of the board are instructed not to organise and accept bribes and whether bribery attempts are disclosed and severely punished. The average result was 2.66.

As regards counteracting **anti-competitive behaviour** the research covered the use of solutions aimed at eliminating bid rigging and price fixing practices. The average result \was 2.63. According to the employees of units cooperating in implementation of projects, solutions eliminating bid rigging and price fixing are always used (3.00), while project managers think that such actions are less common (2.52).

The above summary results are based on indications concerning the use of good practices concerning particular issues.

Table 2 specifies nine most common good practices.

Table 2. Most common good practices concerning social responsibility of projects[19]

14.1	Are the project participants evenly treated, regardless of their race, colour of skin, national or ethnic origin, age, religion, disability, gender, sexual orientation, sexual identity and expression, military veteran status, pregnancy, etc.?	2.95 (125)
3.1	Are legal requirements and occupational health and safety regulations considered and observed in the project?	2.94 (127)
6.1	Does the project ensure that all participants of projects are equally treated – regardless of their sex, age, political views, religion, nationality, education, etc. – and only their skills and performance are taken into account?	2.92 (125)
10.2	Does the project ensure that valid OHS regulations and product safety standards are observed?	2.92 (117)
1.3	Are working conditions appropriate: work environment, occupational health and safety regulations, operation time, holiday leaves, off work days, established rules of redundancy and dismissal?	2.87 (120)
1.5	Are the forms and rules of employment in projects consistent with the rules of employment within the sector?	2.86 (116)
10.3	Are project products equipped with proper safe use information for clients/consumers?	2.85 (93)
13.1	Are there any organisational rules and procedures protecting customer privacy throughout the project and after its completion, and are they observed?	2.84 (116)
1.1	Is the form of employment in projects consistent with legitimate interests of employees (or does it protect their interests, such as safety, stability and dignity)?	2.82 (117)

Source: prepared by the author

On the other hand, Table 3 compares ten least popular practices.

[19] The table presents only diagnostic values, excluding answers 'I don't know' and 'not applicable.'

Table 3. Least popular good practices concerning social responsibility of projects[20]

7.3	Are local partners preferred while engaging and searching for external partners/suppliers for the project?	2.15 (110)
4.1	Are shortages of skills and development needs of project participants (project managers, project team members, organisation managers, support cells) examined?	2.13 (120)
17.2	Is the implementation of the principles of sustainable development controlled and reported?	2.10 (87)
5.4	Does any special cell or other system solution of the organisation support the collection and use of project experiences?	2.07 (109)
8.2	Are possibilities for supporting the project-affected community taken into consideration (through actions not necessarily directly related to the project)?	1.97 (88)
16.2	Are suspected cases of forced labour reported?	1.93 (54)
15.2	Are suspected cases of child labour reported?	1.91 (43)
8.3	Are any measures taken aimed at winning local community acceptance for the project?	1.90 (84)
12.3	Are incidents relating to non-compliance with regulations, human rights, environmental impacts, public rights or policy reported?	1.85 (80)
5.5	Is industry experience related to management of similar projects – from outside the parent organisation (e.g. professional associations, trade organisations) – accumulated, analysed and used?	1.84 (115)

Source: prepared by the author

The study concerned also the knowledge of standards of social responsibility and sustainable development (Table 4).

Table 4. Knowledge of social responsibility standards

Standards	Number of indications	%
ISO 26 000 Guidance on social responsibility	73	57
OECD Guidelines for multinational enterprises	32	25
United Nations Global Compact	24	19
IFC Environmental and Social Performance Standards	23	18
SA 8000 Social Accountability standard	22	17
AA 1000 Stakeholder Engagement Standard	14	11
GPM Global P5 Standard	9	7

Source: prepared by the author

[20] The table presents only diagnostic values, excluding answers 'I don't know' and 'not applicable.'

28% of respondents did not indicate any standards. Furthermore, 21% of the surveyed indicated guidelines not included in the question. A standard mentioned most often (57%) was ISO 26 000. The most popular sources of information on social responsibility and sustainable development were scientific and web sources (39%), trainings or conferences financed or organised by the employer (17%).

Only two of the examined declared that they have a certificate related to competences from the scope of social responsibility and sustainable development.

4. Summary

The survey concerning social responsibility of projects, the results of which are presented above, was a novelty in Poland. The first conclusion from this research is that the issue of social responsibility of the organisation and especially its connection to project activities is poorly understood. This resulted in a difficulty to reach competent respondents. As a result, 127 people were interviewed – only 3% of the attempts.

Hence, the results should be assessed taking into account the fact that people approving/participating in the survey had above-average level of knowledge of the issues of project management and social responsibility of projects. This can be explained by a relatively high synthetic result of the survey (2.50), meaning that good practices were used in most of the surveyed cases. A study on a larger sample should be conducted to verify this result.

As regards the detailed results of the survey, they may be interpreted as below.

Relatively wide, above-average use of good practices of social responsibility of projects concerned the issues subject to formal external and internal regulations of enterprises; e.g.: customer privacy – 2.84, project health and safety – 2.76, health and safety of the project client – 2.74, bribery and corruption – 2.66 public policy and compliance – 2.63, anti-competitive behaviour – 2.63, product and services labelling – 2.60.

The same applies to the issues subject to informal regulations important for the society; e.g.: labour practices and decent work – 2.70, non-discrimination – 2.69, diversity and equal opportunity – 2.65.

The issue evaluated below the average is the use of good practices concerning the internal project issues such as: labour/management relations – 2.48, market communications and advertising – 2.41, investment and procurement practices -2.26, training and education – 2.22, organisational learning – 2.22. It proves a relatively low project maturity of the surveyed companies.

A limited scope of use of good practices was also recorded for the issues for which the project management bears no direct responsibility, e.g. exploitative child labor – 2.40, forced or compulsory labor – 2.12.

Application of good practices of cooperation between companies and project management and project stakeholders is low as compared to needs and possibilities; for instance, for local competence development it was 2.48 and for community support – 2.10. These results are confirmed by the studies of stakeholder engagement in projects.

In a further perspective, the authors plan to broaden the studies, as well as the approach in other areas of social responsibility of projects, in accordance with the structure of the GPM P5 standard.

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PRiSM SP2 Sustainable PRINCE2 Training
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Tangible monetary incentives – important job motivators of the Poles

Motivating people to work has been a significant challenge in organisations for years. A motivated employee performs his tasks better and is more engaged in his work. In order to effectively motivate employees, managers can use various incentives. One of the main groups of employee incentives consists of tangible monetary incentives. The conducted research implies that they still play an important role in motivating the Poles. The respondents assessed the importance of the amount of basic salary, bonuses, cash awards, share in the company's profit, and sales commissions. It turned out that the most important motivator from among all tangible monetary incentives is the amount of basic salary. On the other hand, the least important incentive was share in the company's profit. The research also attempted to compare expectations with regard to monetary incentives with the actual assessment of how they work as motivators or demotivators. There is a similarity between the expectations and the perception of a given tangible monetary incentive as a motivational factor, and its application at the current workplace of the respondents. The largest disproportions concern share in the company's profit, the amount of basic salary, and bonuses.

Introduction

For years, employee motivation has been a significant challenge for managers. Many theoreticians and practitioners of management struggle to find an answer to the seemingly simple question of how to make people want to do something, in other words, how to build relationships with employees and how to influence them to perform their assigned tasks efficiently, effectively and – most importantly – with proper level of commitment.

Many motivational concepts,[1] describing in detail the mechanism of building motivation and commitment in employees, emphasise the situational nature of this process. After all, the success of motivating may be affected, among others, by external factors (e.g. economic, legal or socio-cultural situation), internal factors (e.g. organisational culture, attitudes and behaviours of the superiors, the organisation's incentive system, etc.), as well as individual characteristics of employees (e.g. needs, interests or attitudes). A manager, knowing the possibilities and limitations of his attitude (*personality may be better*), the organisation he works for, and the employee he is to influence, selects an individual set of stimuli that should ensure motivational success. Unfortunately, there is no ready-made recipe for motivation, which is why it proves to be a difficult task for many people.

Since 1990, Poland – being in the period of catching up with the economic growth after the communism period – was characterised by special conditions for building motivation among employees: for most employees, the need to improve their living conditions was the key job motivator, hence their enormous sensitivity to monetary incentives. Today, after more than 25 years of Poland's functioning in the free market conditions and growth in the wealth of the Poles, the authors asked a question of whether remuneration is still the key motivator of Polish employees, or are there already reasons to expand the range of stimuli that guarantee effective motivation?

Further parts of the chapter present particular steps leading to obtaining an answer to the questions posed above. At the beginning, we will discuss the basic assumptions of theoretical research, and then present the methodical assumptions of the research and its findings. Finally, we will discuss conclusions drawn from the research.

Theoretical assumptions of the research

Between the year 1990, when Poland transitioned from the centrally planned economy to the free market economy, and 2015, GDP per capita in Poland increased 7.3 times – from USD 1,731 (in contemporary prices) to USD 12,500[2]. The observed GDP growth rate is impressive and the highest among all OECD states and in the entire Europe. The major improvement in the income level probably affected the motivation processes of Polish employees.

Motivation is a steering process that affects the behaviour of employees, including the reasons for this behaviour[3]. It includes actions related to organisation of specific activities, their directing and maintenance until the intended goal is reached – perfor-

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[1] Borkowska S., *Strategie wynagrodzeń, Oficyna Ekonomiczna*, Cracow 2004. Sekuła Z., *Motywowanie do pracy. Teorie i instrumenty*, PWE, Warsaw 2008. Kopertyńska M, *Motywowanie pracowników. Teoria i praktyka*, Palcet Publishing House, Warsaw 2009. Zarządzanie kapitałem ludzkim. Procesy-Narzędzia-Aplikacje, ed. by M. Juchnowicz, PWE, Warsaw 2014.

[2] Cipiur J., *Polska z największym w OECD i Europie wzrostem PKB na mieszkańca*, Obserwatorfinansowy.pl 22.03.2017.

[3] Forsyth P., *Jak motywować ludzi*, Helion Publishing House, Gliwice 2004, p. 13–15.

mance of the tasks assigned to the employees. The main idea of most contemporary studies concerning motivation is the assumption that, initially, a person expects something, feels a specific need, counts on achieving the intended results, and will thereby avoid something unwanted, provided that the person undertakes specific actions. The motivation level would thus depend on the urgency of the need, namely on how much the person wants to achieve the intended goal or award. It would also depend on an analysis of the likelihood of a given behaviour leading to execution of the specific goal. Finally, the motivation level depends on the level of faith in the perspective of a satisfactory implementation of this behaviour[4].

In the motivation process, the key role is played by stimuli, namely elements of events that contribute to inducing certain behaviours[5]. Stimuli can be internal (events related to physiological processes that occur inside the human body, e.g. body temperature change, blood pressure change or the feeling of hunger) and external (they mainly include money, social status or the desire to possess a certain item). However, it should be remembered that the use of only external motivation by managers, namely the use of all kinds of rewards and punishments (e.g. money, promotion, change of workplace, distinction, material award, public praise, and more personal ones, such as personal affinity, less formal contact), does not yield effects as good as internal motivation[6]. This type of motivation means that the employee performs work due to personal interests, out of his own urge to improve and pursue his own predispositions, and thus it does not require continuous supervision of the superior.

The superior has a wide range of incentives at his disposal, namely an extensive range of methods, rules, procedures, as well as organisational solutions, which affect the motivation process. In order to motivate effectively, the selection of tools and instruments must be adequate for the conditions prevailing in a given company. The desired effect of application of incentives is to awake in employees the desire to self-improve, raise their qualifications, improve their work efficiency.

Incentives can be divided into three main groups:

- Tangible monetary incentives
- Tangible non-monetary incentives
- Intangible incentives

Tangible monetary incentives, namely salary and related tools, are a certain compensation for the performed work. The level of earnings directly affects the quality of life, determines the possibility to purchase goods, satisfy needs. If greater commitment

[4] Gick A., Tarczyńska M., *Motywowanie pracowników*, Polskie Wydawnictwo Ekonomiczne, Warsaw 1999, p. 31–32.

[5] Pocztowski A., *Zarządzanie zasobami ludzkimi,* Polskie Wydawnictwo Ekonomiczne, Warsaw 2007, p. 208.

[6] *Efektywne motywowanie pracowników,* Dashöfer Holding Ltd, Wydawnictwo Verlag Dashofer Sp. z o.o. Warsaw 2011, p. 6.

and effort directly translates to higher earnings, and additionally the employee has specific material needs, it is almost certain that his work will be more effective and will bring larger profits to the company. Apart from the basic remuneration, the superior can use bonuses, awards, functional allowances, and wage rises.

Tangible non-monetary incentives are also classified as a method of financial gratification, but they are a frequent addition, showing the prestige of the company or a high position among employees. This group includes: corporate canteen, medical care package, use of sport packages and cultural events, club memberships, possibility to take a loan with the company, payment of apartment rental fees, use of company car, mobile phone, computer, additional insurance.

Intangible incentives cover all stimuli affecting the employee, the use of which does not incur any costs for the company. They include, among others, good atmosphere at work, possibility of promotion and development, flexible working hours, participation of employees in management, security and stabilisation of employment, and independence.

Methodical assumptions of the research

This issue of financial motivation constituted a fragment of broader research concerning the applied incentives, their use, and their effect on motivation or demotivation of employees, as well as expectations towards the applied incentives. The purpose of the study was to identify the significance of various incentives (tangible and intangible) for employees and to assess the level of their application in the current workplaces of the surveyed people. The study was conducted by a team of employees of the Management Institute of the Warsaw School of Economics (SGH)[7] in 2015.

The applied research tool was a survey questionnaire, which consisted of introduction, main body, and particulars. The main body of the questionnaire listed the following tangible monetary incentives:

- amount of basic salary (without bonuses and cash awards),
- bonuses,
- cash awards,
- share in the company's profit (stock options, percentage of profit),
- profit commissions,
- other.

Respondents were asked to provide an overall assessment of the significance of the aforementioned incentives (on a scale of 1-5, where 1- absolutely insignificant, 2- rather insignificant, 3- difficult to tell, 4- rather significant, 5- absolutely significant) and indicate whether these incentives have a motivating or demotivating effect in their current

[7] The team consisted of: dr hab., prof. SGH Piotr Wachowiak, dr Sylwester Gregorczyk, dr Wioletta Mierzejewska, mgr Bartosz Majewski, mgr Albert Tomaszewski

job (scale from+5 to -5, where – 5– largely demotivating, 0– neither motivating nor demotivating, 5– largely motivating).

The respondents consisted of students of graduate study programmes organised by the Institute of Management of the Warsaw School of Economics (SGH). 85 people participated in the described study. Most of the respondents were women (62.4%), predominantly people holding executive positions (56.5%), and born after 1980 (85.9%). Most of the surveyed people have a Bachelor's degree (50.6%). The detailed characteristics of the respondents are presented in Table 1.

Table 1. Characteristics of the respondents

Criterion		Share
Sex	Women	62.4%
	Men	37.6%
Position	Junior manager	29.4%
	Senior manager	11.7%
	Executive position	56.5%
	Owner/co-owner	2.4%
Date of birth	1970-79	12.9%
	1980-89	45.9%
	1990 and later	40.0%
	No data	1.2%
Education	Master's and engineer's degree	7.1%
	Bachelor's degree	50.6%
	Master's degree	28.2%
	Engineer's degree	9.4%
	No data	4.7%

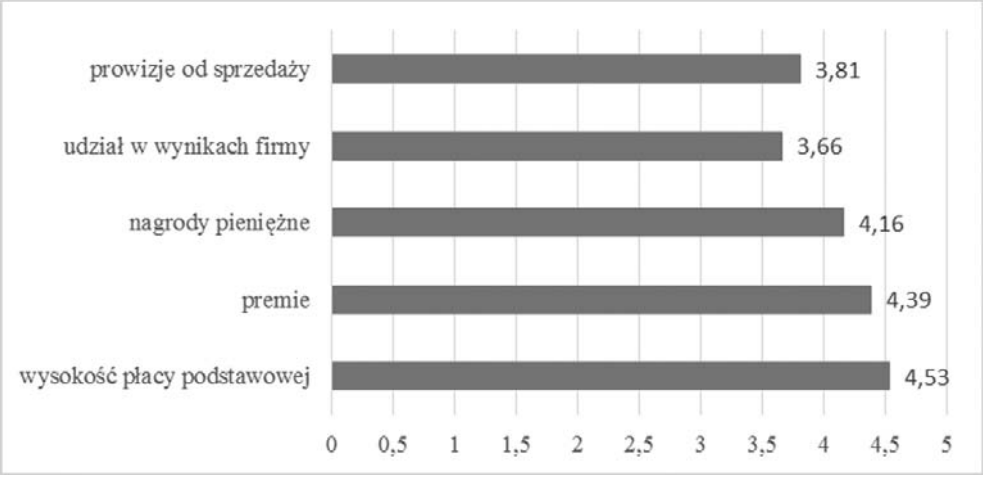
Source: prepared by the author.

The importance of tangible monetary incentives according to the respondents

The results of the conducted study showed that tangible monetary incentives are one of the basic motivators. The respondents assessed the importance of the amount of basic salary, bonuses, cash awards, share in the company's profit, and sales commissions. It turned out that the most important motivator from among all tangible monetary incentives is the amount of basic salary. It obtained an average score above 4.5, which gives it the third place among all incentives (including intangible). On the other hand, the least important incentive was share in the company's profit. This probably resulted from the

narrow scope of application of this tool by the companies, where the respondents work. Figure 1 shows the findings for average scores of the significance of all tangible monetary incentives according to the respondents.

Figure 1. Average score of the significance of tangible monetary incentives



Source: prepared by the author.

Polish	English
prowizje od sprzedaży	sales commissions
udział w wynikach firmy	share in the company's profit
nagrody pieniężne	cash awards
premie	bonuses
wysokość płacy podstawowej	amount of basic salary

A detailed analysis of the respondents' answers shows that more than 66% of the respondents consider the amount of basic salary to be an absolutely significant motivation factor (scored 5 on the scale of 1–5). None of the surveyed respondents considered this factor absolutely insignificant, and only 4% deemed it rather insignificant. It turns out that the amount of basic salary is more important for women than for men. As many as 71.2% of women stated that it is an absolutely significant incentive. Among men, this percentage amounted to only 56.3%. Interestingly, the position held is of no importance in the assessment of basic salary as a motivational factor. It is important on each position. This is proven by the fact that more than 60% of owners, junior managers and senior managers, as well as executive employees acknowledged it to be an absolutely significant motivator. On the other hand, age is important in the assessment of basic salary as a motivational factor. Younger employees attach great importance to basic sala-

ry. As many as 71.8% of respondents born between 1980-89 and as much as 64.7% born after 1990 acknowledged it to be an absolutely significant motivator. People born before 1979 considered it a significant motivator, but less than half attached it the greatest importance. On the other hand, basic salary is the most important for people working for 2 to 5 years. The importance of basic salary as a motivational factor decreases with time. People who had only just started their career did not indicate basic salary as an absolutely significant motivational factor quite as often. It is worth noting as a curiosity that employees with less job seniority in a given company attach great importance to basic salary. 78.8% of people working for less than 1 year decided that basic salary is an absolutely significant motivating factor. Among those employed for 1–3 years, this percentage amounted to 61.5%. People who had been working for a longer period of time do not perceive basic salary as a substantially significant motivator.

The next incentive, namely bonuses, was deemed an absolutely significant motivator by almost 50% of the respondents. The importance of bonuses as a motivational factor is also reinforced by the fact that 42% of the respondents considered it a rather significant motivator, and no one considered bonuses to be an absolutely insignificant motivator. Bonuses are almost equally as important for women and men. However, a slightly greater percentage (51.9%) of women than men indicated them as an absolutely significant motivator. Bonuses are rather significant and absolutely significant for almost all employees, regardless of the position held. In each category, distinguished due to the position held, almost 90% of the respondents or more indicated the importance of this motivational factor as rather significant or absolutely significant. Interestingly, the strongest impact of bonuses as a motivational factor can be seen among top managers. 80% of respondents from this group indicated that bonuses are an absolutely significant motivating factor. The largest differences in the way the significance of bonuses is perceived can be only seen in groups of respondents of different ages. Bonuses as motivators are more significant for younger employees. More than 55% of employees born after 1990 pointed out that a bonus is an absolutely significant motivating factor. Also people with shorter general work experience attach greater importance to bonuses than those who had been working for a longer time. Monetary incentive, in this form, plays a vital role for the group of employees working for less than 2 years (62.5% of responses).

The third monetary incentive in terms of importance is cash awards. As much as 81% of the respondents considered them to be absolutely significant and rather significant. However, in the case of cash awards, some respondents are indecisive in their assessment as a motivational factor. 12% of the respondents stated that it is "difficult to say" whether cash awards motivate them. As compared to other monetary incentives, this is quite a high percentage. Cash awards are equally as important for women and men. In both groups, a comparable percentage of the respondents (ca. 40%) indicated the high significance of cash awards as a motivating factor. Cash awards, similarly to bonuses, are the most important for top managers (60.0%

of indications). Perhaps this results from the reward systems based on allowances to the basic salary. Cash awards are also very important for younger people. Nearly 50% of respondents born after 1990 considered them an absolutely significant incentive. The importance of cash awards as a significant motivational factor decreases along with the length of general work experience. Among people working for more than 10 years, only 25% indicated this incentive as absolutely significant. The above is contrasted by people working for a very short period of time, namely less than 2 years. In this group, more than 56% indicated cash awards as an absolutely significant motivator.

The fourth place in terms of significance as a motivator was held by commissions. They are not as important of a motivator as the previous incentives. They were indicated as an absolutely significant incentive by only 1/3 of the respondents, although they are rather significant for more than 40%. Sales commissions cannot be used everywhere, which was reflected in the 7% of "rather insignificant" and 9% of "absolutely insignificant" answers. Sales commissions are particularly important for men. Nearly 43.8% of men indicated them as absolutely significant, and only 25% of women gave them a similar score. This can mean that, in the examined sample, men worked on positions, where incentive by means of sales commissions could have been applied. Interestingly, commissions are absolutely important for top managers. As many as 70% of the respondents considered them an absolutely significant motivator. However, they are not as important for junior managers and ordinary employees. Also in the case of commissions, their meaning is large in the case of older employees. In the group of the oldest respondents (born between 1970-79), the percentage of persons who indicated commission as an absolutely significant motivating factor was as high as 45.5%. In the subsequent two groups, this percentage was definitely lower. Commissions are also more significant for people with longer general work experience. Along with the increase in years worked grows the number of people who indicated commissions as an absolutely significant incentive.

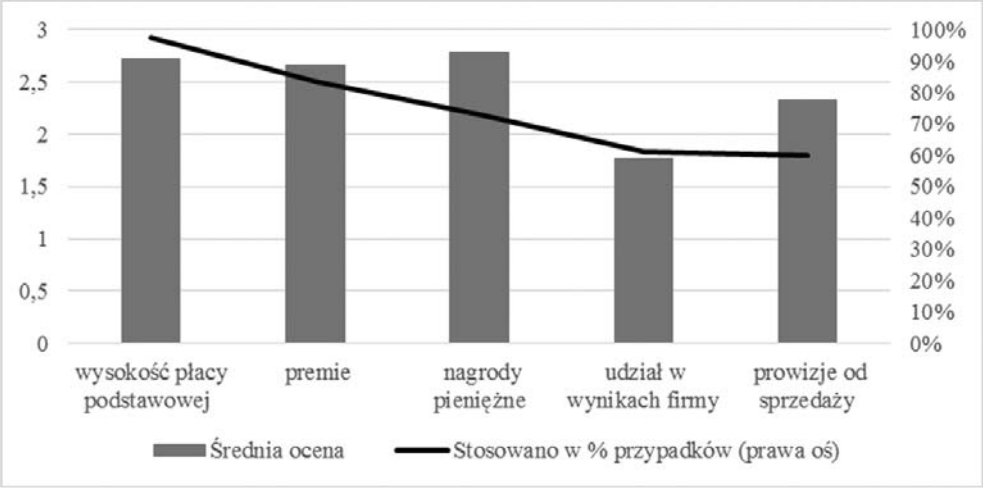
Share in the company's income obtained the lowest scores of all monetary incentives. Only 19% of the respondents indicated it as an absolutely significant motivator. On the other hand, as much as 29% were undecided on the assessment of the significance of this motivational factor. Share in income is an absolutely significant motivating factor mostly for men. As many as 25% of respondents from this group indicated the importance of this incentive. Women perceive this kind of motivation as significant to a smaller extent. Share in income is important mainly for top managers. This is consistent with the assumptions of the use of this incentive, which is intended mainly for senior managers. The remaining groups of respondents did not perceive this tool as a significant motivational factor. Share in the company's income is motivating mostly for elderly people. This is probably connected with the access to such incentives. The importance of this motivational factor is also given better scores by people with longer general work experience. Among people working for 10 years and more, as much as

25% indicated the absolutely great importance of this motivational factor. None of the people working for less than 2 years deemed share in the company's profit to be an absolutely significant motivator.

The impact of tangible monetary incentives used in companies on motivation and demotivation of the respondents

Tangible monetary incentives are used to motivate employees in most companies. The incentive used the most is the level of basic salary. Bonuses and cash awards, as well as commissions are used slightly less frequently. The most rarely used tool is share in the company's profit (indicated by 61% of the respondents). Interestingly, 16.5% of the examined companies do not use bonuses, 27.1% do not use cash awards, 38.8% – share in profit, and 40.0% do not use sales commission as an incentive.

Figure 2. The use of tangible monetary incentives as compared to their significance for employees



Source: prepared by the author.

Polish	English
wysokość płacy podstawowej	amount of basic salary
premie	bonuses
nagrody pieniężne	cash awards
udział w wynikach firmy	share in the company's profit
prowizje od sprzedaży	sales commissions
Średnia ocean	Average score
Stosowano w % przypadków (prawa oś)	Used in % of cases (right axis)

Tangible monetary incentives used by companies have a rather motivating effect on employees. The average scores were at a positive level, which means positive impact on employees. The most motivating effect is displayed by cash awards and bonuses, as well as basic salary.

Basic salary serves as a motivational factor in most companies represented by the respondents. However, there is a noticeable difference in the perception of basic salary as a motivator/demotivator by women and men. In the case of men, as much as 84.4% indicated that basic salary has a motivational function. In the group of women, this percentage was 7 percentage points lower. Basic salary demotivated women to a greater extent than men. This may be a result of the still existing inequalities in remuneration of both sexes.

Basic salary motivates senior and junior managers more (respectively, 80.0% and 92.0% of responses) than ordinary employees (76.1% of responses). It was indicated as a demotivator mainly by employees on executive positions (19.6% of responses) and junior managers (8.0% of responses), while no senior manager indicated basic salary as a demotivator. The importance of basic salary as a motivational factor decreases with age. Interestingly, basic salary is indicated as a demotivator less frequently also in the group of older employees. Perhaps with age and development of their careers, employees focus on other incentives. Remarkably, general work experience is of no importance for the perception of basic salary as a motivator or a demotivator. It demotivates mostly employees working for 5 to 10 years, and motivates mostly employees working for 2 to 5 years.In the case of the second most important monetary incentive, namely bonuses, they are of large importance in motivating women and men, but more women indicated bonus amount as a discouraging factor in their present work (20.5% of women and 11.5% of men). Bonuses constitute important motivators mainly for managers. Curiously, 100% of top managers indicated that they perceive bonuses as a motivating factor in the present workplace. Bonuses are probably more often (and in larger amounts) used on managerial positions in the examined companies. The largest percentage of people motivated by bonuses in the present workplace consisted of older employees. In this group, almost 90% of respondents indicated that bonuses motivate them and no one stated that they are discouraging.

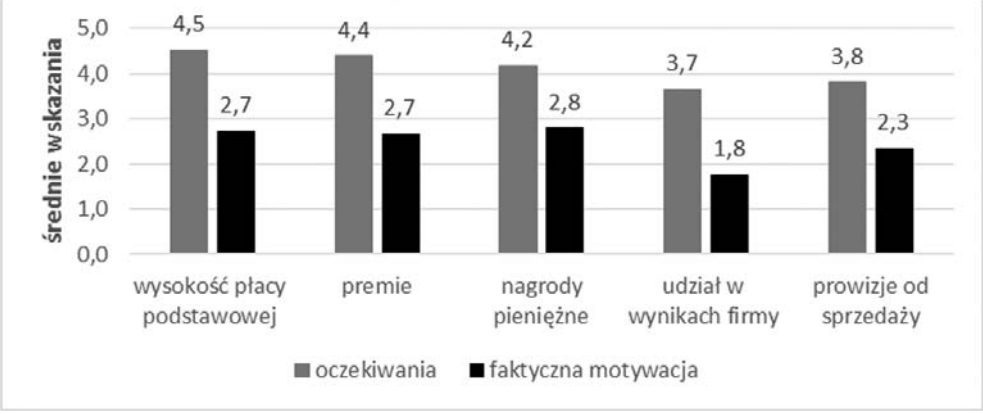
In the case of other tangible monetary incentives, no significant differences were observed in groups of employees distinguished due to age, job seniority, sex, education or the position held.

Expectations versus the reality of motivation

The study attempted to compare expectations with regard to monetary incentives with the actual assessment of how they work as motivators or demotivators, by comparing the average indications of respondents. We can see a similarity between the expectations and the perception of a given tangible monetary incentive as a motivational factor, and its application in the current workplace of the respondents. The largest dispropor-

tions concern share in the company's profit, the amount of basic salary, and bonuses. While the respondents have a high opinion about these tools as motivational factors, it is obvious that their present level is unsatisfactory for the respondents.

Figure 3. Expectations versus actual level of motivation by tangible monetary incentives

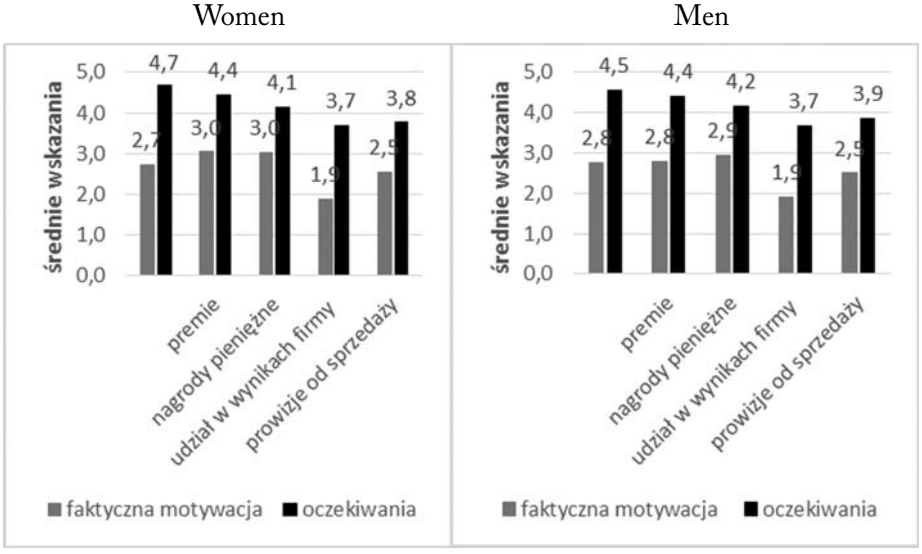


Source: prepared by the author.

Polish	**English**
średnie wskazania	average score
wysokość płacy podstawowej	amount of basic salary
premie	bonuses
nagrody pieniężne	cash awards
udział w wynikach firmy	share in the company's profit
prowizje od sprzedaży	sales commissions
oczekiwania	expectations
faktyczna motywacja	actual level of motivation

When comparing the expected and the actual motivation in various groups of employees, it can be seen that, in the case of men and women, the differences between the expected values and the actual ones are similar. The largest discrepancies in both groups concern basic salary and share in the company's profit.

Figure 4. Expectations versus actual level of motivation by tangible monetary incentives with breakdown into the respondents' sex



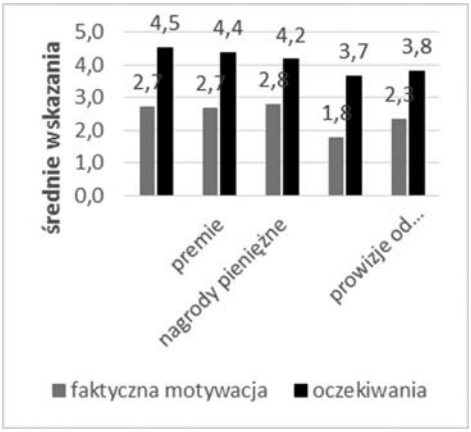
Source: prepared by the author.

Polish	**English**
średnie wskazania	average score
premie	bonuses
nagrody pieniężne	cash awards
udział w wynikach firmy	share in the company's profit
prowizje od sprzedaży	sales commissions
faktyczna motywacja	actual level of motivation
oczekiwania	expectations

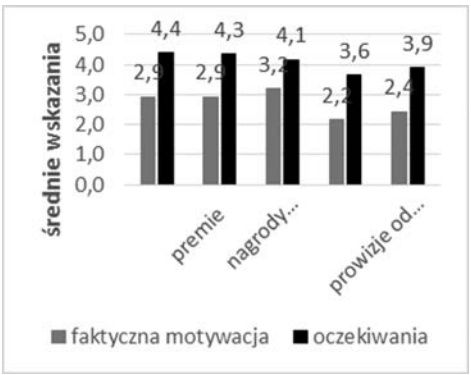
When distinguishing groups according to the position held, it should be noted that, in the case of top managers, the disproportions between the expected and the actual motivation are the smallest. This may be a sign of greater satisfaction with tangible monetary incentives in this group than in the case of the other two groups. Similar disproportions between the expectations and the actual motivation appear in the group of junior managers and ordinary employees. Interestingly, the first place in terms of the scale of discrepancies is held by share in the company's profit, while basic salary is only on the second place.

Figure 5. Expectations versus actual level of motivation by tangible monetary incentives with breakdown into positions held by the respondents

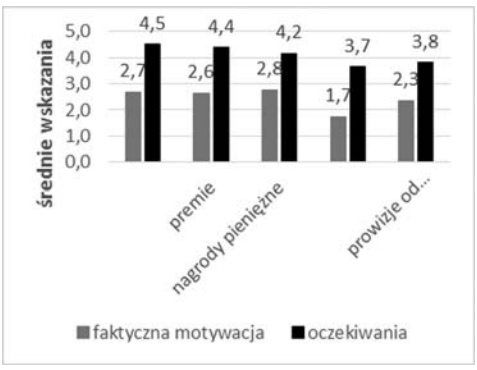
Junior manager



Senior manager



Regular employee



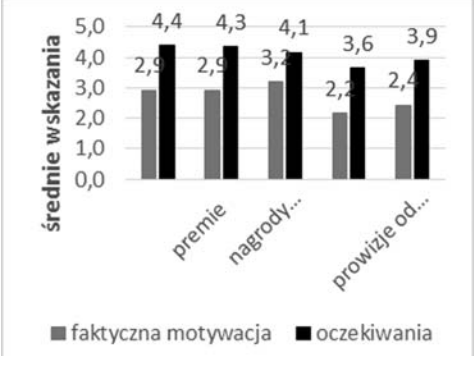
Source: prepared by the author.

Polish	English
średnie wskazania	average score
premie	bonuses
nagrody pieniężne	cash awards
prowizje od…	sales commissions
faktyczna motywacja	actual level of motivation
oczekiwania	expectations

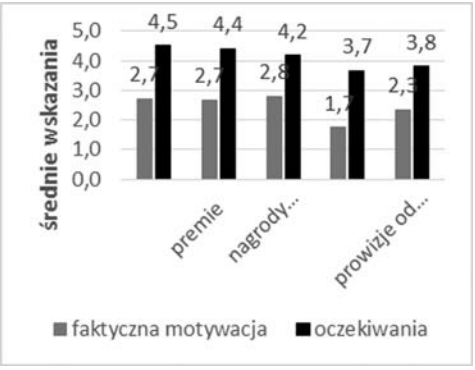
In the case of age of the employees, we can see diversity in each of the groups. Among senior employees, we can observe smaller disproportions between the expected and the actually provided monetary incentives. The first place in terms of disproportions in this group is held by share in the company's profit and sales commissions. This can partially indicate the willingness to participate in the results of the company's operations. In the case of the two other groups of employees, the expectations and the actual level of motivation is at a similar level. In both groups, the largest disproportions were recorded in the amount of basic salary.

Figure 6. Expectations versus actual level of motivation by tangible monetary incentives with breakdown into the respondents' age

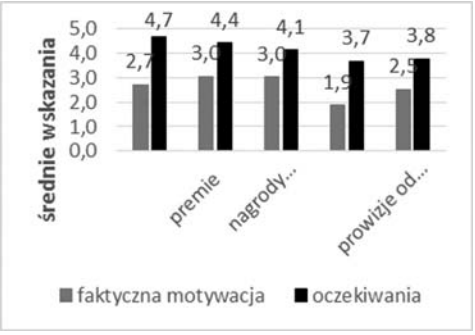
Born between 1970–79



Born between 1980–89



Born in 1990 and later



Source: prepared by the author.

Polish	English
średnie wskazania	average score
premie	bonuses
nagrody…	cash awards
prowizje od…	sales commissions
faktyczna motywacja	actual level of motivation
oczekiwania	expectations

Conclusion/Summary

The results of the conducted study showed that tangible monetary incentives are one of the basic motivators. The most important motivator from among all tangible monetary incentives is the amount of basic salary. In contrast, the least important incentive was share in the company's profit. On the other hand, basic salary is the most important for people working for 2 to

5 years. The importance of basic salary as a motivational factor decreases along with the length of job seniority. Bonuses were deemed an absolutely significant motivator by almost 50% of respondents. The third monetary incentive in terms of importance is cash awards. As much as 81% of the respondents considered them to be absolutely significant and rather significant. The importance of cash awards as a significant motivational factor decreases along with the length of general work experience. Among people working for more than 10 years, only 25% stated that this incentive is absolutely significant. The fourth place in terms of significance as a motivator was held by commissions. They are not as important of a motivator as the previous incentives. Share in the company's income obtained the lowest scores of all monetary incentives. Only 19% of the respondents indicated it as an absolutely significant motivator.

Tangible monetary incentives are used to motivate employees in most companies. The incentive used the most is the level of basic salary. Bonuses and cash awards, as well as commissions are used slightly less frequently. The most rarely used tool is share in the company's profit. We can notice a similarity between the expectations and the perception of a given tangible monetary incentive as a motivational factor, and its application in the current workplace. The largest disproportions concern share in the company's profit, the amount of basic salary, and bonuses.

The still observed important role of tangible monetary incentives in motivating the Poles, despite the large growth of GDP *per capita*, probably results from the ever-high share of individual consumption in GDP. Statistical data show that Polish households spend nearly 60 percent of their income on the immediate costs of living. If the level of GDP increased by one percentage point, it would ensure PLN 270 more per person per year. It may not seem like much, but it is really worth seeking this money and employees try to obtain it.

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