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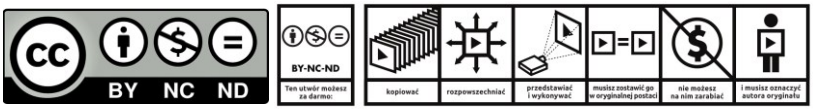

Wersją pierwotną Kwartalnika Naukowego „Organizacja i Zarządzanie" jest wersja papierowa

CONTENTS

CONTEMPORARY THINKING ABOUT THEORY BUILDING: A REVIEW OF THE CONCEPT WITH APPLICATION TO ORGANISATIONAL POLITICS RESEARCHING[1]

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Abstract: This article contributes to the rapidly growing body of literature regarding general good theory building practices with regard to organisational politics. The results of the review revealed and highlighted five core components of contemporary thinking about theory building: constrained comprehending, conjunctive theorising, theorising styles, pragmatic-empirical approach, and science-practice gap. Tying together those insights, the authors have developed a framework to distinguish a specific set of recommendations which clarify and organise theoretical foundations of organisational politics researching: cooperation of academics and managers, requisite complexity, contextualisation, versatility, and process perspective. In the authors' opinion, this provides a substantial opportunity for theoretical advancement through a careful methodological application.

Keywords: theory building, organisational politics.

1. Introduction

This study relates to contemporary concepts of theory building in management science, the applicability of which has been evaluated in terms of theory building activities in the field of organisational politics. It attempts to answer the following two questions in the most comprehensive manner. Firstly, what does the contemporary approach to theory building in management science look like? Secondly, is the new, emerging approach important to the development of theoretical foundations of organisational politics and, if so, what are its

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consequences? Before we proceed to describe various theoretical approaches which may be useful in the field of organisational politics, we will briefly outline the understanding of theory adopted further in the study. We interpret theory as a set of interrelated assumptions, constructs and causal relationships between them (Bettis, Gambardella, Helfat, and Mitchell, 2014, p. 1411-1413; Kerlinger, 1986, p. 9; Sutton, and Staw, 1995, p. 371-384; Wright, 2017, p. 384-390). A strong theory also indicates processes owing to which we are able to understand systematic reasons for the occurrence of the actions, events, or structures in which we are interested. In general, theory helps to explain, understand, predict and control. Theory progresses as a result of its systematic development and rigorous verification of knowledge in an iterative process.

It is generally worth remembering the four principles of theoretical contribution evaluation. The first of them states that the broader a theory is, in terms of covering different phenomena, the better. The second principle prescribes a simple theory, i.e. a theory requiring a small number of assumptions. According to the third principle, a theory should include clear mechanisms explaining the interrelations proposed. The fourth and last principle states that a theory should provide relatively few viable alternative explanations.

The last decade has been characterised by increasingly strong advocating that a simplified, mechanistic perception of the organisation and processes occurring within it should be definitely abandoned, and a non-trivial, more complex view should be adopted, focusing on the interrelations between the elements of a whole and the processes of emergence (Dougherty, 2016). Following the foregoing, it is postulated that the level of complexity of theory and description language should be aligned with the diversity and the complexity of the organisational phenomena investigated, thus replacing the currently predominant striving for simplicity. This means focus on non-trivial theory building within the assumptions of ontology open to the world, of performative epistemology and poetic praxeology (Tsoukas, 2017, p. 132-153). The overall direction of action is that the theoretical discourse maintains possibly greatest relationality, timeliness, situationality and openness to interpretation. Following the above criteria, the authors selected five approaches to theory building in management science which became the key components of the contemporary view description. Combining the studies, the authors presented the concepts of constrained comprehending, conjugative theorising, theorising styles, pragmatic-empirical approach, and the gap between theory and practice. It leads to the conclusion that the management science methodology is at a turning point.

According to scientists involved in organisational politics, the process has its own specifics. Pursuing in that direction, the authors identified five relevant attributes, namely low visibility to the outside observer, complexity, important role of the context, polymorphism, and dynamics of power. It is worth noting that organisational politics theory building requires formulation of a set of metatheoretical rules which do not deviate from the specific nature of the process investigated. Such theoretical foundations, as the authors postulate and prove, comprise five

primary principles: cooperation of academics and managers, requisite complexity, contextualisation, versatility, and process perspective.

This study offers three potentially important implications for the progress of the management theory and practice, in particular for strategic management researchers, irrespective of their theoretical orientation. The first implication is of a methodological nature. It illustrates the building of a theory which is more developed and dynamic than traditional points of view. Following researchers believing there has recently been a methodological breakthrough, others have recently contested theory building based on determinism-related arguments and going as far as the sources of the static view of the organisation. Inclusion of the most important contemporary concepts, suggesting how to build a theory in management science, contributed to a more nuanced course of thinking about theory formulation and updating. This, in turn, made it possible to develop a more comprehensive approach towards theory building activities, and to discuss the complex role of a theorist.

Secondly, when trying to integrate contemporary literature on theory building into a single methodological perspective, the authors allowed for the most recent and the most important approaches. The efforts made enabled a more comprehensive perception of things, comprising the main five components which may be treated as specific aspects of modern theory building in management science. It should be noted and recognised that theorists were given greater choice so they could apply various approaches to theory building based on management science.

Thirdly, and apparently importantly, a new view was included in the theoretical research into organisational politics owing to the development of theoretical foundations aligned with the specifics of organisational politics. The suggested framework, covering five metatheoretical recommendations, even if slightly speculative, still improves our understanding of the way towards a more sophisticated organisational politics theory. The entire study is the first attempt of its kind in the subject literature.

2. Contemporary view of theory building in management science

An outline of the contemporary view of theory building in management science has been based on five emerging principles: constrained comprehending, conjugative theorising, theorising styles, pragmatic-empirical approach, and the gap between theory and practice.

2.1. The concept of constrained comprehending

Forty years ago, it was noted how often we happen to act although we cannot predict the consequences of such action, plan without the required knowledge, and organise despite lack of control (La Porte, 1975, p. 332-356). Weick rightly notes that as management science researchers we are still stuck in the circumstances surrounding the three aforementioned

inabilities, trying to link perception of reality to theoretical concepts (Weick, 2016, p. 333-346). From this perspective, of crucial importance are the eight types of theory building activities that constitute the concept of constrained comprehending. At this point, it is worth adding the assumption regarding lack of direct access to reality, and the inability to perceive neutrally.

The first of the tools constituting the theory building set of instruments are the assumptions being sets of claims regarding the phenomenon studied. The second type of theory building activity is differentiation. This type activity is aimed at strengthening explanation through determining how and why the activity subjects perceive a situation in a given manner, and how it affects their behaviours. Management science theorists also link perception and concepts so as not to perceive organisational reality without any conceptual reference, while not using concepts separated from perception. Concepts and observations limit each other. Another category of theory building activity is validation, i.e. a kind of confirmation of poorly documented assumptions in the areas of interest to other researchers. If a group of researchers see a validation having nothing to do with the assumption, they consider it inappropriate. If the validation is related to obvious things, it is considered unnecessary. All that plays a particularly important role in the context of statistical novelty, or significance. According to the constrained comprehending concept, the fifth element of theory building is related to the rule of requisite complexity, and it consists in complexification. This means that a variety of concepts is generated in order to define more-accurate-than-ever orientation in the complex circumstances of organisational differentiation and simultaneous organisational integration. Sixth of all, theory building is reflected in the outcomes of the wit and the insight, when experiences are realigned, reorganised, or reconstructed. This type of activity results in doubt and disbelief as to the knowledge possessed. Such proceeding is important as knowledge and ignorance need to be balanced, which means that wisdom does not manifest itself in what we know about facts, but in what we accept with limited confidence. The essence of the seventh component of theory building is in the interruption to find time for conscious feeling and thinking. The whole theory building activity completes the presentation of organisational phenomena to explain them in a clear and relatively detailed manner.

2.2. Theory complexification postulate

One should agree with Tsoukas who claims that coping with the complexity of the organisational world requires adoption and application of certain metatheoretical principles in conjugative theorizing (Tsoukas, 2017, p. 132-153). Recognition of three dualities is the starting point. The first one is the ontological duality, reflected in that the organisation as the subject of the research is an integrated whole, but also a process. The principle of ontology open to organisational reality emphasises that organisations are in a constant process of becoming, and that is why the future is open. Organisation members interact, owing to which organisation properties emerge, and organisational processes follow.

The second duality is of an epistemological nature, and it is related to generation of reliable knowledge: the organisation may be known either through identifying the existing relation patterns or through focusing interest on emerging interrelation patters. Those representations capture the essence of the phenomenon studied, and they are systematically interrelated. Each case studied contains elements of configurative uniqueness, although it also covers similarities with respect to other cases. The organisation constantly changes its internal states, and changes of its operation and development logic follow.

Performative epistemology assumes that cognition is an action oriented at seeing the logic of a practical activity carried out in a unique organisational situation. Here, theorising is of a performative nature in a dual sense. On the one hand, organisational phenomena are interpreted as interactive accomplishments, hence orientation at performance (action) facilitating occurrence of the phenomenon involved. On the other hand, theorising practises the consequence of open ontology, i.e. formulation of open concepts which are partially defined by the management practice (experience is of an epistemological value as it provides theoretical constructs with their final shape).

The third duality manifests itself in the praxeological aspect, when the instrumental impact on the organisation meets with the organisation being interpreted as the context of an unintentional action. In their work, practitioners may apply their knowledge instrumentally, considering it a tool to improve organisational effectiveness. However, one should not ignore the fact that circumstances, events, time, history and subjective preferences matter. Poetic praxeology perceives a practitioner as the creative subject of the action, pursuing proactive behaviours, changing her or his motivation, situated in the organisational context and in time.

2.3. Theorising styles, or argumentation methods

Cornelissen distinguishes three styles of theorising, constituting specific ways of argumentation (Cornelissen, 2017, p. 1-9). The first of them focuses on a set of claims, where the aim is to formulate an idea in the form of a set of claims linking the cause to the effect. One also needs to ensure that the claims are not too narrow in their scope, and that they do not only summarise the current literature on the subject, but they are also sufficiently detailed from the causality perspective. The second style is theorising oriented at developing a process model, entailing a narrative regarding a series of interrelated management or organisational processes. The whole thing is to result in the development of a process model characterising a set of mechanisms explaining specific events and results, and describing the dynamics of those mechanisms. The third style consists in the development of a theoretical typology which links different aspects in a manner casting more light on new constructs and new causal relationships. The point is to explain the complex nature of numerous concepts through incorporating them into consistent sets creating configurations reflecting the types distinguished.

2.4. Theory building as a scientific narrative

There has recently been a systematic review of the paths leading to the progress of knowledge in the field of management science through theory building (Shepherd, Suddaby, 2017, p. 59-86). It resulted in an integration of numerous theorising tools which were grouped into five key elements: a conflict, a construct, a theorising perspective selection, a sequence of events, and a plot. The entirety is set within an approach referred to as pragmatic-empirical theorising which uses the results of quantitative empirical research to stimulate theorising as a part of the scientific research process.

The first component refers to the narrative conflict (anomaly, tension, collision) as an incentive to theorise. Theorising begins with observing a pattern and moving forward to develop more reliable explanations of it. Secondly, initiating theorising through discovering, or generating a conflict – a paradox, a problem, a challenge – a theorist begins to formulate a research idea, expressed as a simple construct at first. The act of naming the key construct at the onset of the process is a critical step, even when the phenomenon itself is still uncertain somehow. The third area of theory building is the specification of the background that may take various forms, through the selection of the right theorising perspective: (a) a shift in ontology; (b) a shift in the manner of conceptualisation carried out by the theorist with respect to the nature of the phenomenon, resulting in a new perspective, (c) which typically requires a relevant shift in epistemology; (d) a change of the level of theory complexity; (e) transition back and forth between empirical data and theory, selection of levels. Another field of the theory building narrative involves allowing for time through the specification of the sequence of events, interpreted as the order in which events occur. Time should be considered from different perspectives, such as time experienced, time characterised as periods of stability and change, time studied with respect to the rate, extent and pattern of change (e.g. frequency, rhythm and cycles), time studied with respect to relations occurring between the past, the present and the future, and interrelations between constructs over time, expressed in mutual causality (e.g. positive or negative spirals). The last area of theory building narratives is the plot that maintains the versatility and the consistency of the argumentation.

2.5. Cooperation of theorists and practitioners

Although the central mission of management science is to contribute to management practice effectiveness, the existence, the scope and the increase of the management science theory-practice gap, in particular the absence of the right links between them, continue to be the greatest ones that researchers face (Bansal, Bertels, Ewart, MacConnachie, and O'Brien, 2012, p. 73-92; Kieser, Nicolai, and Seidl, 2015, p. 143-233). Therefore, attempts aimed at modelling the gap deserve utmost recognition. Among them, particularly noteworthy is the concept covering the sources of and potential solutions to the theory-practice gap, reflected in mutually complementary models of knowledge creation and knowledge transfer (Banks,

Pollack, Bochantin, Kirkman, Whelpley, and O'Boyle, 2016, p. 2205-2231). The problem is that knowledge does not only need to be created in the right way, but it also needs to be communicated adequately. Lack of good communication between theorists and practitioners of management science prevents knowledge transfer in a manner contributing to the creation of value.

3. Specific nature of organisational politics

Without dwelving into the understanding of the nature of organisational politics, the authors adopted an organisational politics definition based on the concept of providing a sense as an important strategic process. Such understanding of organisational politics puts an emphasis on the strategic processes of creating, reinforcing, modifying and abandoning shared meanings (Kulikowska-Pawlak, 2018). Politics is an essential everyday element of the organisational life and an important prerequisite for a more comprehensive documentation of the behavioural strategy, the activity of the organisation members, and the limitations of purely economic decision-making models (Hu, He, Blettner, and Bettis, 2017, p. 1435-1454). So comprehended organisational politics has its specifics that are reflected in five discriminants. The first characteristic feature is the low visibility to persons who are not involved in politics, as intentions and political behaviour itself are extensively vague and full of emotions. This is accompanied by the organisation members' incomplete understanding of the dynamics in which they are, in particular of the incompletely recognised rules of the games far from the logic of instrumental rationality.

The emergence of the second discriminant of organisational politics should be attributed to the complexity originating from a variety of individual, team or organisational interests creating a complex network of relationships. One cannot ignore the fact that looking at the organisation through the prism of coalitions joining tender proceedings, negotiating, seeking compromise, striving to gain a dominant position complexifies the whole picture. However, if the entire process is function-oriented, it may be a far-reaching, hard-to-follow source of competitive advantage, especially in uncertainty, hypercompetition and volatile environment.

If one allows for the adopted organisational politics definition, they will know that providing a sense, inclusive of setting the environment (context), cannot be overestimated. Therefore, the third discriminant of the process studied is the important role of the context (time in which political behaviours are pursued, organisation's current history, size and age, dynamism and hostility of the environment, or the strength of the organisational situation) which determines the significance and the content of politics in given situations. One thing is certain – organisational behaviours involving a large dose of politics interact with unique circumstances.

The three, currently distinguished discriminants of organisational politics need to be complemented with the fourth one, namely polymorphism. It is easy to imagine we are dealing with overlapping social, cultural, strategic, managerial, leadership and institutional aspects. Indeed, rationality eventually occurs along irrationality and arationality, and everything is based on affective, cognitive and behavioural microfoundations (Bratnicki, 2014, p. 109-127).

The fifth and last discriminant is the dynamics of power, ensuring the uniqueness of the ongoing process. Contrary to what may be predicted through the application of instrumental rationality (for instance bureaucratic rationality), purely substantive rationales do not always prevail within the organisation in the organisational politics process. This is partly so because organisation members tend to increase and use their power to influence. A rich repertoire of the tactics applied, and a wide range of the sources of power used are of substantial importance. All that results in the entire organisation turning into a highly dynamic entirety. In conclusion, the authors illustrated five attributes which enable a relatively precise description of the nature of organisational politics. Such a specification is a good starting point to discuss the specific theoretical framework of the process in a more detailed manner, which has been done further on.

4. Recommendations for organisational politics theory building

Current deliberations regarding the contemporary view of theory building in management science should be summarised with respect to the organisational politics theory building. Although the currently discussed literature indicates a wide range of scientific concepts and tools, it is still not a set of features specifying whether something is an element of the theoretical foundation characteristic of organisational politics or not. Given the foregoing, the authors identified a relevant framework covering five rules, namely cooperation of academics and managers, requisite complexity, contextualisation, versatility, and process perspective.

Discussing the first component of the organisational politics theoretical foundations, it is worth emphasising that in this case we are dealing with a theory regarding an organisational phenomenon, a case extremely difficult to observe from the outside due to the fact that mainly managers applying those political practices are familiar with them. Consequently, practitioners typically have a narrow picture of the organisational situations in which they are involved. Above all, it is worth noting that the cooperation of academics and managers is the primary idea underlying the organisational politics theory building. Theorists' belief of their superiority cannot be accepted, although such a positive distinction is otherwise a natural process. Thus, acceleration of the theoretical advancement regarding organisational politics requires an ongoing effort towards the integration of the scientific discourse and the managerial discourse.

Another important issue is the need to build theory at the level of complexity that corresponds to the level of complexity of organisational politics. Management science traditionally perceives theory building through the prism of mechanical philosophy. Emphasis on complexity is only a matter of recent years in which complexity became central to organisations and those managing them. In organisational reality, stability alternates with changes, repeatability alternates with creativity, an organisation member alternates with context in which they are situated, cognition alternates with affection, and target-oriented organisational behaviour alternates with measure-oriented behavior (Sonenshein, 2016, p. 739-758). Consequently, organisational politics theory building needs to be aligned with the resulting complexity by allowing for breakdowns, surprises and breakthroughs. Moreover, one needs to reasonably balance the complexity and the simplicity of the theory built (Bratnicki, 2004, p. 17-23).

Given the richness of the world of organisational politics, one should not ignore the context, uniqueness, process, time and, last but not least, the tension between the everyday, practical experience of the organisation and its scholaristic reflection in scientific rationality. This leads to the next component of the theoretical framework of qualification, namely contextualisation. Management science in general, and organisational politics science in particular, causal relationships are always located in time, and they depend on the situation. At the same time, there is often a dependence on the current path of the organisation's development and the nature of organisational learning. Similarly, facts should be linked to values. Therefore, ethics should be part of scientific models, in particular those referring to organisational politics. One should also mention organisational politics contextualisation, advancing due to the incorporation of various mediators and moderators in the theories being created.

The fourth principle, versatility, has two aspects, that of methodological pluralism, and that of theory building activity completeness. As already mentioned, the methodological pluralism postulate provides some important guidance on the road to the organisational politics theory. It is important that further research perspectives should be treated as a complement to the picture of the phenomenon studied. Naturally, this means complicating the organisational politics theory. However, this is the only way in which we can explain the whole complexity of the organisational politics process in question and ensure that its picture is complete.

Reliable organisational politics theory building also requires versatility of the research instruments applied. A whole range of useful tools comprises various theory building activities and strategies which help understand, predict and control organisational politics. The general direction of action is to link the perception of the organisational politics reality to relevant theoretical constructs.

Organisational politics science advancements need to be ongoing and iterative. The logic of building a relevant theory has the nature of a five-element narrative in which a specific set of theorising tools may be used in each of the elements. Adoption of the right theorising perspective, emphasising relationality, timeliness, situationality and openness to interpretation,

cannot be overestimated. In this case, focus needs to be shifted from politics within the organisational to the organisational politics process.

Given the foregoing, orientation at developing an organisational politics process model appears to be the most relevant style of theorising. Such an approach to theory building entails a narrative regarding a series of interrelated processes constituting organisational politics. The final result is to be a specification of a set of mechanisms explaining the dynamics of organisational politics, resulting in better understanding of conceptual interrelations in the continually improved model of the process.

The fifth rule, that of a process perspective, supplements the briefly discussed four principles. A model bridging the gap between theory and data, and setting the direction of research methods and statistical analyses, is a critical element of a research project. Models serve as tools of empirical cognition and organisational politics learning. Management science deals with two types of them: the variance model, and the process model (Payne, Pearson, and Carr, 2017, p. 11-18). As far as the variance model is dedicated to the questions about the antecedencies and consequences of organisational politics, the process model provides an answer to how organisational politics changes over time. Although the foregoing models complement each other, the process model appears to be more useful in discussing organisational politics. In particular, it makes it possible to explain sequences of events constituting organisational politics and leading to the organisational effectiveness of an enterprise.

5. Conclusion

The main purpose of this study was to present the contemporary approach to theory building in management science as a basis for the development of a set of recommendations for researchers studying organisational politics. The current literature describes a wide range of activities aimed at theory building in the field of organisation and management. A significant part of it has been published only recently, suggesting that until recently some important aspects had not been covered, which thus contributed to the emergence of significant research gaps in our understanding of theory building. The review of the most recent approaches to theorising enabled identification of five complementary ways of thinking. The reasoning provided valid arguments making it possible to claim that the characteristic components of the contemporary approach to theory building may be used as important theoretical foundations of organisational politics researching. However, despite the noteworthy advancements, scientists researching into organisational politics have failed to fully capitalise on the fact.

The fact that organisations face ongoing challenges regarding improvement of their effectiveness in order for them to survive and develop in the turbulent and volatile environment

continues to be the main attribute of the organisation. That is the reason for which over the last years there has emerged plenty of literature promoting new theory building concepts that allow for the current nature of organisational phenomena. Based on the theoretical contribution evaluation criteria, the authors focused on the five concepts of theory building in management science covering the main research areas. Firstly, the constrained comprehending researching indicates a need to implement eight theory building activities oriented at the alignment of the organisational reality perception and theoretical constructs so that an organisation and management theorist is able to benefit from the perspective of the correctness of the theory being built. Secondly, the conjunctive theorising concepts sheds light on the ontological, epistemological and praxeological dualities, and it emphasises both the role of integrating those three contradictions together, and the need to integrate them. The theorising styles approach induces reflection and selection from the three argumentation strategies: claim development, process modelling, and typology. Fourth of all, the pragmatic-empirical approach characterises theory building as a scientific narrative around a conflict motivating the theorist to act, a construct, a theoretical perspective selection, a sequence of events, and a plot. In particular, the concept discussed overviews and integrates the key scientific instruments which may be used by management science researchers. The last is the approach focused on the gap between the management's theory and practice. Accomplishments in that area deepen our knowledge of the fundamental sources of the gap between theory and practice which need to be counteracted so as to arrive at effective cooperation: information asymmetry, purpose inconsistency, and poor communication.

The authors believe that the outlined most important elements of the contemporary approach to theory building in management science may help understand their implications for the merits of the organisational politics theorising. What is more, the overview of the primary theory building concepts suggests that it is essential to go beyond assumption or speculation based on the traditional perspective. It is but the more modern approach that results in better organisational politics theory building as it facilitates the testing and possible expanding of the existing theoretical framework.

Indeed, there are valid reasons for assuming that the current approaches to theory building in management science may well be applied to theory building in organisational politics. The matter is very important; despite the fairly well recognised, significant impact of organisational politics on organisational effectiveness (Kulikowska-Pawlak, 2018), the process itself has not been sufficiently studied, and one of the reasons for it was the absence of satisfactory theoretical progress. Simply speaking, according to the authors' knowledge, specification of the theoretical foundations of organisational politics has not enjoyed any great interest on the part of scientists so far. Unfortunately, we know much less than we should about the matter.

Allowing for both the results of the overview of the contemporary approaches to theory building in management science and the foregoing considerations, five metatheoretical

principles matching the specifics of organisational politics were formulated. The pentagon of methodological rules covers: cooperation of academics and managers, requisite complexity, contextualisation, versatility, and process perspective. So developed theoretical foundations provide organisational politics researchers with the ability to carefully extend the theoretical and the practical contribution resulting from their research. In other words, the proposed series of recommendations for organisational politics theory building makes it possible to expand the methodological base of the scientific research carried out, and it is a good starting point to undertake work aimed at extending the list of methodological rules for organisational politics theory building. In general, the discussion held results in several new implications for the theory building practice in the field of organisational politics. Striving to ensure the correctness of the manner of procedure, one should refer to a short checklist. Have conditions for the cooperation of academics and managers been provided? Is the level of complexity of the theory being built sufficient to reflect the level of complexity of the organisational politics process? Does the detailedness of the context considered enable correct reflection of the organisational politics conditions? Does the organisational politics theory building process include methodological pluralism? Has a full repertoire of theory building activities been used? Has the organisational politics theory building been process-oriented?

Although this study represents but a step towards a more insightful study of the theoretical foundations of organisational politics, it does indicate several possibilities regarding future research. First of all, it would be valuable to determine sometimes subtle, but always critical similarities and differences between various concepts, followed by the identification of a significant to develop our theory building understanding with reference to an important yet hardly discussed theoretical foundation of organisational politics. It is to overcome unnecessary barriers originating from the outdated metamethodological rules without allowing for the current beliefs and accomplishments.

Secondly, not only theoretical foundations but also the ways in which empirical studies are carried out and the nature of the statistical analyses carried out determine the quality of scientific research (Osborne, 2008). This reminds of the need to attribute individual empirical research methods to metatheoretical rules in organisational politics. The process perspective, for example. According to it, longitudinal studies are the most useful. In general, aligning a project and empirical research performance with organisational politics theoretical foundations is so fraught with outcomes and consequences that it provides an opportunity to develop a more complete approach, and it is a significant step on the way towards it.

Third of all, it is obvious that finding reliable instruments is the key to the proposed approach, which is difficult if one allows for the wide range of available research methods and techniques. However, it needs to be noted that one should apply them to organisational politics in a reasonable manner. Without contesting their substantive value, one needs to remember the time and other costs of use of each of those tools. In other words, a scientific activity analysis may be enriched as a result of incorporation of the problem of economisation. Despite its

relevance, the problem has hardly aroused the interest of management scientists. Simply speaking, it is a promising area of future research.

Last but not least, creation, not forecasting, ensures true validation of the practical applicability of a theory (Kaplan, 1998, p. 89). That is when abductive reasoning plays a pivotal role. Conventional hypothesis generation and learning, although important to theory building, should be more extensively complemented by abductive reasoning which provides the most likely explanations to a specific set of facts. Those reliable explanations may be further developed, and then tested in further research (Bamberger, 2017, p. 235-238). This form of inference enables best identification of surprising organisational phenomena. The point is that neither induction nor deduction is a generated premise of something truly new, as both ways of searching for the truth depend on the past (Paavola, 2004, p. 267-283). Therefore, hypothetical explanations do not need to be confirmed in empirical studies so much as they need to be confirmed in a specific organisational activity.

The content of this article sheds more light on theory building. The authors also noted possible use of the results obtained in the context of political behaviours, demonstrating how the contemporary approach to theorising can be used by organisational politics researchers. As a final remark, the authors wish to express their confidence that the foregoing deliberations constitute a useful supplement to the current literature on the development of organisational politics theoretical foundations, in particular in that they provide a better perspective on how to build such a theory in a new way.

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OWNERSHIP SUCCESSION PLAINNING. STUDY OF AGRICULTURAL FARMS IN SILESIAN VOIVODEOSHIP

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Abstract: The problem of succession has been more and more frequent in investigations concerning the future of agricultural farms in Poland. The reducing number of inhabitants, ageing society and a declining number of new births are only some of the factors which highlight this problem. The focus of the study was on the agricultural farms in the case of accidental events such as death or serious illness that makes it impossible for the owner to make representations and sign on behalf of the business solely. These problems are critical from the standpoint of ensuring the continuous operation of the farm. The study was carried out with using a questionnaire and analysis of the independence of the Chi-square test (χ^2). Most of the farmers studied think about what would happen in the case of their permanent loss of ability to manage the farm, and especially in the case of their sudden death. The opportunities for presence of other negative events such as serious illnesses seem to be neglected by those who manage agricultural farms. This is likely to be due to the psychological reluctance to think and prepare for such difficult scenarios. The study also demonstrated the lack of correlation between the size of agricultural farm and securing farmers against the accidental events. A moderate relationship was observed only at the level of general planning of the future of the agricultural farm. One of the popular forms among the owners of agricultural farms was establishment of a kind of *mortis causa* plenipotentiary.

Keywords: agricultural farm, succession, management, accidental event, plenipotentiary.

1. Introduction

The popularity of business conducted individually by a private individual forces the necessity of undertaking succession problems. The death of an entrepreneur who runs a sole proprietorship may provide not only the psychological drama of the family and relatives, but may also bring serious consequences to them as potential heirs. This problem applies especially to agricultural holdings, in the case of which the occurrence of an incidental event does not allow for uninterrupted continuation of operations. The gap identified in this area could fill the

establishment of the temporary representative's institution (so-called "proxy mortis causa"), who could manage the company for some time as the previous entrepreneur did. The purpose of the study is evaluation of the situation of the agricultural farms in the case of the accidental events (e.g. death or sudden illness that makes it impossible to the owner to run the agricultural business) and the related legal and economic consequences to the farm.

The agricultural activities understood as business activities was also mentioned in the Act of 30 March 2001 on agricultural market surveys (Journal of Laws, 2015). The definition of the agricultural entrepreneur is also contained in this document, considered as an entrepreneur defined in the Act of 19 November 1999: the Law on Business Activities (Journal of Laws, 1999) and the natural or legal persons who conduct the agricultural production activities in terms of agricultural farming and animal farming, horticulture, market gardening, forestry and inland fishing[1].

However, it seems legitimate to state that the agricultural farm is a form of agricultural business activity (Goraj, 2005). Agricultural activities are characterized by a specific nature, which is manifested by, first and foremost, casual maintaining the households, with its main goal being to provide the household members with resources needed for their everyday existence. In order to achieve this aim, it is necessary to be involved in agricultural activity in the farm that is economically efficient, which is required in any other type of business activities. With respect to the economic efficiency of the agricultural activities, the farmers should take into account such elements as planning of activities, using and adjustment to the market rules, using the principles of marketing and control of the effects of activities while using at least basic principles of economic calculation. Market success in agricultural activity often depends on ecological awareness of farmers and the scope of ecological initiatives they take (Jelonek, and Seroka-Stolka, 2013).

This comparison of the most important characteristics of the general business activities in the specific agricultural activities within the agricultural farm that produces goods for the market indicates that agricultural farms in their most common form can be regarded as an enterprise, and some of their aspects can be analysed by analogy to non-agricultural enterprises (Corsi, 2004).

Today, development of SMEs is an appropriate strategy for development of agricultural section, paving the way for overcoming challenges such as stability, benefit, and efficiency. The Corporate Entrepreneurship (CE) of firms and enterprises is the subject of current research in the fields of management and business. However, analyses on this subject in agricultural firms are lacking (Ahmadpour Daryani, and Karimi, 2017).

One of the most important problem faced by people who run agricultural farms is the problem of further existence of the farm in the case of agricultural activity becoming difficult or impossible for the owner (Blanc, and Perrier-Cornet, 1993). The process of gradual transfer

[1] Art. 2, Section 3 of the Act of 30 March 2001 on agricultural market survey (i.e. Journal of Laws 2015, Pos. 1160).

of the managerial functions and property of the farm to the successor is termed agricultural farm succession (Dudek, 2009). Farm succession, which is of interdisciplinary character, has a critical effect on a number of aspects of management in the agriculture, country, local and public finances, health care and social assistance. The problem also affects new unexplained areas, such as "succession ladder" i.e. stages and order of succession of the managerial authority (Klank, 2006).

The principal problems concerning the problems of succession (Dudek, 2009):

- maintaining and development of the economic value of the agricultural farm,
- ensuring the stability of rural family.

The problem of succession concerns many developed countries of the EU. Therefore the EU's commitment to these problems is noticeable. The European Union is trying to stop a reduction in the number of farm takeovers or the transfer of farms to successors. On the one hand, this involves support for young farmers to take over farms, carried out in the form of one-time, non-repayable financial assistance for an easier takeover and a structural adaptation of the farm after takeover; on the other hand, this involves the support for the early retirement of farmers, which is carried out in the form of annual annuities to elderly farmers that stop engaging in the profit-oriented agricultural and forestry activities on the farm as a result of transferring the farm to a successor (Kerbler , 2012).

According to the researchers who have dealt with the problems of succession of agricultural farms, most of them are transferred within the family (Łukasik, 2013). This position of those who transfer agricultural farms seems to be justified. The succession, especially the one occurring when the previous owner is alive, can be adequately prepared to meet the adopted goals (Fennell, 1981). It is often emphasized in the literature that succession of the family enterprise such as agricultural farms is a long and complex process which involves the choice of the successor, evaluation of his or her competencies, abilities and knowledge and opportunities for development of these characteristics with the course of time and the willingness to take over the family business by the successors (Kempa, 2015).

Planning the succession should take into consideration the fact that if the succession is performed improperly, the family business may go bankrupt (Mann, 2007). The most frequent causes of the short life of family businesses include (Lewandowska, et al., 2012):

- poor planning of succession and the resulting inability to pay the inheritance tax by the successor,
- failure to transfer the business to the successor at a right moment,
- inability to choose the successor (in the case of several potential candidates),
- no interest of the potential successor in family business or a conflict between the candidates and inability to reach an agreement.

The often observed problem is late starting the succession process which leads to several-times higher risk of bankruptcy or losing its family character. This results from the internal reluctance of the previous owner to transfer the company to the other person but it can also result from the lack of knowledge or dealing with other problems occurring in current enterprise activity (Czekaj, 2016). Here, we touch the important problem of knowledge transfer to agriculture (Ataei, and Zamani, 2015), not only related to the subject of activity but also to the legal issues of the functioning of agricultural enterprises. The effects of business succession, including the agricultural farms as indicated above, significantly depend on who will take over the managerial function (Stiglbauer, et al., 2004) connected with decisions on the property, directions of development and production.

From this standpoint, it is more beneficial to transfer the business when the owner is still alive rather than start the succession procedures, which are often connected with conflicts and do not guarantee the solutions which are the best for functioning of the farm and reaching the assumed goals (Miller, et al., 2003).

2. Succession following the accidental events – literature overview

Although the literature has broadly discussed the problems of the succession problems in agricultural farms, the significant gap is the problem of overtaking of the agricultural business in the case of sudden events that prevent the manager of the farm from performing the managerial functions. The accidental events are understood to mean a sudden death of the owner or the illness that makes it impossible for them to make representations and sign on behalf of the business solely.

Current institutional solutions do not contain global procedures that allow for maintaining the continuity of agricultural farm activity until the farm is taken over by the successor. These problems are also not regulated by the Common Agricultural Policy (Offutt, 2003).

The major problems can be generated due to:

- continuation of long-term contracts, such as leasing agreements, contract of supplies of agricultural products, loans,
- settlements of direct subsidies paid by the Agency for Restructuring and Modernization of Agriculture,
- settlement of public receivables, e.g. tax, value-added tax, etc.,
- continuation of labour relations for the employees employed in the farm,
- repayment of current payments, with particular focus on those using the banking account of the farm.

Therefore, it can be found that the legal environment of the agricultural farm should be developed so that it has legal instruments available to allow for ensuring economic security of the farm for the period of succession due to the accidental event until the farm is taken over by legal successors or a nestor who recovered (after an illness, accident, etc.) (Dziadkiewicz, 2009).

The examples of institutional solutions that protect the continuity of agricultural farm operations include:

- *mortis causa* plenipotentiary i.e. the person who, based on the proxy to temporarily manage agricultural farm and run it until it is transferred to the successor,
- temporary manager appointed by the court with powers similar to the plenipotentiary.

Both *mortis causa* plenipotentiary and temporary manager would be able to use the nestor's business, would have rights to repay public and private receivables from the funds deposited on the deceased owner's account but only if due to the uncompleted inheritance procedures, there is lack of the people who are obliged to repay them.

It also seems justifiable that allowing the plenipotentiary to conclude, execute and dissolve the contracts, including the contracts concluded before the death of the farm owner, and represent the successor in administrative procedure and court and administration procedures.

The function of the *mortis causa* plenipotentiary would, similar to the family businesses, result in non-expiration of the administrative decisions issued with respect to the deceased owner of the agricultural farm (in addition to the decisions relating to their close personal attributes) and opportunities of exercising them by the plenipotentiary and then by the successors.

Furthermore, the plenipotentiary would act as an employer through continuation of the current labour relations. This would lead to removing the consequences of the expiry of labour relations as a result of the death of the employer and the necessity of repayment of compensations due to the periods of notice in the employment contracts.

3. The own conduction of research

The study was conducted among 56 agricultural farms (with surface area of over 5ha) in the area of the Silesian Voivodeship in February and March 2017. The research aim was evaluation of the situation of the agricultural farms in the case of the accidental events (e.g. death or sudden illness that makes it impossible to the owner to run the agricultural business) and the related legal and economic consequences to the farm. A detailed analysis was perform to evaluate the relationships between the size of the agricultural farm and the distinguished four variables defining the character and the need for succession in the case of incidental events.

To the study were selected farms of more than 5 hectares. The examination was conducted using the survey questionnaire composed of two parts. The first part was comprised of 8 questions aimed at characterization of the study group. The second part contained 10 questions concerning the problems of succession in case of an accidental event.

The chi-squared test for independence (χ^2) was used to examine the independence of X and Y characteristics, which in this case are of non-measurable (qualitative character, with the significance coefficient set at $\alpha = 0.05$.

$$\chi^2 = \sum_{i=1}^{k} \sum_{j=1}^{r} \frac{(n_{ij} - \hat{n}_{ij})^2}{\hat{n}_{ij}} \quad (1)$$

where:

n_{ij} – the observed frequency for the group,

$\hat{n}_{ij}$ – is expected frequency for the group,

k – number of column of the independence table,

r – number of the table of independence.

The above method allows for verification of the zero hypothesis (H_0), according to which the variables are independent, and the alternative hypothesis (H_1), which points to the presence of the relationship between the analysed characteristics. Inequality

$$\chi^2 \geq \chi^2_{\alpha;(r-1)(k-1)} \quad (2)$$

represents the basis for rejection of the zero hypothesis in favour of the alternative hypothesis.

The relationship was analysed between the two variables X and Y, where X denotes the farm size and the variable Y is, respectively:

1) planning of the future of the agricultural farm by the owner in case of the constant loss of abilities to manage,
2) choice of the successor or plenipotentiary in case of the death or illness of the owner that makes it impossible for the owner to make representations and sign on behalf of the business solely,
3) perceiving the need for creation of institutional solutions that allow for management of the agricultural farm for the period of the accidental event,
4) appointment of the *mortis causa* plenipotentiary to ensure the continuity of the farm operations who would temporarily run the farm businesses until it is taken over by the successor in the case of the owner death.

Furthermore, in the situations 1) and 2), the Yates continuity correction was used due to the value of the expected number of < 5.

V-Cramer statistics was used to examine the strength of the relationship:

$$V = \sqrt{\frac{\chi^2}{n * \min(r-1, k-1)}} \quad (3)$$

where:
V – V-Cramer coefficient between the two variables,
χ^2 – the results of the chi-square test for pairs of variables,
n – number of observations,
k – number of columns from the independence table,
r – number of rows in the independence table,
min(r-1, k-1) – minimal value from two (r-1) or (k-1).

The Cramer adopts the values:

$$0 \leq V \leq 1 \tag{4}$$

When the characteristics are independent (lack of correlations), the coefficients adopts the values similar to zero. For the entirely dependent characteristics, the coefficients equals one.

4. Results and discussion

Due to the size of the agricultural farms, the most of them were those with *the surface area from 10 to 15h* (52%), followed by 34% of the farms *with the surface area from 5 to 9h* and 14% *over 15h*. The period of running the agricultural farms was for the most of indications of *over 10 years* (54%), followed by *from 5 to 10 years* (39%) and *up to 5 years* (7%). The types of business activities in the farms (three options could be chosen) indicated by the respondents were mainly *agricultural crops* (93%), followed by *animal farming* (32%) and *others* e.g. activity to support agriculture (16%). Only 16% of them *run businesses as sole traders* while nearly the same number *employed employees* in their farms. Over 55% of the farms had *long-term contracts concluded*, for example leasing and loan contracts. The substantial majority of the farms (98%) *received direct subsidies.*

Furthermore, the respondents were asked about more detailed information concerning the problems of succession in their agricultural farms. The results showed that 85% of the farm managers expect the change in terms of the property of the farm so that in case of their death the farm can continue the operations started many years ago. 13% of the respondents did not think about such events and merely 2% did not predict the change in the ownership at all (see Fig. 1).

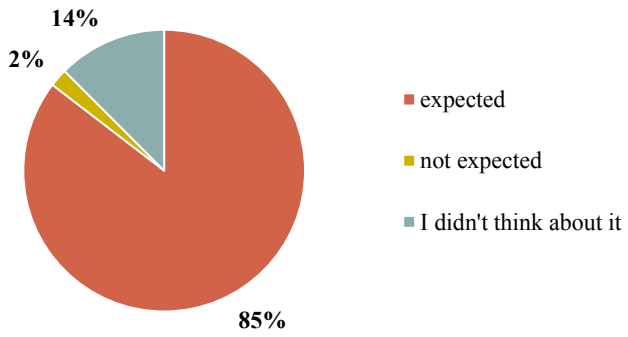

Figure 1. Planned changes in property of the agricultural farms

When asked about taking over the farm by the successors, 82% of the respondents indicated that they will do it through gift procedure or sales before the death, 16% of them chose inheriting by writing a will and 2% predicted legal succession (see Fig. 2).

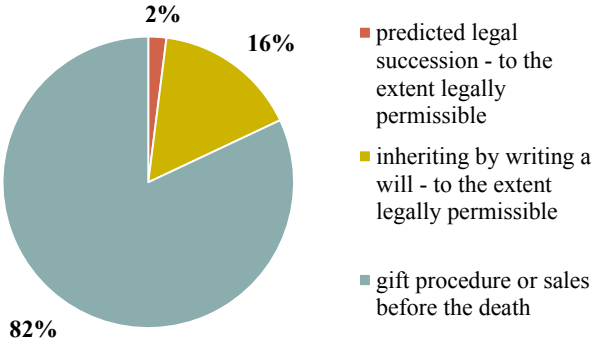

Figure 2. Predicted options of taking over the agricultural farm by successors

The worrying fact is lack of knowledge of the mechanisms of taking direct subsidies in the case of accidental events in agricultural farms, e.g. the death of the manager. 77% respondents were not familiar with the consequences connected with this situation, which can lead to serious legal and managerial problems in conducting the agricultural farm. Only 23% had a knowledge that concerned the above problem (Fig. 3).

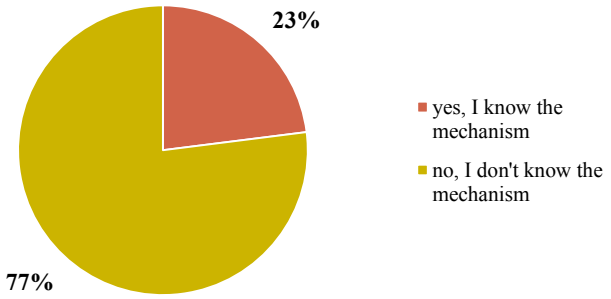

Figure 3. Knowledge of the mechanism of direct subsidies in case of accidental events

Due to the business activities run in the form of the agricultural farm and other managerial issues, it is critical to authorize the third party persons (from the farm) to manage the resources in the banking account of the farm, which allows for repayment of e.g. current receivables connected with running the business in the case of the accidental event. In 91% of the agricultural farms, this solution was taken into account.

When asked about the acceptance of establishment of the institutional opportunities for appointment of the manager for the agricultural farm by the court for the period of the accidental event, the respondents were not that unanimous. Over half of them (57%) indicated this possibility if the competencies of the manager are limited whereas 43% were unwilling to use this solution.

In order to maintain the continuity of agricultural farm operations, also in the case of the accidental event, there is an option of the appointment of the *mortis causa* plenipotentiary who would temporarily run the farm until the successor takes over the business. This opportunity would be used by slightly more than the half of the farmers (52%) whereas 29% were absolutely against this solution and 19% of them indicated the answer "I don't know", which leads to the presumption of their low level of knowledge about the function of a plenipotentiary in this transitional period (Fig. 4).

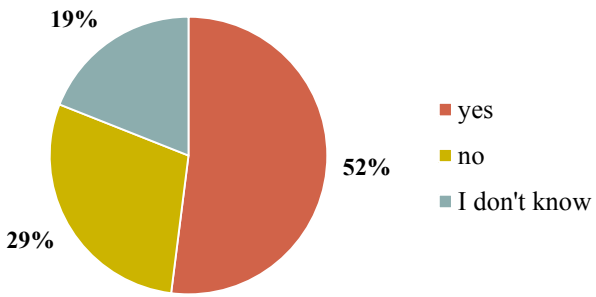

Figure 4. Appointment of the mortis causa plenipotentiary who would temporarily manage the farm until the successor takes over the property

It can be expected that the bigger the farm the higher responsibility of the owner and, consequently, greater foresight and necessity to secure the property. Therefore, the present study verified the presumption that the size of the farm managed by the farmer determines his or her knowledge about the farm succession, particularly in terms of securing the continuity in the farm functioning in case of the accidental event. The verification concerned the relationship between the agricultural farm size (variable X) and the following characteristics (variable Y):

1) planning of the future of the agricultural farm by the owner in case of the constant loss of abilities to manage,
2) choice of the successor or plenipotentiary in case of the death or illness of the owner that makes it impossible for the owner to make representations and sign on behalf of the business solely,
3) perceiving the need for creation of institutional solutions that allow for management of the agricultural farm for the period of the accidental event,
4) appointment of the *mortis causa* plenipotentiary to ensure the continuity of the farm operations who would temporarily run the farm businesses until it is taken over by the successor in the case of the owner death.

The test statistic computed in individual situations adopted the values:

1) $\chi^2 = 6.57$; $\chi^2_{0.05;\,1x1} = 3.8415$,
2) $\chi^2 = 0.43$; $\chi^2_{0.05;\,1x1} = 3.8415$,
3) $\chi^2 = 0.07$; $\chi^2_{0.05;\,1x1} = 3.8415$,
4) $\chi^2 = 2.84$; $\chi^2_{0.05;\,1x1} = 3.8415$.

The probability resulting from the test χ^2 in cases 2, 3 and 4 does not allow for the rejection of H_0 and leads to the conclusion that there is a relationship between the characteristics studied. Only in the case 1), the result of the test χ^2 represents the basis for rejection of the H_0 in favour of H_1, which indicates the presence of the relationship between the variables studied. For these two variables, i.e. X – size of the agricultural farm and Y - planning of the future by the owner of the agricultural farm in case of the permanent loss of ability to manage the farm, the strength of the relationship was calculated. The value of Cramer coefficient (V) (0.3425) points to the moderate relationship between the characteristics studied.

5. Conclusions

The study showed that most farmers thought about the future of their agricultural farms in case of permanent loss of ability to manage the farm and took measures to prepare for such events. These were in particular changes in terms of ownership in the farm in order to continue the activity in the case of the death of the owner. The substantial majority of the owners planned

to indicate the successor through gift, sales or preparation of the will. Another popular method to ensure the continuity of the agricultural farm in case of death or serious illness of the owner is to authorize the third parties. Nearly half of the farmers studied saw the candidates for successors among the closest relatives, however, provided they acquire additional qualifications.

Over half of the respondents perceive the need for creation of institutional solutions that allow for management of the agricultural farm on the duration of the accidental event. However, most of them are careful about appointment of the manager for the agricultural farm by the court for the duration of the accidental event. They accepted this solution but under condition of limitation of the manager's competencies. The most popular form among the owners of agricultural farms was establishment of the institutional opportunities for appointment of a *mortis causa* plenipotentiary.

It would seem that the size of the agricultural farm determines the owner's sense of responsibility, which means that the bigger the farm the higher foresight, necessity to secure the property and the need for ensuring continuity of the agricultural farm. However, the study did not demonstrate such relationships, which means that in big agricultural farms (over 10 ha), the necessity to appoint the successor or the third party to manage the property is not much emphasized. This concerns not only the owner's death but also their serious illness that would make them unable to make representations and sign on behalf of the business solely. Only a moderate general relationship was observed, i.e. planning the future of the agricultural farm in case of the permanent loss of ability to manage the farm.

The examinations and the respondents' own observations lead to the conclusion that the people who manage agricultural farms seem not to analyse the problems of sudden negative events (such as unexpected death or serious illness that limits the ability to make representations and sign on behalf of the business solely). This is likely to be due to the psychological reluctance to think and prepare for such difficult scenarios. It was during the test that the farmers became aware that this attitude can only intensify the negative effects of accidental events through disturbing the continuity of operations in the agricultural farm that is the source of finance for the farmer's relatives.

This leads to the conclusion of the necessity of the research on succession management in agricultural farms in case of an accidental event and the necessity of the more active role of the state in creation of the institutional framework to provide efficient tools used to prevent the negative effects of such events.

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THE ORGANISATION OF THE CONTROLLING SYSTEM IN AN ENTERPRISE

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Abstract. This paper analyses the organisation of a controlling system in an enterprise, allowing for theoretical and practical aspects of the basic management function, i.e. planning. It presents original controlling tools supporting the organisation activity planning and controlling process in a detailed manner. The analysis pays particular attention to the fact that budgeting is the most frequently applied management accounting and controlling tool. Given the nature of the paper, it has been emphasised that budgeting, similarly to other tools if inappropriately used, may not bring about anticipated results; on the contrary, it may even generate losses. While emphasising the importance of controlling in the company management process, the paper also highlights the employee motivation system.

Keywords: controlling, budgeting, costs, revenues

1. Introduction

Globalisation of the world's economy is forcing entrepreneurs to change their management systems and conditions of conducting economic activities, and to transform their rigid structures into more flexible ones. The enterprise's flexibility depends not only on the adaptation to the changes in the environment, but also on the possibility of choosing different scenarios developed in an organization (Dźwigoł, 2015, p. 1).

In every enterprise, management related problems are subject to ongoing changes resulting from the network of relationships, dependencies and ongoing feedback from the environment. An enterprise wishing to be a business professional cannot act spontaneously and rely solely on its own intuition. Actual management requires an organisation to constantly develop and be present on the market for a long time, generating profits and meeting their customers' needs. That is why the management's actions should be thought out and based on solid foundations, on a detailed action plan in all the areas of operation of the organisation.

Under fierce competition, enterprises are looking for ways to improve their financial performance and find effective management tools. Undoubtedly, controlling used to form and control the financial result is one of them.

In practice, many organisations first try to control costs and find opportunities to improve their sales profitability in that area. To do so, they use a set of controlling tools, for instance budgeting, budget implementation level analysis and result reporting. In order to succeed in the performance of the tasks set out in the budgets, they need to be accepted by everyone participating in the budget implementation process. Organisation employees should identify themselves with the goals of the company and the tasks carried out. The ability to control processes in the course of their implementation needs to be maintained. Implementation of a motivation system aimed at increasing the employees' performance is an important element of the task implementation process.

In operative planning, control and management, existing capabilities (resources) are always the starting point. They include the existing production and sales programme, company provision with equipment, employees' current qualifications and the financial capital available (Vollmuth, 2000/2003, p. 14).

In practice, we can observe a need for continuous improvement of the controlling system resulting from the high volatility of the environment, the increase of competitiveness on global markets, and the high innovation in many areas of the economy.

Based on several years of practice, the paper emphasises the importance of controlling, allowing for the responsibility centres and setting transparent rules and competences of them.

2. Budgeting process organisation

According to the rules of systemic activities, the controlling system is characterised by structured solutions. It is a logical system of orderly connections of structural elements of an enterprise that take part in the activities of various functional areas in order to make the right decisions of an operational and strategic nature.

The controlling module is a company's organisational structure with a specified functioning mode that enables observance of the controlling rule, i.e. determination of the base, calculation of deviations, and deviation analysis and evaluation (Dźwigoł, 2011, p. 61).

A budget is a set of tasks to be performed in a marketing year and presented in a uniform manner. A feature of the budget is to demonstrate that the economic equilibrium which should underlie the activity of the Company is actually maintained. Flexibility is a feature of a good budget.

The planning, budgeting and plan implementation controlling process in enterprises is an ongoing process covering the following, closely interrelated elements:

- strategic planning (multi-annual plan),
- operational planning (annual plan),
- budgeting (quantification of the values planned for individual responsibility centres) (Sierpińska, 2006, p. 23).

Effective operational and strategic management depends on a well-implemented and professionally used controlling system. Individual development of a concept and embedding it in an appropriately configured IT system is a feature of contemporary enterprises. Based on years of observations, it can be stated that appropriate accounting and planning modules support the operational and strategic management process, providing instant feedback on the result forecast in real time.

Planning, which is a continuous process and does not end with the agreement on and approval of plans, their delegation for implementation to individual operational levels, as at this stage it may require an adjustment to the changing environmental conditions, is the primary function of the controlling process. The controlling system extends the scope of planning with budgeting, i.e. quantitative expression of plans and tasks with respect to short periods of time.

Most organisations develop material and financial plans based on their own experience, their own views and evaluations. Research shows there is no plan that cannot be contested (Buk, 2006, p. 9) as each of them is based on anticipated macroeconomic determinants and planned changes within the organisational unit as well as on historical data.

This paper presents the budgeting process based on the author's experience.

The plan being developed should be based on all the assumptions determining the formation of basic economic and financial assumptions available at the time of development, any changes in tax law, anticipated changes in the immediate environment of the company, and a diagnosis of other factors which might significantly affect the value of the anticipated financial result.

A list of table templates, specifications and other documents required to develop the plan is submitted to the head of the entity. If there is a need to supplement planning data and information, the Controlling and Risk Management Team provides additional documents, separately approved by the Head of the Team, to the organisational units to complete them. Tables, specifications and other documents completed by the organisational units need to be accepted in writing by one member of the Management Board of the Company at the minimum. Electronic copies of those documents need to be e-mailed to the Controlling and Risk Management Team for further processing. Following acceptance by the Management Board of the Company, the draft material and financial plan for a given year should be approved by the Supervisory Board.

Each enterprise has its own internal organisational structure in which departments and divisions are assigned specific areas of responsibility. Following accomplishment of all the planning assumptions and tasks of all the units, the plan is subject to relevant management control.

Following completion of the planning process, costs and revenues are monitored in monthly periods, after the end of each accounting month.

Strategic controlling, similarly to operative controlling, is a task of the management of the enterprise (Kowalska, 2001, p. 14). It is but the top management that should plan activities leading to solutions providing profit generation potential. However, strategic planning itself will not result in long-term profit generation, so the process itself as well as its implementation should be controlled, too. This is a classic controlling tasks arrangement, subject to that it concerns a long period of time: planning – steering – controlling.

Starting with quantitative differences that describe changes to factors affecting the profit generation potential, strategic planning is aimed at determining and shaping the level of changes to the company's strategic potential (Skowronek-Mielczarek, and Leszczyński, 2007, p. 24). Plan development in monetary units enables determination of the flow of revenues and costs in a long-term perspective which, in turn, is required to develop a strategic budget.

Heads of individual units are authorised to monitor the costs relating to the area they manage on an ongoing basis.

This paper emphasises the particular role played in the controlling system by human resources which are the greatest value of the enterprise.

Based on long-term experience, the paper shows the Controlling Sheet mechanism which serves its purpose by promptly informing where the organisation is and in which direction it is going.

In order to ensure effective methods of ongoing and prospective supervision over the shaping of adequate economic and financial relationships of the enterprise, Revenue Controllers and Cost Controllers have been appointed from among the employees.

Some members of the Sales and Marketing Team have been appointed Revenue Controllers responsible for analysing and forecasting revenues of individual divisions of the enterprise. The task of a Revenue Controller is to supervise a specific division's revenue from sale generation process by means of monthly reporting in the form of the Revenue Controller Sheet.

There are also Controllers of Costs by Type recorded within team 4, among which we can distinguish Controllers of Costs of Depreciation, Material Consumption, Fuel and Equipment, Energy, Repair Services, Transport Services, Emergency and Repair Services, Telecommunications and IT Services, Technical Inspection Services, Studies, Expert Opinions, Scientific and Research Work, Remuneration, Surcharges on Remuneration, Insurance, Training and Courses, Rents and Leases, Lump Sums for the Use of Private Cars for Business Purposes, and Official Delegations. The task of a Controller of Costs recorded

within team 4 is to supervise, analyse and forecast the level of the type of cost assigned to them by means of monthly reporting in the form of the Cost Controller Sheet.

There are also Division Cost Controllers controlling costs by type of activity recorded within team 5. Among them, we can distinguish Controllers of Costs of all the divisions of the Company; among them, within the structures of the Physical Protection Division, Controllers of Area Costs (all the mines protected), and Controllers of Department Costs and General Overheads. The task of each of the foregoing Controllers is to develop a forecast of costs in the form of a Division/Area Cost Controller Sheet as compared to the approved Plan for a given year, and to clarify significant deviations between the execution and the plan, the forecast and the plan, and the forecast and the execution.

Apart from the foregoing, there are Cost Controllers within team 6 controlling products, prepayments and accruals, and Cost Controllers within team 7 controlling other operating revenues and costs as well as financial revenues and costs.

All the revenue and cost controllers have been obligated to submit the controller sheets by the 25th day of each month to the Controlling and Risk Management Team. Controller reports should provide for the reasons for deviations, conclusions and suggestions regarding implementation of remedial measures to avoid the risks observed. Each controller is authorised to initiate and submit proposals regarding organisational and technical solutions leading to the rationalisation of the level of the costs which they supervise. The Controlling and Risk Management Team is obligated to analyse all the proposals and submit them for approval to the Management Board of the Company.

Apart from the Cost Controller Sheet and the Revenue Controller Sheet, an important role in the arrangement of the enterprise budgeting is played by the Annual Report on the activity to be managed, covering a given year and containing the following information

- subject matter and scope of business (type and scope of services provided need to be specified);
- revenues and costs incurred in a given year (revenues generated and expenses incurred in a given year as compared to the previous and the planned year need to be specified);
- main recipients of services (a list of existing and acquired customers needs to be developed);
- factors affecting the increase in sales as compared to the plan (main reasons for the increase in revenues, e.g. change of rates, or acquisition of new customers, as compared to the approved plan, need to be specified);
- factors affecting the decrease in sales as compared to the plan (main reasons for the decrease in revenues, e.g. termination of a contract/agreement, change of applicable rates, as compared to the approved plan, need to be specified);

- reasons for the increase in costs as compared to the plan (major events such as additional purchases, change of employment level, use of additional services, e.g. subcontracting, affecting the increase in costs, as compared to the approved plan, need to be specified);
- reasons for the decrease in costs as compared to the plan (events affecting the decrease in costs, e.g. lower demand for purchases of materials, equipment and third party services, reorganisation of the department employment structure, use of cost regime need to be specified);
- employment and remuneration policy pursued by a Division in a given year (employment level at the beginning and the end of a given year, and number of admissions and dismissals at the Division controlled need to be specified);
- training, refresher and additional courses (training and courses carried out, and their value need to be specified, an overall assessment of training needs to be provided);
- repairs completed and capital expenditures incurred by the Division (quantitative and substantive scope of repairs and investments at the Division need to be specified);
- overall evaluation of the result generated by the Division analysed in a given year (result needs to be evaluated as compared to the result of the previous year and the result planned for the given year, and overall economic situation of the Division needs to be evaluated);
- division development strategy for the next planned year (perspectives, intentions and Division development directives need to be specified, possible risks need to be analysed, remedial measures need to be suggested);
- evaluation of the marketing and sales policy pursued by the Division (number of prepared tender documents and successful tenders need to be specified, unsuccessful tenders need to be detailed and explained). Also, the number of customers acquired needs to be specified, and any efforts, e.g. phone conversations, e-mails, direct meetings, making offers to sell services need to be described.

The Annual Report on the activity to be managed, covering a given year, is submitted by the responsible units to the Controlling and Risk Management Team by February 18 of a given year, in paper and electronic format.

The above original tools are used to provide the Management Board with the most feasible material and financial plan being a map and a signpost for the managing body on the way to the objective set. At present, controlling teams are using planning and accounting modules which are the primary tools of the Strategic and Financial Controlling in enterprises.

In the article presented, the author aimed to prove that the module developed enables concurrent control of high costs by type incurred by the entire Company as well as the results of individual Divisions, which enables prompt response in the event of disturbing deviations from the planned values of both revenues and costs.

The tool presented also enables the forecasting and controlling of the manner of accounting for overheads, which affects possible optimisation of Division results in the event of changing micro- and macroeconomic conditions.

The controlling system is a tool to select corporate tasks and objectives, to assist accomplishment of them, to align them with the general corporate strategy, and to evaluate the level of accomplishment of the objectives set. As multiplication of the owners' capital with generated profits is the primary purpose of an enterprise in the long term, controlling as a system to accomplish the objective is a tool to control the financial result of the enterprise.

3. Summary

The article presented confirms that in order to be efficiently managed, an enterprise needs to use controlling tools. A difficult market does not only depend on consumers' financial capabilities; problems related to entering external markets require constant adaptation to change. Selection of products and services requires ongoing market observation and flexible response with the resources at hand.

In many respects, the strategic controlling system does not need to depart from the traditional model. The main differences may result from the strengths and weaknesses of the enterprise, the ability to flexibly adapt to the main contractor's policy and the market developments in the country.

The management of the enterprise need to have the right approach to their employees who, to a large extent, determine the competitive advantage. Adequate positioning of the controlling department or the controller within the organisational structure needs to be remembered as well. The higher the organisational structure level, the higher the controlling efficiency.

The above organisation of the controlling system in the management of the entity, allowing for the controlling tools and the organisation of the budgeting process, may be used within virtually any service enterprise, irrespective of its legal form or scale of operations.

An effectively functioning management information system must be focused not only on the processing, but also on the organising and prioritising of information, with the information for the system not only originating from within the organisation (financial statements, off-balance sheet data, information from various organisational units, etc.). A large portion of information of significant importance to the enterprise may originate from external sources.

The ability to promptly respond to the changing environment of the enterprise, the ongoing monitoring of the economic condition of individual divisions, identification and examination of current and potential risks related to the operations of the Company are

a measure of effectiveness of the controlling instruments implemented and used within the Company.

One of the most important factors is the correct financial management of the Company, including maintenance of the correct financial liquidity rate, diversification and increase of the number of revenue sources, ongoing supervision over the level of use of external sources of funding, use and optimisation of human resources in line with the current demand for the services provided.

Based on the analysis of the operations of the enterprise as well as on practical experience, it may be said that the functioning controlling tools fully meet the current and potential needs of the management board of the enterprise as stipulated by the management accounting principles. In the event of a potential emergency, the controlling management system used makes it possible to provide the management board of the enterprise with warnings well in advance and with respect to all the areas of its operations.

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INFLUENCE OF SPECIAL ECONOMIC ZONES ON THE INVESTMENT ACTIVITIES OF ENTERPRISES

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Abstract: The purpose of this article is to analyse special economic zones (SEZ) with regard to attracting foreign and domestic investments. The article overviews selected studies addressing the importance of SEZs in enhancing regional and local competitiveness through the investment activities of enterprises operating under the permission to conduct business activities within their territory. To achieve the adopted goal, the article primarily presents the findings of the studies carried out, using the method of analysis of: the literature of the subject, published reports and papers (secondary data from the 'Investment attractiveness of regions and subregions Polish 2016' has been used), and a descriptive method.

Keywords: investments, special economic zones, local and regional development.

1. Introduction

Local and regional development is essential in enhancing the competitiveness of regions. Competitiveness is not only the sphere of business entities, but also of municipalities. The shaping of the community development in a market economy requires that the community have a competitive potential which will ensure new and maintain the existing benefits of the market (Krawczyk, and Kokot-Stępień, 2016, p. 139-140). The development of the competitive potential of the municipality is a strategic and operational task (Popławski, 2011, p. 173-174). Enterprise development should be supported by effective local institutions initiating the development. Some of them are to assist enterprises in establishing new organisations and attracting capital for emerging enterprises. Local self-government interventions should be based on a policy of economic, institutional and infrastructural incentives for business entities. Municipalities should create operating conditions ensuring development of entrepreneurship through the establishment of new and development of the existing enterprises as well as the creation of entrepreneurial attitudes among employees and residents of the municipality (Leśniewski, 2013, p. 31-32). The key factor influencing the social potential is the human capital of enterprises, namely the employees and their knowledge, experience and

qualifications. It is important to invoke adequate forms of development activation in the region in the long term. One of the ways of revitalising the regions and improving their competitiveness is the establishment of privileges in the areas the development of which should be supported. Modern forms and tools for stimulating competitiveness in these areas include (Filipiak, Kogut, Szewczuk, and Zioło, 2015, p. 284):

1. business incubators,
2. technology parks,
3. special economic zones,
4. research and development units,
5. others – public-private partnership, structural funds, venture capital funds, Business Angels.

All of the above-mentioned forms are connected by the function they play in the economy, namely the shaping of internal competitiveness of regions with the use of economic, legal and administrative tools. The competitiveness of the region is defined as the ability to attract capital and aid as well as to maintain the existing production factors in the region.

In the article, I will raise the topic of support for regional development through special economic zones and their influence on the investments of economic entities.

2. Legal conditions of the functioning of special economic zones

Special economic zones are a relatively new tool of regional policy in Poland. They have been functioning in the Polish economic space for over twenty years. A detailed method of operation as well as legal principles, objectives and conditions of, and the procedure for the establishment of special economic zones in Poland are governed by the Act passed on the initiative of the Economic Committee of the Council of Ministers of 20 October 1994 on special economic zones (as amended). According to this Act: *a special economic zone is isolated in accordance with the provisions of the Act; it is an uninhabited part of the territory of the Republic of Poland within which economic activity may be carried out pursuant to the Act* (the Act on SEZ, 1994). A special economic zone is an administratively separate economic enclave where entrepreneurs may carry out business activity on preferential terms. Article 3 of the Act on SEZ states that the primary objective of the zones is to accelerate the economic development of selected areas of the country, in particular by implementing such objectives as:

1) increasing the investment attractiveness of less developed regions,
2) stimulating the development of own sectors of the national economy,
3) implementing and developing new technical and technological solutions,
4) increasing the connections between the local and domestic economy, and foreign economy (increased export dynamics),

5) improving the competitiveness of goods manufactured and services provided,
6) restructuring the given region through effective use of existing post-industrial assets and economic infrastructure,
7) creating new jobs,
8) optimal use of natural resources while respecting the principles of sustainable development and taking into account environmental objectives.

Such formulation of the objectives of SEZs suggests that, on the one hand, they should be a tool of industrial policy in the field of development of certain industries, transfer of modern technologies and support of the production for export. However, the functioning of those zones in Poland showed that the original objectives of the zones developed. At present, one may refer to the following purposes of special economic zone establishment: attracting new, technologically advanced or innovative investments (resulting in permanent modernisation of the economic structure of the region), activation of the labour market and development of a network of cooperation between economy and science.

As reported by Holik and Novak (Lizińska, and Kissel, 2012, p. 19), all the zones operating in Poland may be characterised by dividing them into three groups, depending on the purpose of their establishment and operation, the location attractiveness, and the level of land use and development:

1) *Katowice, Mielec, Legnica, Wałbrzych and Lodz Special Economic Zones* – established within areas exposed to recession caused by obsolete production capital and industrial monoculture;
2) *Suwałki, Starachowice, Tarnobrzeg, Pomeranian, Kamienna Góra, Warmia and Mazury, Kostrzyń-Słubice and Słupsk Special Economic Zones* – established within economically underdeveloped areas with a high level of structural unemployment resulting from the disestablishment of state-owned agricultural holdings or state-owned companies;
3) *Krakow Technology Park* – operating within an area of high location attractiveness, near academic centres with a good scientific and research base.

Initially, Special Economic Zones were established for 20 years, except for technology parks established for 12 years. According to currently applicable regulations, the zones will operate until 31 December 2026. This will enable investors to take advantage of the maximum permitted public aid for the activity carried out within the zones.

3. Aspects of regional development

Dynamic development of special economic zones was a response to the growing demand of economies and communities for new products and services as well as rapid technical and

technological development. Within special economic zones, entrepreneurs might carry out business activity facilitating creation of entrepreneurship through the application of a variety of economic policy instruments. Regional development components most frequently listed in the literature include:

- economic growth and employment,
- increase of welfare and quality of life,
- increase of investment attractiveness,
- technological development and innovation,
- restructuring and diversification of economic activities,
- development of services and social resources,
- development of institutional infrastructure,
- better environmental quality.

Table 1 presents factors and instruments increasing local and regional competitiveness in privileged areas.

Table 1.
Forms and instruments increasing local and regional competitiveness in special economic zones

Factors	Instruments
• economic • legal • technical and technological • natural (natural values of the region)	• legal and administrative (taxes and fees, tax reliefs and exemptions) • economic (subsidies, investment refunds, regional assistance in the creation of new jobs)

Source: Filipiak, Kogut, Szewczuk, and Zioło, 2005, p. 285.

The importance of SEZs in enhancing the regional and the local competitiveness consists in facilitating development in selected areas with economic, administrative and legal, social, technical and technological factors involved. Among economic factors, one should refer to public aid regarding new investments and creation of new jobs. Administrative and legal factors include tax incentives, reliefs and preferences as well as less bureaucracy for entrepreneurs operating within SEZs, resulting from there being no need to obtain specific administrative decisions (certain types of business activity do not require obtainment of a permit to carry out business activity). Social factors include systematic improvement of qualifications of persons residing in the area of the zones, resulting from the requirements of the local entrepreneurs.

An important feature of the existing SEZs is the differentiation resulting from the varying macroeconomic environments of the regions, the structure of the existing industries in the area of the zones, the level of qualified labour, the road and railway network, or the distance from the markets. Such differentiation results in the fact that investments in individual zones are or will be interesting to enterprises representing different industries and different investment strategies. Consequently, it is an indirect form of public aid for both enterprises and regions. Its existence, through the impact on the development of and rational management in a specific

region, affects the condition of a given local and regional structure. In a wider context, the zone is an element of the global economy, the purpose of which is to build mechanisms of interrelations on the global market through a system of special economic and financial incentives.

4. Investment attractiveness of Poland

Following the period of political changes, enterprise restructuring and changing economic policy of the country, in particular following Poland's accession to the European Union, there was a period of economic growth primarily based on increased investments, that being foreign investments coming to Poland. The country had become an attractive investment location mainly because of low costs of labour, a wide market for products and services, and an increased internal demand. Special economic zones are a tool stimulating the inflow of investments to Poland. At this point, it is worth mentioning the so-called Keynesian multiplier stipulating that if public investments are undertaken, there is an increase in the demand for consumption articles and production, which in turn will create further demand for additional investments (Pastusiak, 2011, p. 257). The increase in the volume of investments in the SEZs resulted in a more extensive application of the investment multiplier mechanism, which in turn resulted in an increased consumption demand in the regions.

As stated in the Report of the Ministry of Economy (2017, p. 3), the 2016 cumulative value of the capital invested by entrepreneurs carrying out business activities in the special economic zones pursuant to relevant permits to 112.3 billion Polish zlotys. In 2016, the greatest contributors to that value were: Wałbrzych SEZ – 21.7%, Lodz SEZ – 13.88% and Katowice SEZ – 12.56%, while the least significant one – at the level of 1.51% – was Słupsk SEZ. On the other hand, the greatest dynamics of investments in 2016 was recorded in Mielec SEZ, in which investments increased by 23.8% as compared to 2015. In the analysis of the volume of investments in 2016, Lodz, Mielec and Pomeranian SEZs stood out. The investments amounted to PLN 1.95 billion, PLN 1.27 billion, and PLN 1.15 billion, respectively. In the first of the foregoing zones, the greatest investments were made by such companies as UMA Investments and Ceramika Tubądzin III; in Mielec SEZ – Ball Packaging Europe Lublin and Kronospan Mielec, and in the Pomeranian SEZ – Mondi Świecie, SPX Flow Technology Poland and MrGarden. (Report, 2017, p. 11-13).

According to a study carried out by Instytut Badań nad Gospodarką Rynkową in 2016 (Report, 2016, p. 8-12), subregions of Poland characterised by long-time industrial traditions featured the highest level of investment attractiveness with respect to industrial activities. The value of investments per one job created shows a high level of investment capital intensity. This proves modernity of the production methods used, a high level of production automation,

and highly qualified personnel. Given the industrial nature of the activity selected to be carried out within a SEZ, the location of the zones of the greatest investment attractiveness to a large extent covers the subregions of the country that are the most attractive to industrial investments (data shown in Fig. 1).

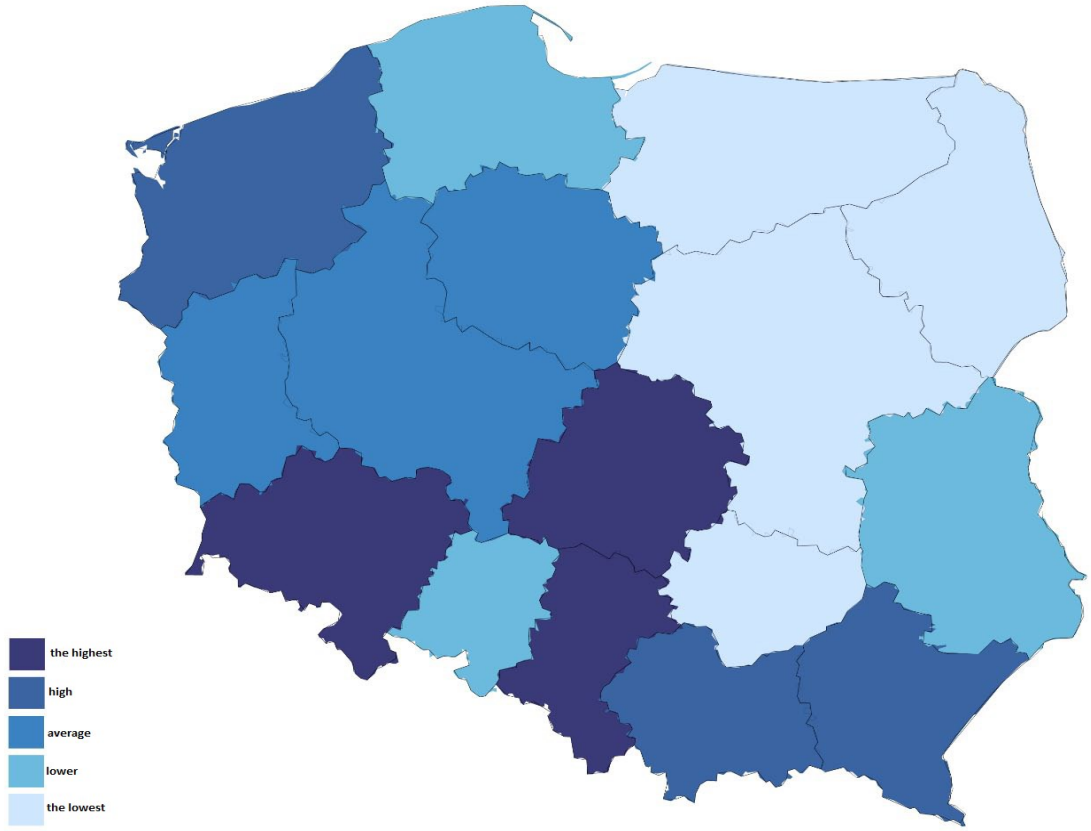

Figure 1. Voivodeship investment attractiveness to industrial activity in 2016. Source: *Atrakcyjność..., p. 10.*

Regions of the greatest investment attractiveness included areas primarilz located in the south and south-west of Poland. The greatest level was achieved by regions located around the Upper Silesia: Katowice, Rybnik, Bielsko-Biała and Częstochowa areas with the oldest and the largest plants of Katowice SEZ; Krakow and Oświęcim with areas covered by Krakow SEZ; the Lower Silesia, around Wroclaw and Wałbrzych, with the area of the 'Invest-Park' Wałbrzych SEZ; and Jelenia Góra with Kamienna Góra SEZ. This group also included Lodz subregion with Lodz SEZ subzones, Poznan subregion with Kostrzyń-Słubice subzone, and Bydgoszcz-Torun subregion with the areas of the Pomeranian SEZ. Investments carried out in the SEZs are predominated by investments carried out within the Lower Silesian Voivodeship and the Silesian Voivodeship, with nearly 53.7% of the funds invested by the fifteen largest investors. In Katowice area (Gliwice, Siemianowice Śląskie, Dąbrowa Górnicza, Tychy, Czerwonka), the automotive industry is developing the most dynamically; it specialises in industrial investments of high capital and labour intensity. The region is also characterised by a well-developed transport infrastructure and a specialised labour market (qualifications and skills obtained by the local community beforehand may be fully used in the current structures), and a well-

developed sector of production companies. As it may be noted, the location of investments in individual sectors of activity often corresponds to the location of former industrial plants in a given area.

SEZs were established to increase the competitiveness of the economy of Poland through an increase of investments in modern sectors of economy. Nearly 10% of the investments carried out by zone companies are investments of industrial nature, as business management and transport services account for barely 1.3% of the total investment value. Nearly 1/3 of industrial investments are investments in the automotive sector, about 8% in the sectors of paper and paper products, articles of other mineral non-metallic raw materials, and food products. The structure of investments by sector in the zones was specified at the level of the Polish Classification of Goods and Services, established pursuant to the Ordinance of the Council of Ministers of 29 October 2008 on the Polish Classification of Goods and Services. Statistical data on the structure of investments in SEZs in Poland have been shown in Table 2.

Table 2.
Structure of investments by sector in the SEZ in 2016

Name of section	Investments (in mln PLN)	Total share in investments (in %)
Vehicles, trailers and semi-trailers	27,079.25	24.12
Rubber and plastic products	11,897.07	10.60
Finished metal products, excluding machinery and equipment	8,936.95	7.96
Paper and paper products	8,704.32	7.75
Articles of other mineral non-metallic raw materials	7,530.02	6.71
Food products	6,542.56	5.83
Computers, electronic and optical products	5,873.29	5.23
Chemicals and chemical products	5,592.44	4.98
Electrical equipment and non-electrical household appliances	5,563.45	4.96
Machinery and equipment, not classified elsewhere	5,563.45	4.96
Wood and products of wood and cork	4,295.62	3.83

Source: Report of the Ministry of Economy..., p. 25-26.

The automotive industry, most extensively represented among the investors, was one of the leading industries in four zones, i.e. in Legnica, Wałbrzych, Katowice, and Kostrzyń-Słubice. In Legnica, its share exceeded half of the value of the capital invested, and it amounted to nearly 59.6%. In Wałbrzych and Katowice SEZs, the automotive industry's share was at a similar level, and it amounted to 45.7% and 45.5%, respectively. In Legnica SEZ, the largest automotive investors included Volkswagen Motor Polska, Sitech and Basf Polska; in Katowice SEZ – NGK Ceramics Polska, General Motors Manufacturing Poland and Brembo Poland, and in Wałbrzych SEZ – Volkswagen Poznan in Września, Toyota Motor Manufacturing Poland, and Toyota Motor Industries Poland (Raport 2017).

5. Conclusions

One of the main objectives of the existence of special economic zones was the need to eliminate the disproportions in the social and economic development of individual regions. Establishment in Poland of special economic zones as an instrument supporting the local and the regional development was related to the need to actively stimulate the development of individual regions through directing foreign and domestic investments to them. The capital invested by the companies operating in the zone plays a significant role in the development of the regions. The volume of the incoming investments determines the level of territorial development of the special economic zones. A high cumulative volume of investments characterises both the Upper Silesia and the Lower Silesia. This is reflected in the leading role of both of the aforementioned regions.

The foregoing deliberations confirm the positively posed research question if the special economic zones are an attractive place for entrepreneurs to invest. Special Economic Zones are an interesting concept of regional and local development. The world shows a significant interest in their development. An analysis of statistical data shows a positive impact of special economic zones on the social and economic development of the region. However, it should be remembered that uneven distribution of foreign investments leads to growing disproportions in the development of individual regions; consequently, it may result in growing disproportions in the regional development of the country.

Of particular importance is the special economic zones' positive impact on the development of the regions, including through such aspects of carrying out business activity within a privileged area that affect decisions stimulating investment location, for instance the increasing level of enterprise innovativeness, the changing structure of employment, the development of entrepreneurship, or the impact on the model of education, and their innovativeness and competitiveness not only on the local, but also on the national or the international level, hence the great popularity of the concept.

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RELATIONAL RISK FACTORS IN PUBLIC SAFETY NETWORKS

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Abstract: The complexity of operations in public safety networks poses a challenge from both an organisational and a social perspective. Problems associated with the limited number of resources or prior experience, as well as those arising from the diversity of expectations and beliefs of individual organisations, may give rise to threats and relational risk. Relational risk is a relatively new research category. This paper is an attempt to fill a part of this research gap by analysing relational risk factors in public safety networks. The performed analyses demonstrate the multidimensionality of risk sources in public safety networks, in addition to relational risk factors. The paper also presents the results of an assessment of the impact of key relational factors in public safety networks and characterises the links between them. The paper ends with conclusions.

Keywords: relational risk, risk factors, public safety networks, public management.

1. Introduction

The need for cooperative action in public management networks arises mainly from legal regulations and the resulting statutory duties of individual organisations. However, the effectiveness of cooperation within these networks also depends on organisational, situational and social conditions (Sienkiewicz-Małyjurek, 2017). The limited number of resources, the variability of circumstances, negative experiences and beliefs can all influence the course of co-implemented processes and cause all kinds of problems, which can in turn reduce the level of trust and interorganisational commitment. In consequence, cooperation between public safety networks is associated with relational risk stemming from the relations between individual organisations (Klimas, 2013; Światowiec-Szczepańska, 2014).

Relational risk is a relatively new category, which emerged along with the development of the interorganisational relations theory. This is reflected in the relatively small number of scientific publications included in the Scopus, Web of Knowledge and Publish or Perish databases. They all indicate that the issue of relational risk has only been discussed in the literature since recently, and less frequently than in the case of business risk or operative risk concepts. At the same time, taking into consideration the modern paradigm of organisational

management based on networks of relationships, there is a need to intensify research in the field of relational risk. This paper is an attempt to fill a part of this research gap by analysing relational risk factors in public safety networks.

2. Research methodology

The aim of this paper will be achieved through the following research:

- A survey of Polish and foreign literature.
- A hermeneutic process carried out in December 2014 in a group of four scientists who actively participated in the research of interorganisational cooperation. Two people had conducted research in this field for 10 years, while the other 2 had been involved in it for 5 years. Brainstorming sessions were conducted on the basis of practical examples and analyses of typical circumstances of cooperation.
- A questionnaire survey conducted in June 2016 among experts dealing with the topic of public safety system operations. 100 questionnaires were completed in the course of the survey, out of which 83 correctly filled-in questionnaires were included in the analysis. The survey was conducted in person, which made it possible to clarify and narrow down the questions.
- A discussion among 43 experts who had taken part in the survey, which enabled a preliminary verification of the results and facilitated their interpretation. It was due to the fact that the experts had pointed out problematic areas of cooperation within the system of public safety management, and used practical examples to explain how co-implemented activities worked.

The research context, including the multidimensionality of risk sources in public safety networks and the relational risk factors existing within these networks, will be presented in the course of these analyses. Next, on the basis of the research carried out with the participation of experts, the results of the assessment of the impact of key relational factors in the studied network will be presented, and the links between these factors will be characterised. The paper ends with conclusions.

3. Multidimensionality of risk sources in public safety networks

Public safety management is an organised activity performed with the use of human, financial, technical and information resources of multiple organisations, undertaken in order to mitigate potential risks, ensure a steady flow of public life and protect the human life and

health as well as property and the environment, which involves compliance with the law and protection of the order with public interest in mind (Sienkiewicz-Małyjurek, 2010). Its functional scope and scale of threats are broad, as they encompass measures taken in the field of social, regional and criminal policy, in addition to the entirety of measures in the sphere of crisis management (Williams, et al., 2009; Tomasino, 2011). Activities in these fields are performed by numerous organisations, including the local government, emergency response units, the media or non-governmental organisations. However, the key players in public safety networks are the Police, the State Fire Service and Medical Rescue Units (Blackstone, et al., 2007; Andrew, and Hawkins, 2013). The activities of these groups are supported by remaining services, inspectorates and guards, while such entities as non-governmental organisations, research and development facilities and local communities perform a supplementary function. Entities within public safety networks form complex systems of different internal structure, operating under certain conditions and connected through numerous internal and external relationships. The activities they carry out are based on cooperation, and the units participate in them in a parallel manner, complementing each other (Waugh, and Streib, 2006; Berlin, and Carlström, 2011; Kapucu, et al., 2010). Their role changes depending on the threat, which always occurs in a different place, has a different intensity, course and range of impact, and requires an individual configuration of capabilities and resources. The diversity of threats and the complexity of actions performed by multiple entities within public safety networks are a source of uncertainty in an unambiguous assessment of the status and future developments, which constitutes a risk in the implementation of activities.

Risk in public safety network is multidimensional in nature; its source is located in both external and internal factors (Kożuch, and Sienkiewicz-Małyjurek, 2017). External factors include conditions which necessitate adaptation, such as legal, social and environmental circumstances. On the other hand, internal factors occur in various areas of activities undertaken by individual entities in public safety networks. Examples of these include the existing procedures, level of communication and coordination of joint operations. Therefore, threats in public safety networks stem from problems in the functioning of individual organisations and also occur in the functioning and cooperation of multiple entities of mutually supplementary competencies. The hitherto conducted analyses indicate that the sources of risks in public safety networks encompass five dimensions (Kożuch, and Sienkiewicz-Małyjurek, 2017):

- The legal dimension, e.g. inconsistency of legal regulations, overregulation or insufficient regulation, incompatibility of legal regulations with working practices etc. This dimension provides the framework for the operation of public organisations.
- The organisational dimension, e.g. inappropriate decisions, inadequate coordination of activities, incorrect interpretation of information, lack of communication between

organisations etc. It results from the structure and organisational culture of individual entities as well as the structure of the entire public safety network.

- The relational dimension, e.g. experience in previous interorganisational relationships, good will and commitment to joint operations etc. It includes organisational behaviour inside the organisation and between different organisations, in addition to formal and informal relationships between them.
- The situational dimension, e.g. uncertainty, changeability and sudden additional threats may result in maladaptation of the actions to the situation or making inappropriate decisions.
- The environmental dimension, e.g. topography and properties of the terrain, the number of surrounding structures, the transport system or the population level affect the implementation of activities, as they can, for example, condition the possibility of reaching the people under threat. This dimension causes the risk of threats to be different in each area, thus requiring an individual approach.

The presence of individual dimensions of risk in public safety networks depends on the course of events, as all or some of them may occur depending on the situation. In every case, there are many variants of implementing the actions, and even choosing the solution which seems to be optimal at a particular moment does not guarantee success. This is due to the fact that it is always possible for additional threats to emerge or for them to cumulate or escalate. Therefore, it is advisable to constantly identify and interpret risk in order to minimise the potential negative consequences of threats. This paper focuses on the relational dimension, which involves the behaviour of individual entities within public safety networks.

4. Relational risk factors in public safety networks

In a general sense, risk includes events or conditions and the consequences thereof, which have both a negative and a positive impact on the realisation of goals (Drennan, et al., 2015; Jonek-Kowalska, 2011). It is a measurable situation which occurs periodically and constitutes the function of uncertainty, increasing along with it.

One type of risk is relational risk, which refers to the probability and consequences of a lack of satisfaction from the cooperation, resulting mainly from the behaviour of entities which are connected through a certain relationship (Mikuła, and Pietruszka-Ortyl, 2006; Światowiec-Szczepańska, 2014). Reflects the fears and beliefs of partners regarding the behaviour of other parties involved in the cooperation. It also determines the shape and structure of relations within networks of cooperation (Das, and Teng, 2001). Relational risk also concerns problems which may hamper the achievement of common goals, such as distortion or provision of incomplete information, lack of commitment, avoidance of

responsibilities (Liu, et al., 2008; Ring, and Van de Ven, 1994). Therefore, it applies to all kinds of barriers in maintaining good relations between organisations.

It is impossible to eliminate risk of any type; it is only possible to take actions which will enable the minimalisation of their probability and consequences. To take appropriate actions, it is necessary to identify the risk factors, namely reasons determining the occurrence of a given phenomenon. Such factors can vary in nature; they can also mutually reinforce their impact, thus contributing to the escalation of threats. In the case of relational risk, they include factors related to interorganisational cooperation, which, in their positive sense, may be the driving force of joint operations, and, in a negative sense, they might be a source of danger. They include (Kożuch, and Sienkiewicz-Małyjurek, 2016a):

- lack of interorganisational proximity,
- low frequency of cooperation between the organisations,
- lack of care for the interests of the collaborating organisations,
- hesitation in solving interogranisational conflicts,
- low benefits drawn from the cooperation between units,
- unclear expectations of the collaborating organisations,
- significant limitations in interorganisational cooperation,
- unrepeatable cycles of interorganisational cooperation,
- uncertain conditions of cooperation,
- unclear roles of individual organisations involved in the cooperation (e.g. leadership, coordination, support),
- lack of balance between dependence and autonomy,
- problems in the specialisation of collaborating entities,
- unfair balance of involvement of individual organisations in the cooperation,
- hermetic nature of the network of collaborating organisations,
- intransparent requirements related to the implementation of shared tasks,
- unsatisfying results achieved as a result of interorganisational cooperation,
- lack of mutual support of the collaborating organisations,
- differing missions, visions and goals,
- individual decisionmaking by the organisations,
- assymetry of interdependencies between individual organsiations,
- incorrect management of interorganisational cooperation (for example, styles, transparency of decisions and instructions),
- lack of interorganisational trust,
- inability to compromise among the organisations.

All of the identified factors affect relational risk, yet to a different degree. Due to this fact, on the basis of the hermeneutic process conducted by a group of four scientists, the strength of their impact was assessed according to the following scale: 1 – minor impact; 2 – moderate

impact; 3 – strong impact. Key factors were determined as a result, including (Kożuch, and Sienkiewicz-Małyjurek, 2016b): asymmetry of interdependencies between organisations, lack of interorganisational proximity, unclear expectations of the cooperating organisations, unclear roles of individual organisations, imprecise requirements concerning the fulfilment of shared tasks, uncertain conditions of cooperation, hesitant solving of interorganisational conflicts, low frequency of cooperation, problems in the specialisation of collaborating entities. These factors can significantly weaken the relations between individual organisations or even lead to their severance. Due to this fact, they require a thorough analysis in the specific context of activities in order to minimise their negative impact.

5. Analysis of key relational risk factors in public safety networks

The effect of key risk factors differs depending on the context of activities. On that account, the identified factors were assessed and discussed on practical examples by experts in the field of public safety networks and referred to subject literature. The results are presented in Figure 1.

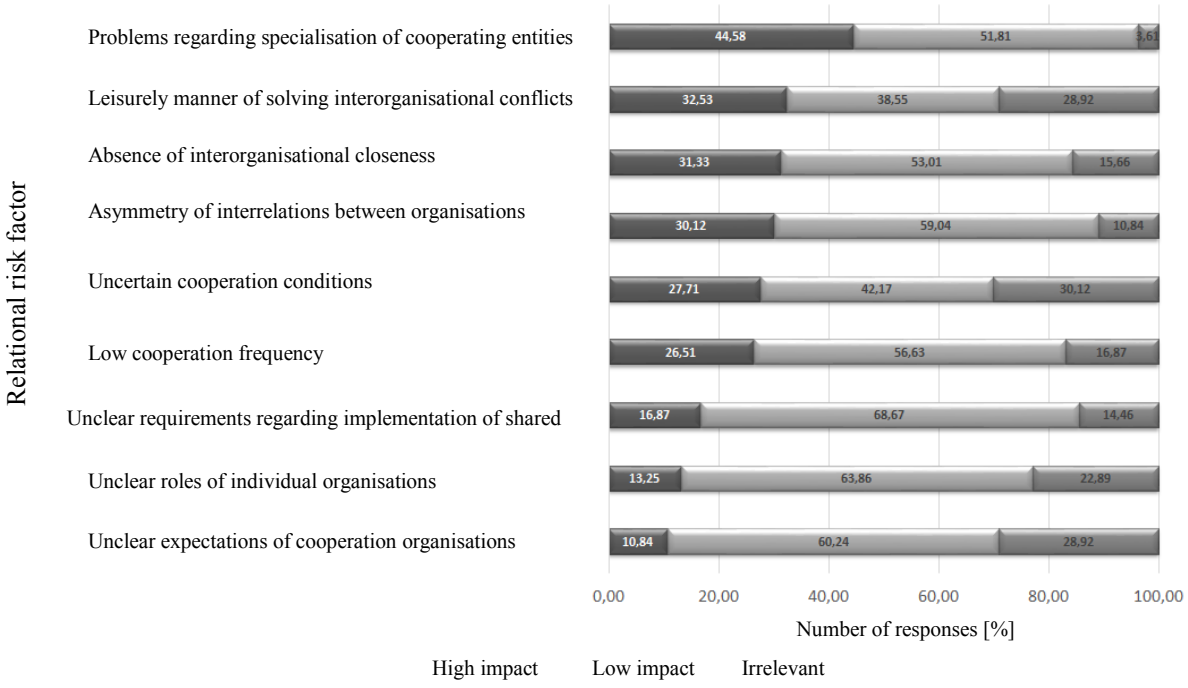

Figure 1. Evaluation of the impact of key relational risk factors in public safety networks. Source: author's own study.

Even though it is impossible to cease joint performance of activities within public safety networks, relational risk factors may significantly influence their quality. According to experts, the following factors have the greatest impact on relational risk: problems in the

specialisation of collaborating entities, hesitant solving of interorganisational conflicts and lack of interorganisational proximity. Specialisation results from the statutory tasks and complementary competencies of individual organisations. However, a clear-cut division of these competencies is not possible. For example, a number of entities can evacuate people from public areas or provide first aid. However, the degree of specialisation and the division of tasks may cause problems in the coordination of activities and constitute a source of conflicts (Lagreid, and Rykkja, 2015; Lindgren et al., 2008). Conflicts arise mainly from organisational individualism as well as from approaching the event through the prism of one's own organisation rather than in a holistic manner. Specialisation and division of tasks create certain expectations of organisations in relation to each other, and the practice of joint activities is not always consistent with these expectations. In addition, the belief in self-sufficiency in dealing with a given situation by one organisation may cause cooperation to be substituted by competition (Berlin, and Carlström, 2011). On the other hand, interorganisational proximity refers to those characteristics of organisations which create the conditions for cooperation, including four dimensions (Balland, et al., 2015; Czakon, 2010; Klimas, 2013; Kramarz, 2017): geographical, organisational, institutional, social and cognitive. The studied factors influence the latter two dimensions of proximity, as they can lead to a lack of understanding for other organisations and failure to meet their needs, which is a source of relational risk.

The following factors also significantly influence relational risk in public safety networks: asymmetry of interdependencies between organisations, uncertain conditions of cooperation and low frequency of cooperation. Interdependencies mean the extent to which the activities of individual entities depend on each other. Their asymmetry reduces the level of trust and interorganisational commitment, which limits the effectiveness of shared activities (Kumar, et al., 1995; Gardet, and Mothe, 2011; Kumar, and Van Dissel, 1996; Wong, et al., 2005). Asymmetry of interdependencies in public safety networks may lead to a passive attitude and a reduced focus on cooperation, which may have serious consequences under uncertain conditions. The uncertainty of the conditions of cooperation stems from the characteristics of the course of action in the analysed networks. Each event, even of the same kind, occurs in a different place and time, has a different course, and in each case, the engaged resources have different configurations and various options for action exist. This generates the necessity of individual approach to every threat, and differences in the perception of events and a lack of a shared image of the situation may lead to misunderstandings and relational risk. In turn, the frequency of cooperation stems not only from the need for shared action resulting from the threats but also from the number of initiatives taken for the sake of cooperation with other organisations, e.g. joint exercises, outings, meetings, discussions. A shortage of such initiatives limits the interorganisational proximity and makes it impossible to know the expectations of other organisations.

Imprecise requirements concerning the fulfilment of shared tasks, unclear roles of individual organisations and unclear expectations of the cooperating organisations also play a significant role in the generation of relational risk in public safety networks. Both the uncertainties concerning the fulfilment of shared tasks and the unclear roles of individual entities arise from problems related to the interpretation of legislation and the resulting possibilities for action. Similarly, omitting and failing to inform other organisations of one's own expectations may lead to a lack of mutual understanding, differing interpretations of the situation, which results in a negative experience and creates relational risk.

The characteristics of relational risk factors indicate that they complement each other and might increase each other's strength. An analysis of the mutual influence of individual factors was carried out on this account, with the results presented in Table 1.

Table 1.
Links between relational risk factors in public safety networks

FORMED FACTOR / FORMING FACTOR	Problems in the specialisation of collaborating entities	Hesitation in solving interorganisational conflicts	Lack of interorganisational proximity	Asymmetry of interdependencies between organisation organisations	Uncertain conditions of cooperation	Low frequency of cooperation	Imprecise requirements concerning the fulfilment of tasks	Unclear roles of individual organisations	Unclear expectations of the collaborating organisations
Problems in the specialisation of collaborating entities	-	X	X	X	X	X	X	X	X
Hesitation in solving interorganisational conflicts		-	X		X	X	X		X
Lack of interorganisational proximity	X	X	-		X	X	X		X
Asymmetry of interdependencies between organisation organisations		X	X	-	X	X	X	X	X
Uncertain conditions of cooperation			X	X	-	X	X	X	
Low frequency of cooperation	X	X	X		X	-	X	X	X
Imprecise requirements concerning the fulfilment of shared tasks		X	X	X	X	X	-	X	
Unclear roles of individual organisations		X	X	X	X	X	X	-	X
Unclear expectations of the collaborating organisations		X	X		X	X	X		-

Source: own elaboration.

Even though the individual influence of the studied factors on the probability of relational risk in public safety networks is strong (see fig. 1), in practice these factors are coexistent, causing an additional problem of complexity and complication. Links most frequently occur between the following: low frequency of cooperation, lack of interorganisational proximity and imprecise requirements concerning the fulfilment of shared tasks. This indicates a necessity of increasing interorganisational contact, which strengthens the relations between the employees of individual entities, and of paying more attention to improving shared operating procedures.

6. Summary

Public safety networks are complex structures of organisations, groups and individuals connected by formal and informal relations and functioning on the basis of available technologies. Its constituent entities are autonomous organisations of complementary competencies, the actions of which are based on cooperation stemming from statutory tasks and areas of specialisation. However, activities implemented in public safety networks are characterised by complexity and occur in an unpredictable and changeable environment. Their configuration is different in every case, depending on the threat, context of activities and situational requirements. In addition, each case requires a different approach, according to the conditions of operation. Circumstances which generate relational risk may occur as a result.

All of the identified key relational risk factors influence the functioning of public safety networks. However, the most important are the following: problems in the specialisation of collaborating entities, hesitation in solving interorganisational conflicts and lack of interorganisational proximity. In addition, all of the key relational risk factors complement each other and escalate each other's influence. Due to this fact, it is necessary to identify and adopt measures which will make it possible to limit the influence of relational risk on the functioning of public safety networks.

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ARTIFICIAL INTELLIGENCE AT UNIVERSITIES IN POLAND

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Abstract: Artificial intelligence (AI) technologies are one of top investment priorities in these days. They are aimed at finding applications in fields of special value for humans, including education. Chatbots are one of those AI-driven solutions that support learning and teaching processes also in higher education institutions. In this paper there are presented two cases of chatbot technology implementation at Polish universities. Chatbots develop students' technical and programming skills, but also provide the possibility of gaining linguistic expertise. However, a chatbot's teaching mastery depends also on its users. That is why it is important to get students to truly understand AI systems and feel responsible for the conversation. But above all, we should ensure that chatbots respect human and civil rights.

Keywords: artificial intelligence (AI), chatbot, intelligent tutoring system (ITS).

Artificial intelligence will reach human levels by around 2029.
Follow that out further to, say, 2045, we will have multiplied the intelligence,
the human biological machine intelligence of our civilization a billion-fold
Ray Kurzweil

1. Introduction

Artificial intelligence (AI) is the inevitable future of business and is predicted to fundamentally alter the nature of society by the year 2040 (Paterson, 2017). According to a Gartner report, AI technologies will be in almost every new software product by 2020; consequently, it will be one of the top five investment priorities for more than 30% of CIOs (Gartner, 2017). Investment in AI start-ups was already estimated at 6-9 billion USD in 2016 (up from 415 million USD four years previously) (Paterson, 2017). In 2016, with 133 million USD, the UK showed the highest level of venture capital and seed funds investment in AI solutions of all the European countries (Stanusch Technologies, 2017). The level of AI investment in Poland is comparable to that of Sweden's venture capital and seed funds

investment in AI of more than 10 million USD in 2016 (Stanusch Technologies, 2017). Experts anticipate that AI augmentation will generate 2.9 trillion dollars in business value in 2021 and recover 6.2 billion hours of worker productivity (Gartner, 2017), as users will save time due to AI-powered tools.

AI technologies are aimed at finding applications in fields of special value for humans, such as individual transportation (self-driving cars), healthcare diagnostics, and targeted treatments, as well as in physical assistance for the elderly (Stanford University, 2016). To date, we have, however, noted considerable AI advances in education at all levels, especially as it allows personalized education at scale. This paper focuses on AI solutions implemented in education in Poland, which is one of the fastest growing post-Soviet countries in Central and Eastern Europe.

2. Artificial Intelligence in education

Artificial Intelligence is said to be "that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment" (Nilsson, 2010, p. xiii). However, this definition is still ambiguous, as machines (computer technology) develop at an incredibly rapid pace and their current functioning comprises far more than it did a few years ago. Generally, AI is "concerned with the development of computers able to engage in human-like thought processes such as learning, reasoning, and self-correction" (Kok, et al., 2002, p. 1096) and tries to imitate intelligent behavior by means of computer programs; that is, thinking and acting like humans, as well as thinking and acting rationally (Kok, et al., 2002).

The relationship between AI and cognitive processes allowed the wide use of AI technologies in education, especially since contemporary globalized education requires a new approach to pedagogical practices. Growing demands for enrolment in higher education are associated with the need for quality teaching and learning processes. Moreover, technological advances accelerate the development of new forms of direct and distance learning (UNESCO, 2007). Some of the modern technological solutions incorporated into teaching processes are, in fact, AI-powered ones.

Schools use intelligent tutoring systems to assist teachers in the classroom, as well as students at home. Teaching robots can familiarize students with coding and with reasoning deductively (e.g. while they configure robots to dance), as well as teaching them how to use visual programming language (to create simple actions for iOS and Android applications) (Stanford University, 2016). Intelligent tutoring systems (ITSs) use human-machine dialog to solve scientific problems, provide foreign language trainings (including the recognition of language errors and providing correction), as well as to support human teachers in many fields

(e.g. mathematics, medical diagnosis, physics, and chemistry) by giving students useful hints with specific feedback based on their questions and provided answers (Stanford University, 2016). Today, applications imitate human behaviors increasingly perfectly, as they offer avatar-based trainings that can adjust to users with different cultural backgrounds, or whose mastery of learning and problem-sequencing patterns differs (Stanford University, 2016). AI-driven, massive open online courses (MOOCs), which are sophisticated learning management systems that provide synchronous and asynchronous education, including assessment tools (the automated grading of multiple choice and fill-in-the-blank tests), even support distant learning (onlineuniversities.com, 2014) (Foko, and Amory, 2005). These online courses are also very useful for data collection, which could be used for learning analytics that could make a vital contribution to improving the quality of educational process, including the student engagement, behaviors, and outcomes, as well as issues related to cognitive processes (such as comprehension, knowledge acquisition, and memory) (Stanford University, 2016).

However, according to a Stanford University report, "school and universities have been slow in adopting AI technologies primarily due to lack of funds and lack of solid evidence that they help students achieve learning objects" (Stanford University, 2016, p. 31). This remark seems to contradict what we observe: a clear transition from traditional paper handbooks to digital and audio media as tools that enhance the educational process. Moreover, the use of modern technologies allow artificial intelligence to be linked to virtual reality techniques that allow students to participate in simulation – trial and error – a critical part of learning. Generally, AI tools offer students an opportunity to learn in a relatively judgment-free environment, especially if AI tutors offer suggestions for improvement. All of these options make the educational process less intimidating (onlineuniversities.com, 2014).

Above all, AI implementations in education have blurred the line between formal classroom education and self-paced individual learning, thus making it available to all (Stanford University, 2016). Chatbots are well-developed AI-driven solutions that successfully enhance processes in schools and universities; we describe them in the subsequent section.

3. Chatbot technology

Chatbots, also called as chatterbots, talkbots, conversational agents, virtual agents or virtual assistants, intelligent assistants or dialogue systems[1] are computer applications that interact with users by using natural languages (Abu Shawar, and Atwell 2007a) in text and/or

[1] According to chatbots.org there are 161 synonyms for the word "chatbot"! Retrieved from: https://www.chatbots.org/synonyms/#all, 2017.12.14.

by means of a voice. Chatbots were developed to "provide a conversational interface to a software program that performs tasks or services for an individual user or groups of users" (Buxton, et al., 2016, p. 5).

A chatbot comprises three modules: a user interface, interpreter, and knowledge base (Wallace, 2004). In some cases, their function is based on a fixed set of rules, and they only respond if a user applies the exactly correct command, which is a great technical limitation to imitating human conversation. However, chatbots are currently mostly machine learning (ML) systems that can learn without being explicitly programmed (Samuel, 1959). They collect users' inputs and transform them with the use of natural language processing (NLP) into appropriate outputs (Uliyar, 2017). Both of these solutions (ML and NLP) are artificial intelligence (AI) fields and their emergence over the last few years had an impact on chatbot technology development by changing it into AI-powered technology.

Joseph Weizenbaum developed the first chatbot – ELIZA –in the 1960s (1966) and imitated a psychotherapist's "active listening" strategies in a clinical treatment setting. This text-type application, which was initially regarded as fun and part of an "imitation game" (Turing, 1950), used a keyword-matching technique. If a user's input contained a keyword, ELIZA provided a suitable answer according to a programmed rule. In another case, the chatbot would try to obtain more information by encouraging a patient to continue the dialogue and to eventually indulge in reflection and introspection, which are part of standard therapy. Although some people believed they were talking to a real psychologist (Weizenbaum, 1976)[2], ELIZA was not a perfect imitation, as it could not converse with true understanding (Shah, et al., 2016). Nonetheless, ELIZA became an inspiration for new generations of chatbots.

Kenneth Colby developed the next and more advanced chatbot, PARRY (also called as "ELIZA with attitudes") (Colby, et al., 1972). PARRY imitated a paranoid schizophrenic's behavior and obtained interesting results from the Turing test (only 48% of psychiatrists identified PARRY as a machine, which is consistent with random guessing). In 1972, PARRY had a discussion with ELIZA, but their conversation seemed rather fruitless and ridiculous (Cerf, 1973).

The subsequent development of chatbot technology included the application of machine learning. Rollo Carpenter developed Jaberwacky in 1988 (www.jabberwacky.com/j2about), which was systematically improved in 1997 and launched on the Internet. In 2008, its name was changed to Cleverbot (www.cleverbot.com). Cleverbot can retain all conversations and reuses users' statements to make appropriate responses by matching the contexts of patterns. Consequently, "[i]t can be taught slang English, word games, jokes and any other form of identifiable language trait. Everyone contributes, so everyone can enjoy chatting – you could say it's a conversational Wikipedia" (www.jabberwacky.com/j2about).

[2] See more about ELIZA effect – the tendency of assign human behaviors to computers. Source: Hofstadter, 1996.

ALICE (Artificial Linguistic Internet Computer Entity) is another famous chatbot that Richard Wallace created in 1995 (Wallace, 2009). Although ALICE does not save a conversation's history and its responses originate from the knowledge domain stored in its database (does not learn) (Abu Shawar, and Atwell, 2007a), it uses Artificial Intelligence Mark-up Language (AIML) files to store pattern knowledge in three categories: atomic, default, and recursive. AIML, which a worldwide free software community developed, supports most chatbot platforms and services currently in use.

Modern chatbots can understand human natural language (written and spoken), as well as commands; they constantly improve their answers during interactions with users, store, assess, and categorize the information they receive to use it appropriately again in the future (Pratt, 2017). Today, we expect chatbots to display a wide array of functions and divide them into three groups (after Samsonnet, et al., 2006):

- Dialogic agents, which can interpret meaning (comprehension function). When provided with a textual or oral input, they analyze it with natural language processing tools to generate appropriate responses.
- Rational agents, which have access to an external base of knowledge and common sense (e.g. via corpora of data) (competence function). They can answer users' questions competently and can store context-specific information (e.g. a user's name).
- Embodied agents, which usually have a human-like avatar form (presence function), in order to build trust with users and entertain them.

Currently, chatbots' human-like reactions include voice intonation (Massaro, et al., 2001), avatars' face expressions, and their body posture (Lee, and Lacey, 2003), personality (Nguyen, et al., 2017), and sense of humor (Pilato, et al., 2008).

Virtual Personal Assistants (VPAs), which focus on userbased data, are one of the most popular types of chatbots (Imrie, and Bednar, 2013). Leading IT companies like Google (Google Assistant), Apple (Siri), Amazon (Alexa), and Microsoft (Cortana) have created most of the competitive and often compared VPAs.

There are many chatbot applications, as they can be useful for information retrieval, business, e-commerce, and education (Abu Shawar, and Atwell, 2007a). Chatbots help commuters find an appropriate transport connection (e.g. Instalocate, Tfl TravelBot), can forecast weather (e.g. Poncho), facilitate the making pf friends (e.g. Zo or Foxsy), and are helpful with scheduling fitness exercises (e.g. GymBot, FitBot) and other routines (e.g. MeditateBot) (Cahn, 2017). They can also improve the customer service of finance institutions (e.g. Eno), insurance (e.g. ABIe), and other fields (e.g. Marriott International's chatbot), as well as be modern message autoresponders (e.g. bots for Skype). A chatbot may be your opponent, a chat partner in a discussion game (e.g. Façade), your health assistant (e.g. GYANT), and even a therapist (e.g. WoeBot).

Above all, chatbots are also useful tools in education.

4. Chatbots for education

Chatbots are modern technological solutions that can increase students' motivation, stimulate essential learning behaviors, facilitate information absorption and communication processes, as well as imitate personal relationship during learning (Gulz, 2004). According to Knill et al. (2004), using chatbots in teaching processes may help teachers identify specific students' problems based on frequently asked questions or log files. Moreover, some systems even detect hesitance in a student's first response (Forbes-Riley, and Litman, 2011). This hesitance could indicate fields that should be thoroughly explained.

Bots are, for instance, used in foreign language learning, as they speak in a perfect, educated accent and could help students include private, emotional issues in a conversation, especially young students who treat a chatbot as a friend (and not as a teacher) (Jia, 2004a). Bots also make students feel more relaxed and comfortable when using a foreign language than when speaking to a person. A well-designed chatbot supports complex learning by improving spelling and vocabulary, but also listening and speaking skills. Bots also provide an easy self-analysis and self-evaluation if a students can access a transcript of the conversation (Fryer, and Carpenter, 2006). A good example of a well-developed chatbot when learning English is a Computer Simulator in Educational Communication (CSIEC) (Jia, 2004b), which is a web-based, human-computer communication system that uses natural language, imitates human emotions and personalities, and absorbs acoustic inputs (not only keyboard ones). In this case, conversations are not limited to a specific subject. However, it is very important to implement developed technologies, because chatbots based on keyword matching have failed to work as a teaching assistant program for foreign language learning. Their responses were predictable and lacking in personality; they also failed to detect spelling errors and grammar errors (Jia, 2004a; Chantarotwong, 2005). Above all, conversing with a chatbot (even a very simple one) may increase the quality of later interactions with a real language teacher and may lead to better effects on students' affection, cognition, and behavior in the context of a discussion (Goda, et al., 2014).

Learning foreign languages is not the only teaching field where a chatbot may be useful. Sofia (Knill, et al., 2004), a chatbot developed at Harvard University, can help with teaching mathematics, can solve simple mathematical problems, as well access more information about students' progress, their learning strategies, and frequent mistakes. VPbot (Webber, 2005) is used to increase medicine students' competences by imitating patients' answers during a premedical interview. ITSPOKE (Forbes-Riley, and Litman, 2011), which is an automatic tutoring system based on spoken dialogue, helps students learn physics. Chatbots are also applied to teach basic computer science concepts (Benotti, et al., 2014), including artificial intelligence offered as an online course that by Jill Watson – a chatbot that Ashok Goel developed – conducts (Goel, and Joyner, 2016). All these bots are the result of scientific

endeavors to create modern educational agents that can help improve learning outcomes and adapt to individual learners' needs (Kerlyl, et al., 2007).

There are also some solutions that use chatbots in assessment processes as a part of developed e-learning. Geoffrey Crisp and colleagues (2010) suggest conducting this process in a virtual world application, such as Second Life. They argue that "the collaborative and distributed nature of the internet have provided new opportunities to redesign assessment tasks so that students can be more creative in their responses and to provide evidence of deep and holistic learning" (p. 2). In their initial work, they applied the Pandorabot and showed that it is possible to present students with a simple set of assessment tasks within the Second Life environment.

Chatbots are also present in higher education institutions, only not necessarily in the teaching processes, as they also play a vital role in communication between universities and their students (Putz, 2017). These chatbots are designed to serve as students' personal university advisors (Ghose, and Barua, 2013), for example, during the admission process (Polatidis, 2011). Moreover, they support librarian work by providing responses to e-mail inquiries, by answering general questions, and by referring searches to the library catalog and other databases (McNeal, and Newyear, 2013).

5. Chatbots in Poland

The first Polish commercial chatbot was created in 2003. It was a static text-based program with limited knowledge and responsiveness (Kuligowska, 2015). Currently, 142 chatbots are recognized at chatbot.org (www.chatbots.org/country/pl) as originating from Poland. Most of them are virtual assistants and advisors at government institutions (e.g. the labor offices, town halls, civil registry offices), commercial companies (e.g. telecommunication and electricity distribution companies, the IT industry, online bookstores, insurance companies, commercial banks, real estate agencies, hotels, auction services, etc.), and even NGOs (promoting public benefit organizations' activities and the cultural heritage). One Polish chatbot is a part of a platform supporting a research project developed during a discussion on biopsychology and cognitive science; it is an attempt to construct a conversation based on neural networks (S.I.N.K.) (sink.anabot.pl). The Institution of Robot Control at Lodz University of Technology, together with Stanusch Technologies (a leading chatbot producer in Poland), is realizing another research and development project called TEPSON. This project aims to build a robot for the largest Polish telecom operator (www.chatbots.org/chatterbot/tepson).

Polish chatbots provide users with information on, for instance, legal, banking, marketing, and medical issues. They inform customers about an offer, the ways invoices can be paid,

the complaints procedures, are virtual shop assistants, and can conduct online surveys, as well as collect opinions. Bots also navigate, provide information about a location, and can schedule and explain procedures. Most of them use Polish, although some use English, and one even Russian.

In 2015, Karolina Kuligowska scrutinized the Polish market for commercial virtual assistants and compared six chosen chatbots that different companies had developed (Kuligowska, 2015). She evaluated the quality of the components, such as the appearance, the form of the implementation on the website (whether it was a floating window, pull-out side tab, a flexible combination, or something else), the knowledge base (basic and specialized knowledge), the speech synthesis unit (the uniqueness of the voice, the possibility to choose a voiceless option), the bot's conversational abilities (including its language skills and context sensitiveness), its personality traits, its personalization options (e.g. whether the gender of the chatbot's visualization could be changed, whether the chatbot could recall the user's name, and could recognize a browsed subpage of a web page or website). Some of the evaluated bots showed specific reactions to unexpected situations, such as ignorance, made typos and misspellings, insulted users, or humiliated them. Some of them could recognize foreign languages, or even translate English words into Polish. They also presented their knowledge in various forms, for example, by means of special functional buttons (e.g. "Help," "Info," "?"), by autonomously and dynamically loading new subpages, and making interactive connections to an external database. In her research paper, Kuligowska (2015) evaluated only one virtual assistant operating in education, namely KAREN, a virtual guide on the Skarbek Graduate School of Business Economics' website. KAREN answers questions about the school, provides information about studying opportunities, and possible career developments (www.chatbots.org/virtual_assistant/karen).

According to chatbots.org, five virtual assistants support higher education institutions (HEIs) in Poland. Besides KAREN, there are also:

- WINCENT, a virtual advisor on the University of Economics in Katowice's website, helps users find information about knowledge engineering and provides information related to semantic web issues (about chatterbots, ontology, Web 3.0, etc.) (www.chatbots.org/virtual_agent/wincent).
- ANIA, a virtual assistant on the Graduate School of Personnel Management's website discusses any topic related to the school's offer: the studies, specializations, additional activities, the study methods, recruitment stipulations, e-learning methods, admission procedures, and possible career development (www.chatbots.org/virtual_assistant/ania2).
- ANIA, again the name of a virtual guide at the Warsaw School of Social Sciences and Humanities' website, converses on any topic related to the school's offer: the courses, specializations, additional activities, study methods, international cooperation,

admission procedures, and the feasibility of being recruited (www.chatbots.org/chatbot/ania_fido).

- Ad@m, a virtual secretary of the Viessmann Academy of the School of Modern Heating System Techniques, explains how to apply to the school, provides information about the degrees and certificates, gives the secretariat's telephone numbers, and answers the most frequently asked questions (www.chatbots.org/virtual_assistant/adam).

Most of the above-mentioned chatbots in Polish academic institutions aim at facilitating contact with students or candidates, thus acting as office desk assistants. However, one Polish IT company offers a well-developed e-learning platform with an AI-powered virtual teacher that students can consult at any time; it can clarify vague contents, discuss a specific part of the course content, and even conduct oral exams (www.stanusch.com/?q=fact_1008287). The pilot implementation of this solution was at the University of Economics and Humanities in Bielsko-Biala.

All the virtual assistants discussed in this section have only been presented from users' perspective (including their needs, preferences, and expectations), as well as their general usability in education (which is common practice when evaluating chatbot technology) (Abu Shawar, and Atwell 2007b). In the following section, we discuss the adaptation of chatbots at two Polish universities, which includes the analysis of the user inputs and statistics, and the role of university stakeholders in developing the technology.

6. Research method

Prior literature reveals the application of the case study method in many research papers on chatbots (see for instance Kowalski, et al., 2013; Goda, et al., 2014), as this "enables a researcher to closely examine the data within a specific context. Case studies, in their true essence, explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships" (Zainal, 2007, p. 1-2). This method is also used to present commercial institutions' chatbot issues (e.g. PwC n.d.; VentureHarbour n.d.).

We therefore use a multiple descriptive case study in order to describe the natural phenomena occurring within a relevant case. The researchers describe what occurred (Yin, 1984).

Two cases represent the chatbot technology implemented at Polish higher education institutions (HEIs) to not only provide general information about the universities' offer and admission procedures, but to also help students gain and develop knowledge about AI-related issues. We examined the functioning of these bots in order to:

- identify the chatbots' knowledge base categories,
- analyze the types of frequently asked user questions and the chatbots' responses.

The two cases describe the chatbot implementation that the same commercial company, Stanusch Technologies (www.stanusch.com), developed. They both use Polish. The analysis is based on not yet published data that their developer provided and on the diploma thesis of a student who helped with the implementing and adopting of a chatbot at one of the universities (case 1).

7. Case 1: KLAUDIA

KLAUDIA is a virtual assistant created for the Signal Processing Group at AGH University of Science and Technology, which a student adapted to provide information about and promote university-related issues. This prototype was tested with users' participation in a pilot phase from May 1 to December 1, 2013 – see http://www.dsp.agh.edu.pl.

7.1. Specialized knowledge base content

A specialized knowledge base, specific for the chatbot, was implemented in order to promote the university's offer and provide information on issues related to the research that the Signal Processing Group conducted. The knowledge base was divided into four categories (Jaciów, 2014):

- AGH University, covering facts about its structure, recruitment process, scholarships, other forms of financial aid, student associations, and student traditions.
- Signal Processing Group, providing information about research projects at the unit, the unit member, the unit resources and product, and the content available on the unit's website.
- Acoustical Engineering, providing descriptions of the academic course, its program, candidate requirements, graduates' professional perspectives, subjects, a list and descriptions of available specializations, laboratory infrastructure, and other course-related details.
- Signal processing and speech technologies, providing explanations of basic concepts in these knowledge domains.

Although the implemented chatbots' main purpose was to answer users' questions requiring specialized knowledge, only a minority of the produced answers was university-related. 66% of the answers only used the general knowledge base (Jaciów, 2014).

7.2. Frequently asked questions and given answers

During the analyzed period (7 months) 4,815 conversations there were conducted, which generated 35,280 user questions and chatbot answers (Jaciów, 2014). The questions (user inputs) and answers (chatbot outputs) were grouped into categories (some phrases could be included in more than one category), which table 1 and table 2 present. No examples of questions and answers are included, as they were formulated in Polish and some of them cannot be easily translated into English.

Table 1.
Inputs classification for the KLAUDIA chatbot at the AGH University of Science and Technology (www.dsp.agh.edu.pl)

Category	Subcategory	Frequency of occurrence
Greetings		249
	Formal	219
	Informal	30
Goodbye expression		65
	Informal	40
	Formal	25
Anthropomorphic questions		1782
	About its name	165
	About its age	172
	About its appearance (e.g. height, wearing)	139
	About its relationships (e.g. boyfriend, kids, husband)	236
	About its feelings (e.g. happiness, mood)	86
	About its preferences	206
	Compliments	171
	Proposals (e.g. to meet, date)	70
Questions about chatbot technology		236
General facts (e.g. about the current time or weather)		231
Mathematical calculations (e.g. 2+2)		151
AGH University related questions		499
Signal Processing Group-related questions		91
Acoustical Engineering course-related questions		302
Signal processing and speech technologies-related questions		181
Questions about specific persons (e.g. faculty members)		169
Input with information about a user (e.g. “I’m stupid”, “I’m having a meal now”		229
Other questions (e.g. “does God exist?”)		1322
Requests		315
	for action (e.g. “smile”, “wave your hand”)	148
	for a general discussion	44
	for a specific action (e.g. “tell a joke”)	78
	to end the conversation	29
Obscene phrases		925
	Insults	217
	Sexual harassment	238
	Intimate questions	208
	Single vulgar word	262
Feedback		320
	Positive	171
	Negative	149
Random typing		103
Nonsense statement		139

Source: based on (Jaciów, 2014, p. 31-32).

The discussed case study reveals that inputs are usually questions about anthropomorphic issues. Users also prefer to use informal language while chatting with the bot, which suggests that the virtual assistant is perceived as a peer. It also shows that KLAUDIA was used more for entertainment than as a source of specific knowledge.

Table 2.
Outputs classification for KLAUDIA chatbot at the AGH University of Science and Technology (www.dsp.agh.edu.pl)

Category	Frequency of occurence
Acceptance, confirmation	573
Refusal, denial	333
Expression of comprehension	86
Encouragement to continue	21
Regret	16
Refusal to provide information	7
Output in foreign (English) language	63
Expression of laughter	94

Source: based on (Jaciów 2014, 32).

A total of 1,796 KLAUDIA outputs were identified. Most of them were simple confirmations or denials. However, the system is able to express "active listening," strategy, and emotions (by laughing) (Jaciów, 2014).

KLAUDIA is not an AI-based chatbot and does not develop its knowledge base during conversations. However, if it were possible, it should develop its competences regarding informal communication rather than use professional language.

Besides being a useful desk office assistant and a kind of glossary, KLAUDIA also became a research subject. Paweł Jaciów, who has completed his engineering thesis, participated actively in the process of implementing the chatbot's specific knowledge base. During his research project, Jaciów developed the application of the chatbot technology, which a commercial company had provided. Involving students of engineering and/or IT technologies in chatbot developmental processes could be a crucial part of their education. The KLAUDIA project, which has been terminated, confirms that it is an example of a good practice in this field.

8. Case 2: WINCENT

WINCENT is a virtual advisor completed for the University of Economics in Katowice to provide a professional explanation of concepts in the knowledge engineering field. IT is described on the separate website that promotes the topic for students: http://inzynieriawiedzy.pl.

8.1. Knowledge base content

A knowledge base was implemented that comprised 190 facts divided into 13 categories, such as: chatterbots, data/information, engineering knowledge, engineer knowledge, configuration, ontology, about the project, personality, knowledge representation, Knowledge Engineering course, knowledge organization systems, knowledge, and knowledge management.

In the period from January 1, 2014 to October 1, 2017 (45 months) WINCENT participated in 1856 conversations and its users generated 9094 inputs (the bot could not find an appropriate answer for more than 13% of these). More than 28% of the total chatbot outputs required the specialized knowledge base.

8.2. Frequently asked questions and given answers

The most frequently asked questions that users asked (including their comments, requests, and statements) WINCENT during conversations in 2017 are presented in table 3.

Table 3.
Inputs classification for WINCENT chatbot at the University of Economics in Katowice (inzynieriawiedzy.pl)

Category	Subcategory	Frequency of occurence
Greetings		71
	Formal	6
	Informal	65
Goodbye expression		6
	Informal	3
	Formal	3
Anthropomorphic questions		87
	About its name	26
	About its age	18
	About its origin (e.g. creator,)	16
	About its relationships (e.g. boyfriend, kids, husband)	17
	About its feelings (e.g. happiness, mood)	4
	About its preferences	6
Questions about chatbot technology (e.g. knowledge base, AIML, Watson, etc.)		47
General facts (e.g. about the current weather)		13
Knowledge management-related question (e.g. about knowledge, data, ontology)		52
University-related questions		22
Knowledge Engineering course-related questions		30
Questions about specific persons (e.g. the dean)		7
Input with information about a user (e.g. “I have 1250 PLN”)		3
Requests		34
	for a location	9
	for a telephone number	3
	for general explanation or justification (e.g. “why”)	22
Obscene phrases		28
	Insults	6
	Intimate questions	3
	Single vulgar word	19

User's attitude		157
	User's acceptance or confirmation (e.g. "ok", "for sure")	91
	User's refusal or denial (e.g. "no", "so not",	31
	Expressing user's willingness to discuss (e.g. "what's up?")	22
	Expression of user's emotions (e.g. laugh, confusion)	13

Source: based on internal non-published data of Stanusch Technologies

Most of the users' inputs were confirmations or denials. The specific way of conducting a conversation with chatbots encourages the discussants to continue the dialogue by also asking questions. In this case, people were also more interested in WINCENT as an embodied technology (they often asked anthropomorphic questions). Nevertheless, the percentage of obscene phrases was lower this time.

Table 4.
Inputs classification for WINCENT chatbot at the University of Economics in Katowice (inzynieriawiedzy.pl)

Category	Description	Frequency of occurrence
Knowledge management theory	explanation of basic concepts such as knowledge, data, ontology, presentation of knowledge classification, etc.	179
Knowledge engineering theory	explanation of specialized notions, such as semantic network, expert system, XML, RDF, agent system, data warehouse	185
Knowledge Engineering course	information about subjects, types of potential employers, future career opportunities for graduates, knowledge engineering as a profession, advantages of studying	35
Chatbot technology theory	explanation of notions such as a chatbot, knowledge base, AIML, presentation of the evolution and applications for this technology	82
WINCENT	*(usually as an answer to anthropomorphic questions)*	84
	general information about WINCENT's activity, usability, purpose	37
	answers to questions about WINCENT's age	32
	answers to questions about WINCENT's creators	15
Other		162
	list of specialized topics	67
	user's name recognition	42
	statement used if no answer was in knowledge base	53

Source: based on internal non-published data of Stanusch Technologies

The 73 output phrases that were most frequently generated in 2017 were classified into six categories. Three of them, which are of a theoretical nature, were frequently used, because the main purpose of the analyzed chatbot is to support the learning process. WINCENT is focused on knowledge management-related topics and tends to list them quite often. Information about the Knowledge Engineering course, which is a type of educational promotion, did not appear in many conversations.

Despite the significant number of facts in his knowledge base, WINCENT could sometimes not find a correct answer. This occurred 53 times During this research session. In this case, the system generates an output that encourages the user to continue, or to again have a discussion with the chatbot later. The following few phrases are examples *(translated from Polish)*:

- *I don't have any information about this at the moment. Come back later. I'll try to find out.*
- *I know many things, but I don't know anything about this right now. However, I can suggest something.*
- *I don't know much as I'm still young. But I learn from my discussants each day. Come back some time, I will be wiser.*

The results presented above were from the WINCENT project, which was part of a still running inter-organizational project at the University of Economics in Katowice financed by EU funds. Its main objective is to create new academic courses that can implement new media and knowledge technologies in teaching programs and fulfill labor market needs.

A similar chatbot was implemented for the whole university and is available at its main website: https://www.ue.katowice.pl/. Although it looks exactly the same as WINCENT, it has a larger facts base (900) and uses other categories. This system is focused on promoting the university and its educational offer, but displays a similar personality to WINCENT when answering anthropomorphic questions or insults.

9. Research limitations

The conducted research is focused on just two cases of chatbot implementation in higher education institutions in Poland. The general conclusions derived from them are limited, since incorporating artificial intelligence in the teaching process should also include pre-academic education levels. Moreover, both cases are based on chatbots that the same company provided, and they therefore use similar technological solutions and language patterns. In addition, only two public universities offering AI-related courses (acoustic engineering and knowledge engineering) were involved. The research process should therefore be extended and combined with other science fields, such as the humanities or social sciences. Nevertheless, the presented cases could be an inspiration for a continued discussion on the role of AI in developing contemporary education.

10.Conclusions and Lessons from the Cases

The Chatbot market in Poland seems to be developed. Virtual assistants, guides, or secretaries mostly help commercial companies and public office with promotions and customer service processes. Polish universities also implement this modern technology to present their educational offer, or treat chatbots as an alternative to an information desk.

This specific chatbot application field is due to chatbots being better able to inform than to discuss, since "conversations are hard to sustain for non-humans, and once a computer loses track of where it is in a two-way interaction, [the] results can quickly break the "magic" of the whole situation" (Porcellana, 2018). That is why the boundaries should be set and defined for a chatbot function, as it is impossible to implement a chatbot that can react appropriately in every single situation.

Despite chatbots usually being used for marketing processes, the presented cases are good examples of incorporating a chatbot into a teaching process. Adding appropriate phrases to a virtual assistant's knowledge base not only develops technical and programming skills, but also provides the possibility of gaining linguistic expertise. However, a chatbot's teaching mastery depends on its users, who are responsible for enhancing the communication process. In each cases we find that users provided insults, intimate questions, vulgar words, and other topics that are irrelevant in the educational process. If there is no control of human-chatbot interaction, there is a risk of losing sight of this interaction's goal. First, it is important to get people to truly understand AI systems, to intentionally participate in their use, as well as to build their trust, because "[t]he measure of success for AI applications is the value they create for human lives" (Stanford University, 2016, p. 33). Providing conversations with a chatbot should be like raising children – within defined borders and according to shared values. Not doing so, could create a bot that is a neo-nazi supporter, like the Microsoft Twitter bot (Wakefield, 2016). Consequently, society needs to adapt to AI applications if it is to extend its benefits and mitigate the inevitable errors and failures. This is why it is highly recommended to create new AI-powered tools for education that are the result of cooperation between AI researchers and humanities' and social sciences' researchers, who can identify cognitive processes and human behaviors.

The chatbots examined in the presented cases could play the role of a learning assistant if they contained specialized knowledge bases and could easily recall a list of academic, course-related topics. Such learning assistants could help a human tutor focus on in-class moderated discussions based on real cases, while the chatbots could automatically provide the theoretical fundamentals, or simple exercises (perhaps even automatically assessing the level of information absorption). However, the changes required to chatbots to conduct educational processes also require significant changes to curricula (NSW, 2017). Moreover, education institutions would also need to ensure that that they have an appropriate infrastructure, as well as the safety and credibility of AI-based systems. Ultimately, the law and policies need to adjust to the rapid pace of AI development, because the formal responsibility for appropriate learning outcomes will in future be divided between a teacher and a machine. Above all, we should ensure that chatbots respect human and civil rights.

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DRIVES OF STEPPING INTO INTERNATIONAL MARKETS – THE ANALYSIS OF ORIENTED FIRMS IN THE SILESIAN VOIVODESHIP

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Abstract: The aim of the article is to present basic foundations of internationalization which were presented and interpreted, terminology and related concepts functioning in management sciences, as well as key determinants and trends prevailing in the contemporary realities of business management in global conditions. The author interprets the basic categories of strategic management in relation to the phenomenon of internationalization, that is the essence of the strategy and their types as well as the methods and motives of undertaking operations on foreign markets by enterprises. The article contains considerations on issues related to external and internal factors affecting the internationalization of enterprises.

Keywords: internationalization, foreign markets, enterprises.

1. Introduction

The author's inspiration to be interested in the internationalization of Polish enterprises came from the cognizance of the significant impact of this phenomena on modern enterprises. In the era of liberalization and integration of markets, the process of internationalization of economic activity becomes an important element affecting the functioning of the enterprise in the demanding conditions of the international environment. In author's opinion, it plays the role of the foundations of modern entrepreneurship, it is part of the indispensable technological progress that accompanies the changes in the economic and economic sphere, but, what should be emphasized, it essentially influences the management processes of creating business strategies. Thanks to modern information technology, today's entrepreneurs have better access to knowledge about foreign markets, and hence, greater opportunities to enter them with a product and/or a service. Such awareness of the environment favors contemporary internationalization processes, which become an indispensable way to compete with other entities and can be a factor stimulating production growth and thus a factor increasing profits. Having in mind the above issues, the author of this article focuses on the concept of

internationalization and analyses inducing factors making the entrepreneurs stepping into the foreign markets based on the results of research taken among the Polish companies in the Silesian Voivodeship.

2. The concept of internationalization: genesis and essence

Internationalization is universally present in many areas of social and cultural life. It is also present in economic sciences and can be considered in many aspects. The word itself, according to the Dictionary of the Polish Language (PWN, 2017), means recognition of something as international or becoming international. In the political dimension, it will describe the relations between nations or international relations having a common goal, and in this case internationalization should be understood as internationalization, i.e. the acquisition by states of the right to use on equal terms for example, a certain territory, rivers, devices by sanctioning such a state of affairs under a mutual agreement. In the field of economics, the term defines the international dimension of the activity of the national economy, indicates the degree of involvement and the size of the flow of production factors between states, and also markets, human and financial capital, and regulations (Daszkiewicz, 2004). The approach to internationalization in this context can be divided into macro- and microeconomic. The first will refer to the above-mentioned entire economies, including the entities present in them, and it is in their complete dimension that these economies will undergo internationalization processes. In terms of microeconomics, the term internationalization will narrow its reference to the activities of enterprises (Pietrasieński, 2005), and its essence should be transferred at this point to the field of management sciences, which in their assumption deal mainly with the economic life of enterprises, so their functioning in international markets perfectly fits into the foundations of this discipline (Sudoł, 2012). Thus, internationalization of enterprises is an important issue in management sciences, as it determines the process of enterprise development. In the context of management sciences, internationalization should be considered as symptom of internationalization of enterprises, taking into account the stages of development, operating conditions, environment and management methods, likewise globalization processes. On the one hand, one can assume that internationalization is a reflection of a static picture of the company's economic connections with foreign countries, on the other hand, the phenomenon should be interpreted dynamically like sequential or simultaneous process of maturing the enterprise to achieve next higher forms, or formulating further stages of development or, further, analyzing internationalization in terms of behaviorist interpreting the phenomenon as an algorithm based on a series of proceedings (Rymarczyk, 1996; Brzeziński, and Pietrasieński, 2011). Therefore, the basic definition of internationalization in the field of management science, which is a kind of starting point for

further analysis, is the acceptance that it is any manifestation of the economic activity of the enterprise outside its borders (Susman, 2007) or *[...] extending the company's operations outside the domestic market to foreign markets* (Głód, 2008), or the transition/exit from the domestic market to foreign markets (Gierszewska, and Wawrzyniak, 2001). Such a definition is so fluid and broadly defining internationalization that on the one hand reveals the general outline of the concept, and on the other allows a different, deeper analysis of internationalization in terms of its intensity and scope of activity on the foreign market, drives or motives, benefits and concerns related to activity entrepreneurs on foreign markets, or the company's strategy to reach the foreign market. In the scientific literature, one can come across many definitions or descriptions of the internationalization of enterprises, in which the phenomenon has been variously taken from the perspective of the international activity of companies. P. Pietrasieński (2005) supports the statement that the internationalization of enterprises basically assumes exporting products and, furthermore, transferring production to other countries. J. Brilman (2002) points to increasing production volume and amortizing expenditure on development and research as a goal of expansion within internationalization through export or direct investment. A. Czubała, A. Jonas, T. Smoleń and J. Wiktor (2006) define internationalization as *the flow of capital, goods, services, people, ideas between different countries; on the services market, the manifestation of internationalization is the entry of products, technologies, skills or other resources of enterprises on the foreign market and competing on them with the offer available so far*. K. Janasz, W. Janasz, K. Kozioł and K. Szopik-Depczyńska (2010) consider internationalization in the process category, during which enterprises on the path of international unions and transactions with companies from other countries, they become aware of how far international activity affects their development. Whereas, J. Calof and P.W. Beamish (1995) perceive the concept of internationalization as a process of adjusting strategies to resources and company structure to the international environment. Similarly, L.S. Welch and R. Luostarinen (1998) treat internationalization as a process in which an enterprise is more and more involved in international action. A comparable definition has been developed by J. Johanson and J.E. Vahlne (1997), and it is worth mentioning that even earlier, J. Johanson together with L.G. Mattson (1982) also drew attention to the use of growth and integration strategies and penetration to expand business networks in various countries in the internationalization process. The literature mentions as well N.F. Piercy (1981), for whom, the internationalization takes place at the moment of starting a business outside the home country, which is tantamount to direct foreign investment. Comparably, L. Melin (1992) recognizes the company's commitment by internationalization in foreign international markets. An thought-provoking interpretation of the concept of internationalization of enterprises has been introduced by M. Gorynia (2008), who stated that even only one product and/or service in the company's offer and related to the foreign market give reasons to consider the company's activities in the context of internationalization. The author divides the phenomenon of internationalization into passive and active. In the first case, this means for the enterprise

a number of economic connections with various foreign partners, while the company itself does not go beyond the borders of the state in which it has its headquarters. In the case of active internationalization, the company undertakes activities outside the country through various forms of expansion on foreign markets. The division, or a specific classification in the phenomenon of internationalization, has been also mentioned by Rembiasz (2011) who separately mentions the internationalization of markets resulting from the disappearance of barriers to international trade and the desire to gain new sales opportunities, internationalization of production and subsequent capital, which are the result of the disappearance of borders in the flow of both production systems and finance, and points to the internationalization of human capital, which is the consequence of the possibility of employing people from a given country in foreign companies or the possibility of taking up employment in a foreign country.

3. Objectives, strategies and determinants of internationalization of enterprises

The company's goal on the market is undoubtedly to achieve success and competitive advantage, which significantly determines the success. In what way a company operates, what undertakings it accepts and in what direction it goes, it fits in in the concept of strategy. The selection of the strategy by the company is a key determinant of the skills and qualifications needed to build a stable and strong competitive advantage, especially if we consider achieving such advantage not only in the home market, but also in foreign markets. It can be safely stated that the strategies determine the company's results on the market, and their proper selection in the case of companies oriented to foreign markets requires a thorough analysis in order to find out and getting to know the most favorable enterprises, preferably chosen and the most effective ones. Moreover, in the internationalization process, enterprises will choose appropriate strategies and, at the same time, adequate and most appropriate methods to achieve a competitive advantage on the foreign market, which will directly translate into economic results (Fonfara, and Szczepański, 2006). The internationalization of the enterprise is determined by both internal factors and external conditions of the environment that interact with each other and ultimately affect the appropriate selection of internationalization strategies. The environment together with internal factors will at this point stand for the input of variables determining further processes in the company focused on the development of final strategies. The rudiments of building an internationalization strategy can be presented in the form of individual tasks that an enterprise should perform if it considers its presence in the international environment. First of all, the company must be aware of its surroundings and all the conditions that this environment imposes, both the so-called national, i.e. concerning the markets in your and your target country, as well as the global ones that will result from a variety of legal,

economic or political conditions. In addition, the company should take into account its own capabilities from the point of view of the company's environment and a number of internal factors that will allow further development of plans to enter foreign markets. The environment and internal factors as input variables together determine the processes of strategy building and they are based on various tasks and activities that the company should perform in order to finally create its own individual strategy of internationalization and achieve its goal thanks to it (Duliniec, 2004; Wąsikiewicz-Rusnak, 2005). Internationalization of enterprises, as previously mentioned, depends on many factors, and also on how much influence a given company has on the internationalization process, whether it is controlling or if it is forced to adapt its own strategies of entering foreign markets from the domestic environment and international. Nowadays, there is no doubt that globalization processes affect the operations of enterprises and cause its diversification. Capital markets are liberalized and trade becomes easier due to the disappearance of tariff barriers and unified standards, which in essence translates into a homogenization of consumer expectations and preferences. The free movement of goods and services is only part of the benefits of the disappearance of national borders. In addition, individual economies, and therefore enterprises can benefit from access to the latest technologies, benefit from a smooth exchange of information and experience, and therefore, intangible assets such as patents and know how, as well as have the opportunity to learn about other cultures, and also new preferences consumer. Life of people in different corners of the world is becoming more and more unified, and knowledge about the markets and goods offered on them is bigger and better than before. This definitely determines the growth of consumer expectations and at the same time drives competitiveness. For companies oriented on foreign markets, the frequently occurring desire to quickly and accurately respond to market needs and achieve a competitive advantage may be a key incentive to operate globally and to reach products in every corner of the world. The decision making, planning and formulation of the strategy will be influenced by specific external and internal factors resulting from the business environment and internal structural conditions, as well as national and global factors, and factors inside the enterprise, i.e. variable enterprises and decision variables – determinants distinguish by L. Yadong (1999) which mean making the choice of how to enter foreign markets dependent on domestic, industry and company factors as well as specific and design factors: domestic demand, government policy, national risks, cultural differences, protection of property rights, company’s situation, relations with buyers and suppliers, entry barriers, industry risk, strategic goals, strategic assets, the type of strategy in the international dimension, resources, including knowledge and experience, project orientation, the size of the enterprise, partner's potential, investment commitment, or contract risk (Yadong, 1999; Gannon, 1993; Yip, 1996). In fact, the size of the foreign market as well as its marketing structure, or the nature of competition will condition the operation of entering enterprises. Small markets favor entry based on exports as well as establishing contracts, while major investments are the domain of large markets. What's more, export occurs in the case of atomic competition, and investments

occur in the presence of oligopolistic competition, as well as in favorable production conditions, i.e. the existence of cheap resources, or labor force. Companies considering opening their own retail chains are more likely to enter markets with weaker and relatively worse marketing infrastructure or in a situation where such infrastructure does not exist at all. In addition, when entering foreign markets, the political, economic and social situation of a given country is also important, which may encourage or vice versa the potential guests. This can be perceived as forces occurring and resulting from the global character of economies, such as: political, economic, social and technical forces. They are interrelated and dependent on each other, but they determine the internationalization of enterprises (Wąsikiewicz-Rusnak, 2005). For entrepreneurs, an important issue is not only the location of the host country and its infrastructure, transport conditions, or the telecommunications level, but also the climate and culture. Cultural differences in most cases are not conducive to investment.

4. General overview of drives of entering foreign markets

Considering entering foreign markets, enterprises also take into account domestic factors that may determine them to expand their activity on the home market or to expand into foreign markets. Nevertheless, internal determinants, such as enterprise resources and products, are also important, which may also decide about the willingness and need to look for new markets, especially if the products are characterized by a large variety, thanks to which they have a chance to dominate the competitive offer. Then, the entrepreneurs will choose export as a way of entering with their offer on the markets of other countries. In the case of standard and less diverse products, entering foreign markets will be based on contracts and direct investments, and the strategy to achieve an advantage will be the low price strategy. It is different when the company's offer is a service. In this case, the most important issue is constant contact with the recipient, that is why the further located markets will be excluded, and if, then entering such markets takes place through the creation of their own distribution network with the help of commercial or production branches. Services can also be sold through contractual cooperation or franchises. If, however, the company's product is characterized by high technological advancement, entering the foreign market more often takes the form of licensing. Direct investment and direct export are also preferred if it is necessary to adapt the products to the local market, but usually this is dictated by the situation preventing the sale of products on the home market or the adaptation of them requires a new production supply. Mentioning about the production supply, it can be concluded that the resources of the enterprise are of key importance for entering the foreign markets. Larger ones facilitate and encourage expansion, and smaller or their essential shortage often remain a barrier and considerably limit the choice of the market (Otta, 1994; Wach, 2005; Young, et al., 1989; Roux, 1987). To complete the above issues,

reasons of internationalization are significant from the point of view of the company's activity, because they explain the reasons why companies decide to go with their offer beyond the borders of their own country. The motives of internationalization of operations are basically similar to the motives of the company's operation in domestic conditions. However, while a company operating solely in its own country should take into account the national environment, a company oriented to foreign markets must take into account not only the national environment, but also the international environment. Some drives will favor the realization of high profits, but others will initiate conditions so that profits can be achieved at all. The motives for the internationalization of enterprises can be comprehensively divided into economic (business profitability criteria, profitability of production or service activities, increase in the scale of production, reduction of manufacturing costs), market (new sales opportunities, competitive struggle, product life cycle, company image) and legal (national protectionism, the state system, legal regulations, barriers, e.g. customs) (Wiktor, 1998; Rymarczyk, 1996). Economic motives occur when a company's goal is to increase the profitability and effectiveness of its offer. The companies then consider increasing the scale of production and simultaneously look at the reduction of production costs, which is achieved by increasing the target market and relocating production abroad. In the case of economic motives, the main goal is to maximize the effect. Market drives basically determine the company's operations in relation to foreign markets in the case of stagnation on the domestic market. When foreign markets are developing dynamically, and the enterprise at home, it does not make full use of its production capacity, its products are getting older, demand is diminishing and competition is growing, then entering foreign markets may become an alternative to selling products, increasing share and gaining a competitive advantage (Sowa, 2006; Liberska 2002). Legal themes are related to the policy pursued in relation to various forms of business activity both by the home country and the host country and may consist, for example, in the introduction of tax breaks, granting loan guarantees, reimbursement of duties, providing export credit insurance on advantageous terms, or broadly understood policy supporting investment and inflow of foreign capital. Often, internationalization is also caused by a number of barriers resulting from national protectionism. In the event that commercial regulations are tightened, various types of restrictions, e.g. tax, customs, but also regarding environmental protection, are introduced, enterprises can transfer their production abroad to avoid any barriers (Nowakowski, 2000). The above-mentioned considerations may also include cost and supply reasons for internationalization. Cost motives are very often equated with an increase in the profitability of an enterprise, because in fact they stimulate an entrepreneur to internationalize a way to reduce production costs and thus increase the profit rate. An entrepreneur may want to move production or part of it to a country where production will be cheaper. Choosing a country for international expansion can be motivated by lower costs of hiring people, lower prices of land, energy, raw materials, lower taxes, cheaper loans, normative amenities, etc. For example, R.C. Feenester and G.H. Hanson (1997) proved in research on enterprises in Mexico that low wage

costs encouraged American companies to invest in this country. A similar situation of low labor costs that attracted foreign investors was observed in China by S. Dees (1998). However, supply motives usually occur in the case when the parent country lacks mainly raw materials, for example: agricultural, mineral essential for the entrepreneur to produce their products or when the price of raw materials in the home country is unfavorably higher. In other cases, entrepreneurs invest in foreign markets because of access to cheap labor, an example of which is the transfer of production to Asian countries by American companies, especially from the electronics industry. Supply, as a motive for expansion into foreign markets, is largely the domain of large corporations, which count on reducing the costs associated with buying raw materials much cheaper on these markets, due to their prevalence. The Swedish company IKEA uses access to raw materials such as bamboo, rattan and seagrass and uses cheap labor in Vietnam to produce furniture and similar household items. Japanese producers are similarly behaving, who lack the resources in their own country to compensate for investments in developing countries (Rymarczyk, 1996).

5. Internationalization of Polish companies in the Silesian Voivodeship – the study research

Silesian jurisdiction has the highest level of urbanization in Central and Eastern Europe and is one of the most economically strong regions in Poland. It also occupies a high position in the investment attractiveness rankings. The region is characterized by a great road infrastructure, especially the densest network of expressways and motorways throughout the country, in addition, it occupies the first place in terms of the length of railway lines (1978 km) and what is worth mentioning, the region also operates a broad-gauge railway (terminal in Sławków), thanks to which has easy access to Asian markets. In addition, the region can boast of a dynamically prosperous cargo air traffic in Katowice. The general market attractiveness of the Śląskie Voivodeship is also affected by high labor resources. The population is the highest national average, where almost 3 million people are of working age and most of whom find employment in industry. Key features of the Silesian Voivodship based on statistical data for 2012-2015 are presented in Table 1.

Table 1.
Characteristics of the Silesian Voivodeship in numbers (2012-2015)

Silesian Voivodeship		
Surface	km^2	12 333
Number of counties		17
Number of cities in county law		19
Number of municipalities		general: 167 a) urban: 49 b) urban-rural: 22 c) rural: 96
State of the population for the year 2015	thousand individuals	4571
Preproduction population (0-17 years)	thousand individuals	768
Population of working age (18-59/64 years)	thousand individuals	2859
Population in the production age (60/65 years)	thousand individuals	945
GDP (status on R. 2013)	%	12,7
GDP per capita (state on R. 2013)	thousand PLN	44,3
Unemployment rate (state at VII 2016)	%	6,9
Number of natural persons carrying on an economic activity (as at VII 2016)		331186
Number of commercial companies (as at VII 2016)		50196
Number of State enterprises (state at VII 2016)		7
Average gross wages in the business sector	PLN/month	4368,02

Note: Own study based on: Statistical Yearbook of Voivodships 2014, Central Statistical Office, Warsaw 2015, p. 625; Statistical Office in Katowice, http://katowice.stat.gov.pl/zakladka1.

The main branches of the economy in the Śląskie Voivodeship are industry, trade and construction. Data regarding sold production of industry in enterprises employing more than 9 people in July 2016 fluctuated within the limits of 16 thousand million PLN, including nearly 14 thousand PLN million in industrial processing. For comparison, over the months from June 2015 to June 2016, this sale amounted to PLN 1,4646.5 million, including over 16 thousand million PLN in industrial processing. Taking into account the results of the business climate survey in industry, construction, trade and services in the Silesian voivodship in August this year, it can be concluded that the general business climate assessment is positive, although many sectors experience a downturn. The economic situation in the manufacturing sector is optimistic, in general it remains at the same level, while slightly less favorable in the wholesale trade and slightly better in retail trade, although it is not improving and the level is the same as in the previous month. The transport and storage management are equally favorable in the overall assessment, while the results are not the best compared to the previous month. At a very good level there is a boom among enterprises operating in gastronomy and accommodation, as well as information and communication, but in the latter one can be seen compared to July 2016. Economic situation in construction is somewhat worse and there has been a drop in this case. The best assessment is, however, the economic situation in finance and insurance, which is comparable to last month, but even better than other summer months in the last four years (Góralczyk, et al., 2016; Central Statistical Office, 2016). From the point of view of starting

and running a business in the Silesian Voivodship, it is worth looking at data from 2015 regarding newly created activities, broken down by individual sub-regions. The percentage share of newly registered economic activities in 2015 was presented in Table 2.

Table 2.
Newly registered individuals conducting business activity in 2015 in the sub-regions of the Silesian Voivodeship

Registration of individuals established in Silesian Voivodeship (2015 year)	
Sub-region	**Number (%)**
Bielsko-Biała	16,7
Bytom	8,8
Częstochowa	12,9
Gliwice	9,5
Katowice	16,7
Rybnik	11,3
Sosnowiec	16,0
Tychy	8,1

Note: Own work based on Góralczyk, et al., 2016.

The business environment in the Silesian Voivodeship is supported by a number of programs and development plans. One can distinguish the Katowice Special Economic Zone (KSEZ) aimed at attracting new investors, thanks to which employment will increase. In addition, a number of voivodeship development plans have been developed over the years – the Silesian Voivodeship Development Strategy, which is currently being implemented, or "Silesian 2020" adopted in 2010. The goal of the voivodeship self-government is the broadly understood strategy for sustainable development and deepening the competitive values of the region, as well as the Regional Operational Program of the Silesian Voivodeship supported by the European Union Funds 2007-2013 (RPO WSL, 2007-2013), which implemented 16 programs, including many important from the point of view of the economy, economy, transport and entrepreneurship in the region. The next edition for 2014-2020 is being implemented. It is worth to mention the programs here favorable to entrepreneurship and the development of the industrial sector implemented so far as part of the ROP SLO 2007-2013 (RPO WSL, 2016). Bearing in mind the potential of the Silesian Voivodeship, it is worth to know the tendencies and orientations, or directions of development of Silesian entrepreneurs in relation to foreign markets. The way the internationalization of Polish enterprises looks like in this region is important from the point of view of future activities of local governments and institutions dealing with the development of the region and supporting entrepreneurship aimed at increasing the significance of the province not only in the country, but in the European Union, throughout Europe and on global markets. Primary attempt is to verify the degree of internationalization and secondly, to analyze the drives of stepping into the foreign markets and basics of development of Polish enterprises in relation to them.

Study sample

The conducted study included in general 114 companies from the Silesian Voivodeship. Data collection was based on for in-depth interview and application of the quantitative method on the research sample (N = 100). The research sample included micro, small, medium and large enterprises, irrespective of the type of activity, and CAWI and CATI techniques as well as direct interviews were used (N = 14) to obtain answers to specific questions. The cross-section of companies participating in the study includes both medium enterprises and micro, as well as small and large employing over 250 people. The number of medium and micro enterprises is almost the same, which accounts for 31% and 30% of all companies, respectively, while small enterprises account for slightly more than 25%, and large enterprises close to 14% out of all entities N = 114.

Types of companies

Most companies operate in the form of limited liability companies. In comparison with both surveys, there were 65 such companies, and 27 companies indicated a joint-stock company as a legal form, 10 companies are individuals conducting business activity, other companies operate in other legal forms. 45% of the surveyed companies deal with services, 10% of them take into account services in their operations alongside production and trade. 20% of the companies deal with production, 5% of enterprises joins production together with trade and 5% of companies is involved in the production and at the same time offers services. 9% of enterprises does trade, 6% trade with services. 21% companies deal just with the production, whereas, 10% of entities does trade. Other companies indicated combinations of activities.

Types of industry

Bearing in mind the type of activity, enterprises were asked about the types of industries in which they operate, which is presented in Figure 1.

The Figure 1 shows that the majority of enterprises indicated a different, than suggested in the survey, basic industries - 19 companies deal with services and consultancy, 5 real estate companies, 3 companies operate in the industry qualified to the category of environmental protection and ecology, and 4 companies have pointed to the automotive industry. Other industries listed by respondents are: gastronomy – 2 companies, energy – 2 companies, production of footwear – 2 companies, production of winter sports products – 2 companies, production of games and toys – 1 company, polygraphy – 1 company and locksmith – 1 company. Other data on the above chart indicate that 24 companies deal with industrial production and 14 companies operate in the trade sector. Among the respondents, there were also 11 companies operating in construction, 8 companies in transport and 6 in the IT industry. Few pointed to tourism, hospitality or the food industry. The lowest number of companies operating in health care and education – two entities deal with health protection and one company operates in education.

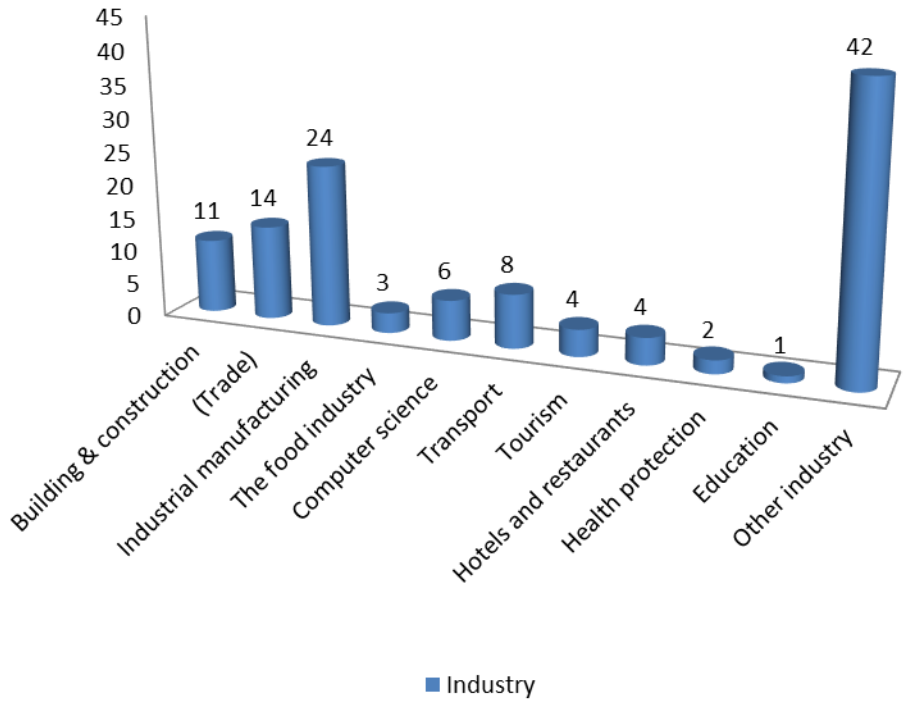

Figure 1. The type of industry in which companies operate (N = 114).

Years of functioning

According to the collected data, the vast majority of the surveyed enterprises has been functioning for over 16 years. There were 63 entities whose presence on the market lasts more than 16 years, which gives almost 56% of all surveyed companies. Less than 9% of companies operate on the market from 13 to 16 years, slightly more than 12% are companies that have been on the market for at least 9 years, and nearly 14% are enterprises that launched their operations the most 8 years ago. The youngest, functioning for 4 or less years, are companies constituting about 11% of all surveyed entities.

Types of markets

In the conducted surveys of Polish enterprises, they were also asked about the type of market on which the surveyed enterprises operate. Both the local and regional market as well as the domestic and foreign market were taken into account. Understanding the answer to the question asked about the activities on the markets allowed us to analyze the operation of companies on foreign markets in the aspect of significant issues related to the internationalization of Polish enterprises and thus to the attempt to verify the assumed objectives and hypotheses of the dissertation. Research has shown that all companies operate in Poland, some operate within a local or regional environment, and others operate nationwide. Among the surveyed companies were also distinguished those enterprises that indicated the area of their activity both the Polish market and the foreign market. The types of markets indicated by all surveyed enterprises are presented in Figure 2.

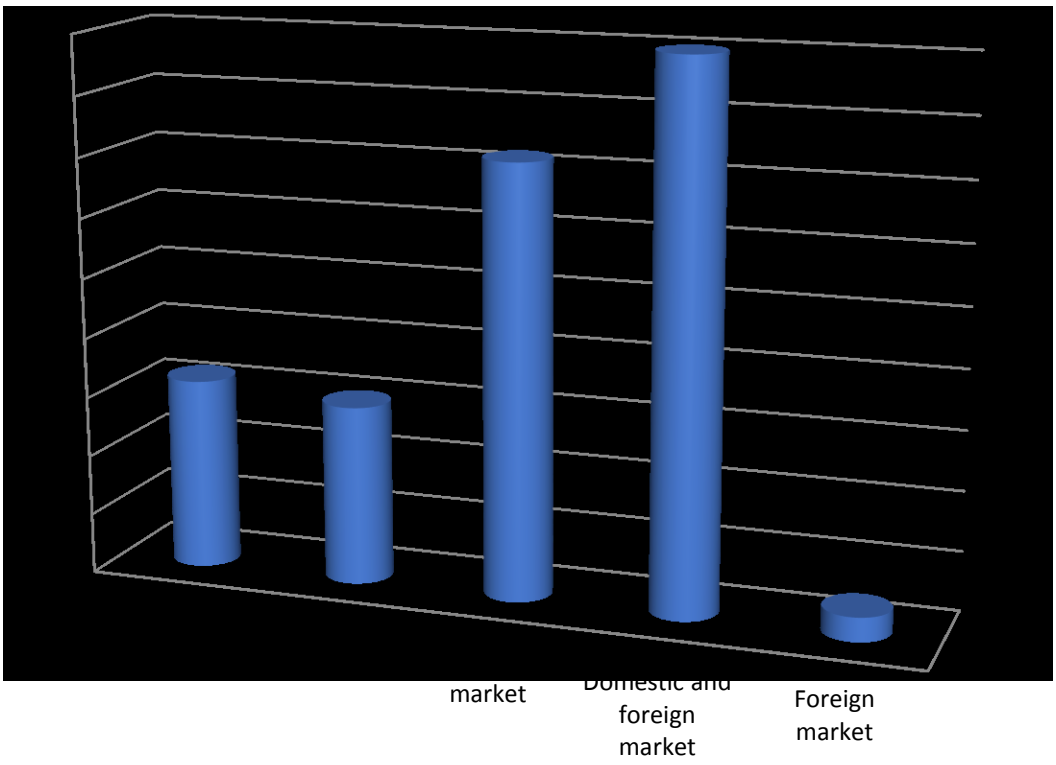

Figure 2. Type of market on which surveyed enterprises operate (N = 114).

Nearly 59% of the surveyed enterprises operate exclusively in the country, and almost 40% of enterprises take into account domestic and foreign market in their operations, which together with two companies that indicated activity only on the foreign market gives almost 42% of enterprises operating also outside Poland. Among the companies present only in Poland, 15 chose the regional market, and 16 operate only within the local market, which in comparison with all surveyed enterprises is slightly over 13% and 14% respectively of regional and local companies. Therefore, the level of internationalization of Polish enterprises in the Silesian Voivodeship based on the collected data should be assessed as moderate due to the fact that only 42% of entities operate on foreign markets, which is exactly 47 companies out of 114 subjects. Obtained results from a quantitative study for 100 Polish enterprises in the Silesian Voivodeship were subjected to statistical analysis - a significance test for the structure indicator. The test was used to verify the value of the structure indicator (Szajt, 2014), and thus a better understanding of the empirical distribution in the population of enterprises participating in internationalization. The Gretl software was used to estimate the model, assuming that the sample size N = 100 Polish enterprises in the Silesian Voivodeship, the structure ratio in the sample M = 33 entities oriented to foreign markets.

Structure indicator test for n = 100
The hypotheses were assumed:
H0: p1 = 0.2

In the face of an alternative hypothesis
H1: p1 > 0.2
Null hypothesis: structure index in the population = 0.2
Sample size: n = 100
Structure ratio in the sample = 0.33 (M = 33)
Test statistic: z = (0.33 - 0.2) / 0.04 = 3.25
Double-sided critical area p = 0.001154
(one-sided critical area = 0.000577)

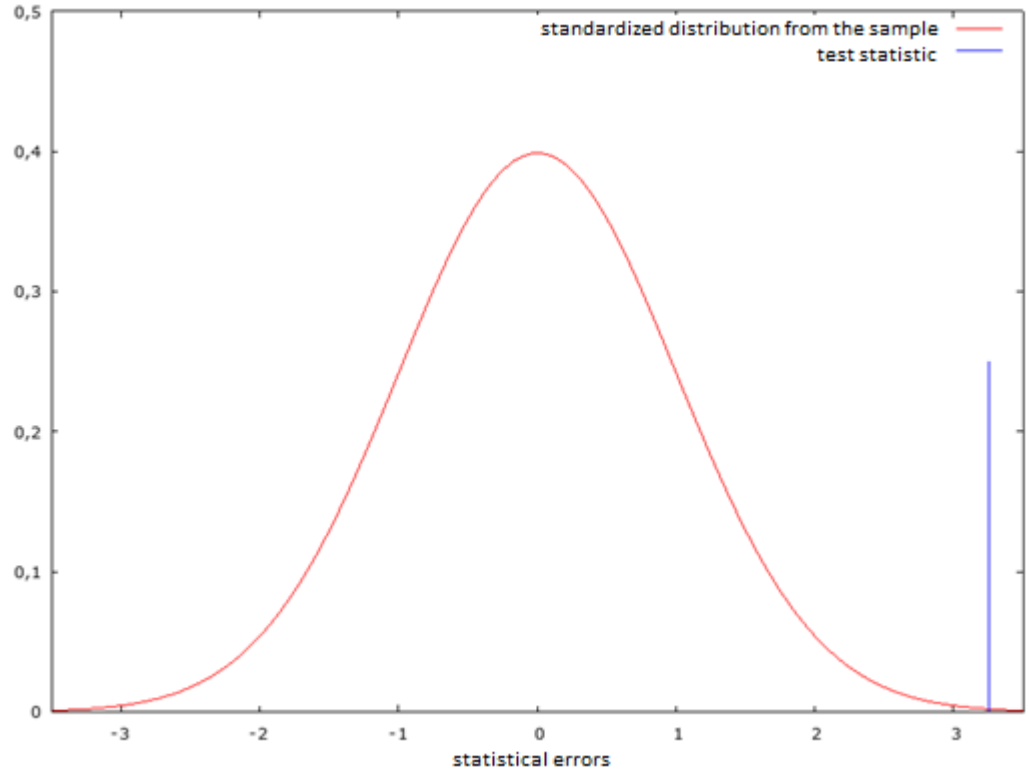

Figure 3. Density of the empirical distribution in the population of the surveyed enterprises (M = 33, N = 100).

The value of the test statistic for the structure index allows the rejection of the null hypothesis for the alternative hypothesis. Enterprises participating in the internationalization process constitute a significant percentage and it has been worth to carry out further research, regarding the characteristics of companies operating on foreign markets will be based therefore on a separate research sample for 47 entities that operate on such markets, which consists of 33 entities from a quantitative research and 14 entities from the qualitative study.

Firms oriented on foreign markets

The majority of the surveyed enterprises (N = 47) on the issue concerning activity on foreign markets indicated that their presence on such markets lasts more than 16 years, which accounts for nearly 47% of enterprises in this group. In addition, about 18% of enterprises operate on

foreign markets for a minimum of 13 years, and nearly 11% for a decade or so. Almost 15% operate on foreign markets for five to eight years. The smallest number of entities surveyed out of 47 enterprises operate abroad for no more than 4 years. In the range of three to four years, 7% of companies were recorded, and about 5% of enterprises operate on foreign markets for less than a year or at most two years. According to gathered information, firms choose the European markets, especially when their contact with the foreign markets does not last longer than 4 years. It can be noticed that over the years of presence on foreign markets, companies increase their number and expand their own business often for countries outside of Europe. The greater the number of years of operation of enterprises, the greater the number of countries in which the company operates. It can therefore be concluded that the degree of internationalization increases with the age of the enterprise. Outside Europe, the US market is most often chosen, but there are companies that have also decided to enter the markets of South America and Asia. The list of countries regarded as foreign markets entered by the surveyed companies (N = 47) has been introduced in Table 3. Entering the countries as the foreign markets resulted due to basic assumptions and objectives (Figure 4), which basically showed what made the companies to internationalize their functioning.

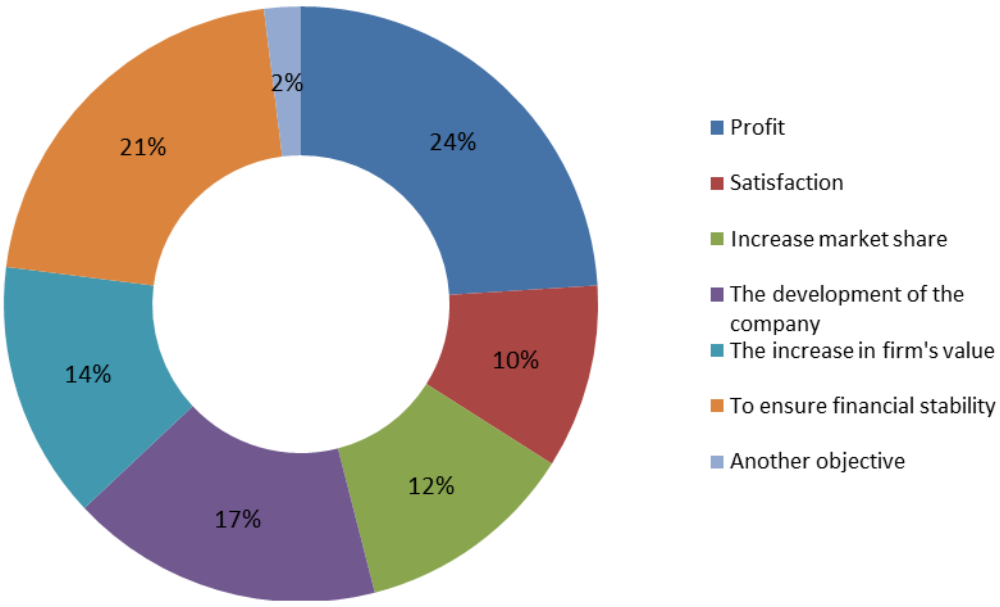

Figure 4. Motives for entering foreign markets of the surveyed enterprises (N = 47).

According to the data, the majority of firms indicated that the aim of gathering profit and ensuring the financial stability, as well as, the increase of company's value were mostly expected, which can be regarded as the need of self-development trough gathering more customers and the growth of sales. For a large number of surveyed enterprises, the motivation and need to develop the company's potential was an important motive for undertaking operations abroad. Bearing in mind the goals and motives of entering foreign markets, enterprises were asked about development directions, based on the assumption that operating

on these markets may affect the company's operation in the future. From the point of view of companies operating abroad, it is worth knowing the key issue of whether companies are aware of how their presence on foreign markets will affect the company itself, whether companies can and whether they expect specific results from operating on foreign markets in terms of their own development.

Table 3.
The countries in which the surveyed companies operate (N = 47)

Types of markets through the prism of the countries in which the firms operate (N = 47)						
Years of presence in the foreign market	1-2 years	3-4 years	5-8 years	9-12 years	13-16 years	More than 16 years
Number of Companies	2	3	7	5	8	22
European markets	Germany	Lithuania, Latvia, Estonia, Ukraine, Russia, Belarus, Austria, Czech Rep., Germany, Belgium	Germany, Czech Rep, France, Austria, Norway, Greece, Bulgaria, Spain, Italy, Sweden Romania, Italy	Island, Austria France, Germany, Netherlands,	France, Germany, Ukraine, Czech Rep., Slovakia, Austria, Slovenia Netherlands Russia, Bulgaria, Slovakia	Germany, Croatia, Bosnia-Herzegovina, Finland, Austria, France, Sweden Czech Rep., Great Britain, Belgium, Switzerland , Estonia, Spain, Italy, Macedonia, Netherlands, Portugal, Romania, Slovenia, Slovakia, Belarus, Luxembourg Russia, Lithuania, Hungary, Bulgaria, Denmark Ukraine
Asian markets	-	-	Hong Kong, Saudi Arabia Turkey	Japan	Saudi Arabia	Near East Turkey, China, India Pakistan Indonesia, Saudi Arabia
Other markets	USA	USA	USA	Argentyna, USA		USA, Canada, Chile Argentina, Australia

Note: Own work based on the study research.

The surveyed companies were asked to indicate more than one of the directions of development on foreign markets. The results are presented in Figure 5.

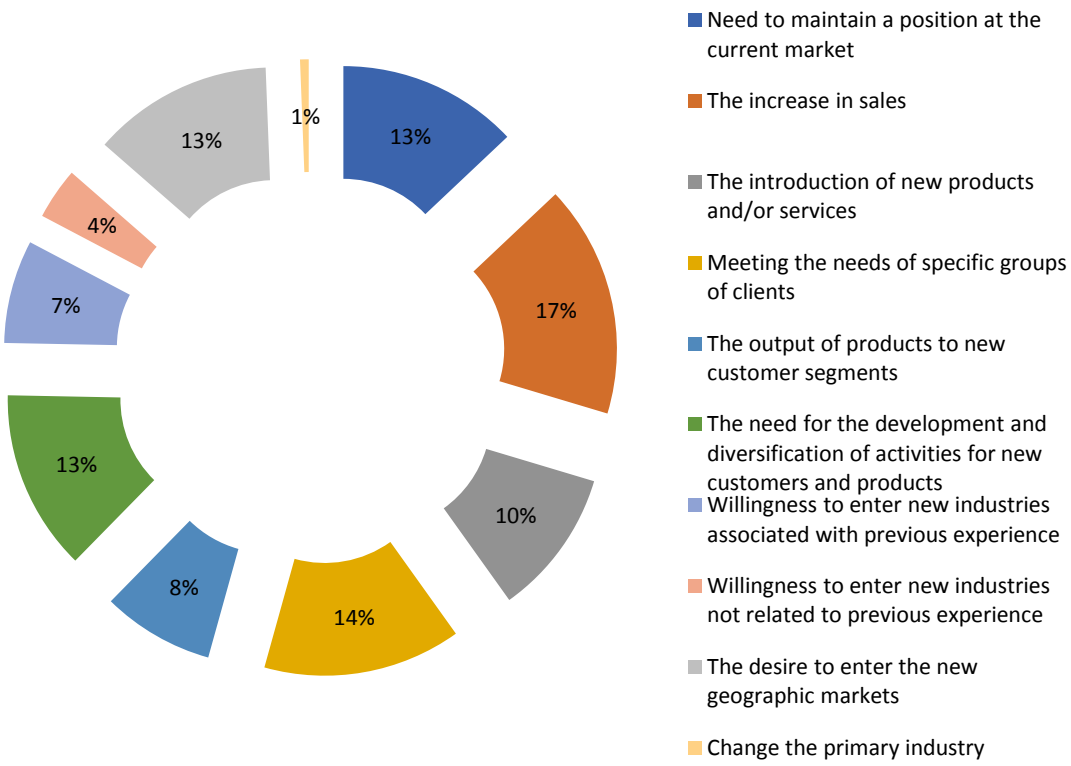

Figure 5. Directions of development in connection with the activity on foreign markets of the surveyed enterprises (N = 47).

The main directions indicated by the companies are primarily the need to maintain the position on the current market, the desire to enter and learn about new geographic markets, increase sales and referring to the need to diversify products and diversify activities due to new customer groups outside the home country. It was equally important to meet the needs of specific customer groups, which largely means that companies not only want to develop the company, also want to reach new customer groups and, for example, measure specific buyers with specific expectations, often forming so-called market niches. The specialization of products in terms of the market niche broadly complements the general need to develop and diversify into new products and new customers, and what's more, some entrepreneurs want to target their operations to completely new customer segments or expand their businesses to different industries based on their previous experience. Issues regarding the development of companies by entering foreign markets in fact confirm the drives of entering foreign markets. On the one hand, the surveyed enterprises pointed to the need to develop their activity towards increasing sales and acquiring new recipient groups, on the other they emphasized the willingness to profit and the need to increase their potential and company value, or the need to increase market share. Both motives and directions of development complement each other, which means that companies can be assumed they act to a large extent consciously and expect

tangible results from their presence on foreign markets. Justifying the choice of the market (Table 4).

Table 4.
The essence of the premises and justification for the selection of the foreign market in the opinion of the research sample companies (N = 47).

Justification for the choice of the foreign market					
	Number of surveyed companies in Silesian Voivodeship showing the essence of the conditions in the selection of the foreign market				
Condition	**The most important**	**Very important**	**An average importance**	**Negligible**	**Least significant**
Convenient location	8	-	-	4	-
The actions of competitors are easy to predict	4	-	-	-	-
Favourable conditions: rich resources, large market	19	2	1	1	-
Hardly intense competition	5	-	1	-	-
Environment stable, few variables	1	4	-	-	-
Cultural similarity	3	-	2	-	1
Customer demand and preferences are easy to forecast	4	3	1	1	-
Products and services old more slowly	-	-	2	-	-
Legal provisions are transparent and permanent	1	3	1	-	-
Political stability	2	1	2	1	-
Fast-paced technology	-	-	1	-	-
Slowly changing technology	1	2	-	1	-
Changes in the environment are easy to predict	-	1	-	1	2
Other reason:					
We manufacture high quality products				2	
Low transportation costs and no transport barriers				2	
High demand for products/services				6	
Attractiveness of the company, which has been noticed and better offer than competitors				5	
Ability to learn from others				2	

Note: Own work based on the study results.

The majority of enterprises indicated in the survey that a huge impact on the decisions had favorable conditions of the environment, such as the size of the market and available resources, as well as its stable and unchanging nature, which to a large extent also translates into another factor indicated by enterprises, which there is demand and customer expectations that are easy

to predict. Other equally important reasons for entrepreneurs oriented to foreign markets is a convenient location (although some companies stated that this premise is not significant) and competition is not very threatening and rather about predictable activity. Legal and political issues for a large part of the surveyed entrepreneurs were not a major problem or were not particularly important for the functioning of the surveyed companies, although some companies pointed out that the transparency and unchangeability of regulations on a given foreign market is important. The vast majority of the surveyed enterprises do not perceive cultural differences as a kind of barrier to operating on foreign markets, and rapidly changing technology is not a factor that has a significant impact on the choice of the market. The surveyed enterprises mostly operate on the markets of countries belonging to the European Union and there they see the most favorable conditions for running a business outside of Poland resulting from favorable environment conditions. Summing up the collected data, it can be observed that enterprises oriented on foreign markets are aware of their goals and development directions and that, basically entering foreign markets, they expect increase in revenues and increase of the company's potential and value, increase in market share, improvements own business climate, expanding the group of clients and ensure a better position on the market and maintain financial stability.

6. Conclusions

In the era of globalization of economies and advanced computer technologies, access to other markets is much easier, but requires proper preparation and knowledge. It is important to have the right resources, without which the companies can hardly meet the requirements of the international market. Today, precision, quality, flexibility, speed and creativity are important in the production, services and trade, and it requires the right infrastructure, qualified staff, funds for investments, efficient organization and proper culture. Enterprises should know how to use their resources, what others to look for and how to effectively manage them, to be able to recognize opportunities in the environment and gain the objectives. Entrepreneurs who have learned to recognize and skillfully use emerging opportunities and opportunities in the international environment have prospects for further development, multiplying profits and increasing the value of the company, and even achieving a competitive advantage. Therefore, the internationalization of enterprises is not so much a challenge today as the potentially enormous benefit and natural process of enterprise evolution taking place in the contemporary economic realities. In order for companies to be able to find themselves in these difficult and demanding conditions of the international environment, they must act based on the right choice of strategy. The research results showed that the Polish companies generally are aware of their expectations and know that foreign markets can give more chances for the development and

growth of the income, which have been regarded as the main drives of stepping into foreign markets. The empirical research allowed in the first place idntification of the level of internationalization and determination of motivations and reasons guided by the surveyed Polish enterprises in the Silesian Voivodeship in order to enter foreign markets. Comments and opinions of the surveyed companies regarding the above issues were important due to the need to verify how the closer and further environment may affect the functioning of enterprises and determine them to develop strategies for operating on foreign markets. The surveyed companies determined that the main purpose for extending operations to foreign markets was first and foremost the need, but also the desire to increase profits, gain new customers and provide the company with financial stability. Among the surveyed entities, many of them see opportunities for further development on foreign markets, acquiring knowledge and acquiring innovative technical and technological solutions. On the one hand, the internationalization process is the alternative for the majority of the surveyed companies to maintain their position on the market in the dynamically changing conditions of the business environment. On the other hand, it is a great chance to create the company's value, brand and reputation, it is a kind of stimulant to improve the structures and methods of organization management and implies the willingness to enrich knowledge and competencies that are important in the process of developing the entrepreneurial potential.

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SHAPING CUSTOMER RELATIONSHIPS AS A CRUCIAL ASPECT OF AN ORGANISATION'S STRATEGY

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Abstract: The role of marketing within an organisation increases along the development of the market and the increasing customer requirements. At present, companies face numerous challenges which they need to meet to achieve a market success. In the turbulent, highly competitive environment, they need to maintain high flexibility and develop a mechanism of rapid response to changes. The aim of this article is to demonstrate how important marketing is in the context of the organisation's strategy and how important decisions made within the framework of the strategic marketing are. Considering proposals for customer-oriented strategies, the need to consider such approaches as relationship marketing, service dominant logic and the concept of value co-creation with the customer have been demonstrated.

Keywords: strategic management, marketing strategies, relationship marketing, value co-creation

1. Theoretical aspects of the strategy

We can come across numerous definitions of the 'strategy'[1] term in the literature. To M. Porter, making choices is the essence of a strategy (Porter, 1996, p. 64). According to A.D. Chandler, a strategy is 'determination of long-term goals and objectives of an enterprise, adoption of courses of action and allocation of resources necessary for carrying out these goals' (Penc, 2005, p. 367; Chandler, 1972, p. 13). Characteristic features of a strategy, present in various concepts, primarily include long time horizon (from several to a dozen or more years), omnipresence (covering all the levels of the organisation and all the positions within it), focusing actions on a specific set of objectives, decision-making, and longer waiting for results. A strategy facilitates the decision-making process which, owing to the use of analytical tools, makes it possible to consolidate the knowledge of various entities. It is

[1] Other ways of defining the concept can be found in the works by: Mainardes, E.W., Ferreira, J.J., Raposo, M.L. (2014). Strategy and strategic management concepts: are recognized by the management students? *Business Administration and Management, 17, 1*; Zakrzewska-Bielawska, A. (2014). Ewolucja szkół strategii: przegląd głównych podejść i koncepcji. W R. Krupski (red.), Zarządzanie strategiczne. Rozwój koncepcji i metod. *Prace Naukowe Wałbrzyskiej Wyższej Szkoły Zarządzania i Przedsiębiorczości, 27*. Wałbrzych.

a coordination tool used for internal communication (primarily between the chief executive officer and all the employees of all levels). Its primary purpose is to select the main directions for company development, determine long-term objectives, and develop a competitive advantage to serve further development of the operations. Strategic planning may be considered as an opinion exchange, strategy implementation and result monitoring process. Setting ambitious goals within the framework of the strategy developed increases the motivation to work and the enthusiasm of members of the organisation as well as the recipients of its products. Those objectives should also be realistic to achieve within a specified time (Grant, 2016, p. 39-45).

Strategy formulation should be based on a strategic analysis of the environment and an analysis of the organisation's potential. Strategic analysis is to ensure profitability in a long-time perspective. Although it may be based on intuition, experience and creativity, its success primarily depends on market knowledge and consistence of market acquisition plans with the distribution, pricing and advertising policies being pursued. Prior to making decisions which are to determine the 'to be or not to be' of a company, one needs to analyse the current situation and discuss development directions as well as activity concentration based on the information collected. While a company has little impact on its macro-environment (it is the company that needs to identify changes arising in the macro-environment and to respond to them), it may be able to affect and control its competitive environment with appropriately selected tools. The elements which may be influenced to the most include suppliers, buyers, competitors, agents and the media (Budzik, i Zachorowska, 2016, p. 90-98; Smalec, 2012, p. 139-154). Strategy development process has been shown in Figure 1.

Within an organisation, the strategy is implemented at various levels of management; most frequently, this division covers three levels: the enterprise as a whole (global strategy), individual business areas (strategic business unit strategies), and individual functional areas (functional strategies). This article pays attention to one of the enterprise's functional strategies – the marketing strategy. The task of the marketing strategy is to systematically identify the needs of different target groups in order to offer them products and services which are more favourable than competitive ones. So, it combines both the strategy aimed at establishing the enterprise – the market relationship and the strategy aimed at market competition. Presently, the marketing strategy plays an extremely important role, and numerous companies select the directions of their future development mainly based on it (Janasz, 2010, p. 103-107; Frąckiewicz, Karwowski, Karwowski, i Rudawska, 2004, s. 69-72).

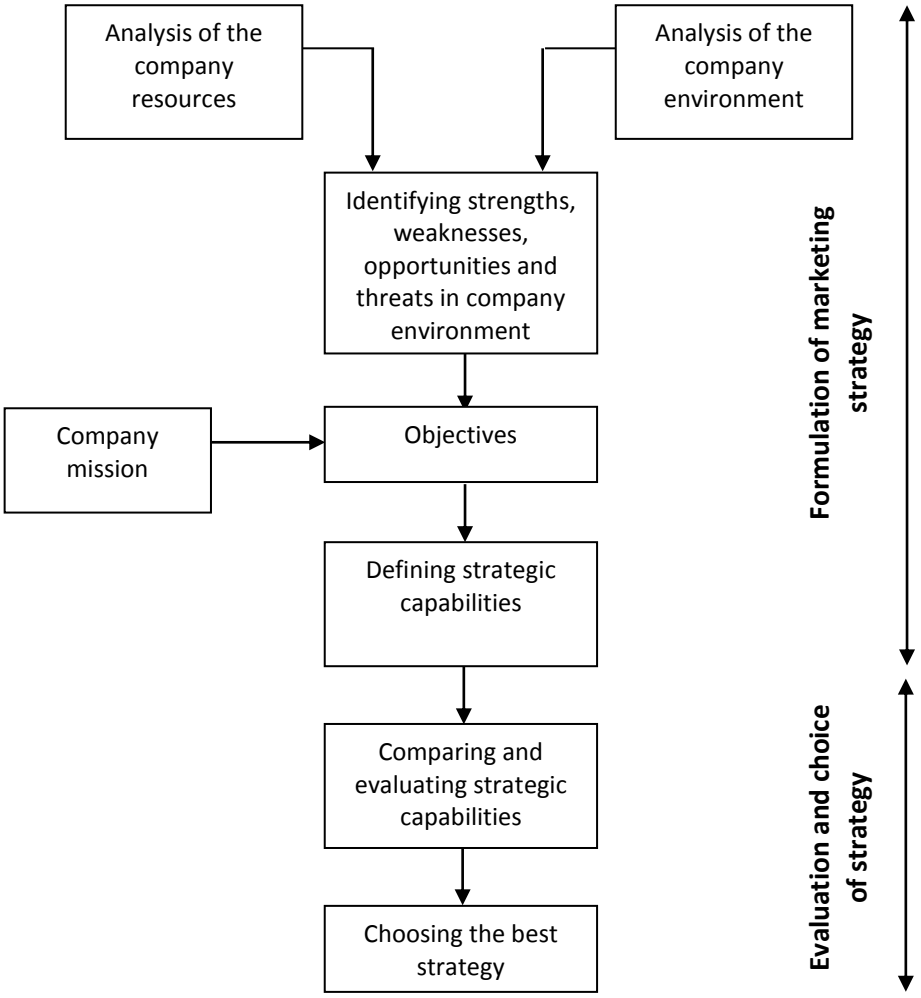

Figure 1. Strategy development process. Source: Frąckiewicz, Karwowski, Karwowski, i Rudawska, 2004, s. 76.

2. Impact of changes in the social environment on the organization's strategy

In today's world, organisations operate in an environment commonly referred to as stormy and turbulent. Market changes are multi-dimensional and affect economy and business, politics, technology and society. They are also more and more rapid, extensive and difficult to predict. A particular type of turbulence can be observed in the social sphere. It consists in individuals' (society members') increasing impact, or even pressure, on the operation of companies. Currently observable social changes include (Ignacy, i Wołczek, 2008, p. 18-25):

- increasing customers' requirements,
- new expectations towards enterprises (such as product and service individualisation),
- increasing customer's power,

– increasing importance of ethics and reputation (primarily manifesting themselves in the currently widely discussed literature on the corporate social responsibility concept[2]).

The changes result from the customers' increasing market awareness, the increased number of communication channels, and the ease and speed of information transfer. Today, one may even come across the 'customer market' phrase which is associated with the current excess supply. The situation puts consumers in a privileged position in relation to goods and services providers. Enterprises need to fight for the attention of buyers capable of choosing from among the goods and services offered by companies competing on a given market (Al.-Noorachi, 2013, p. 91-104).

Customer orientation is a feature on which a good strategy in the current market situation depends. The customer should be perceived as the enterprise's most valuable asset, as the financial result and, consequently, company surviving on the market and further developing depends on whether they decide to choose the products and the services the company offers. Given the foregoing comments, corporate strategy paying particular attention to the communication with customers appears to be of significant importance. Communication and finding the most effective methods of influencing customers and their purchase decisions are the basic marketing tasks.

3. Marketing position in strategic management

Originally, marketing covered issues related only to market exchange. In later years, when it was understood that the success of the company in a developed market economy depends on the customer, marketing gained a completely new function. The role of marketing was to integrate the activities undertaken and the decisions made to acquire and retain the largest possible number of customers. R. Niestrój interprets marketing management as a 'management method consisting in striving to accomplish one's own objectives by means of meeting the needs and desires of the exchange partners in the best possible way' (Niestrój, 2002, p. 16). Building customer relationships and 'creating value for the customer in exchange for profit' are indicated by P. Kotler, G. Armstrong, J. Saunders, and V. Wong (Kotler, Armstrong, Saunders, and Wong, 2002, p. 19). Marketing management objectives correspond to the company objectives, i.e. multiplication of the economic value (generation of profit), and the activities carried out are of long-term impact. All the aforementioned features indicate the strategic nature of marketing (Frąckiewicz, Karwowski, Karwowski, and Rudawska, 2004, p. 21-27; Nowacki, 2014, p. 11-14).

[2] The above changes have further been discussed in, inter alia, Crane, McWilliams, Matten, Moon, and Siegel, 2008; Garriga, and Mele, 2004, p. 51-71.

In the 1970s, strategic marketing was first defined as a 'form of marketing management arising from the adaptation of the market-oriented management to the strategic management requirements' (Niestrój, 2002, p. 12). Strategic marketing should deal with identification of risks, forecasting of upcoming events, and creation of alternative marketing strategies that would respond to the upcoming changes. It is an analysis-oriented process, and it covers the following issues (Lambin, 2001, p. 27-29):

- consumer and organisation need analysis based on which the target market may be identified and then segmented so as to best serve separate groups of customers of different expectations,
- business opportunity analysis, i.e. examination of the industry attractiveness, market potential and dynamics so as to identify what opportunities can be taken advantage of within the selected field of activity,
- competition analysis, primarily comparing the ability to meet buyers' needs, seeking competitive advantages and ways of taking advantage of them,
- demand forecasting and sale objective determination.

Strategic alignment of resources, organisation plans and the market is a fundamental prerequisite for the enterprise's market success. A marketing strategy should be tailored to the needs of the buyers constituting the market on which the enterprise operates, but it also needs to be embedded in the organisation's capabilities. Selection of the target market is a strategic decision that the organisation makes for the next few years. The market on which we want to operate and have adequate conditions to serve needs to be selected in a conscious manner. Then, it needs to be examined to identify its needs, desires, capabilities (including financial capabilities) and prospective buyers. There are two options to choose from: to enter an already existing market, or to try and create a completely new one. The decision may be facilitated with various tools; however, the most accurate picture can be obtained as a result of market research. The above research should be the starting point for any actions addressed at potential customers. Without knowing its customers and their needs, a company will not be able to appropriately select adequate instruments to influence potential buyers (Kotler, 1999, p. 52-53).

4. Customer orientation and relationship development

Fundamental importance of the customer in the strategy of an enterprise is indicated by numerous authors. As early as in 1954, P. Drucker wrote that 'creation of customers' was the only correct definition of a business objective (Drucker, 1994, p. 52-53). However, to acquire a customer, one needs to establish a relationship with them and to identify their needs. Given the dynamic market changes, an approach focused only on one-off transactions involving

a high number of customers was no longer sufficient enough for a company to develop. Relationship marketing, which started to develop in the 1980s, is a concept of maintaining long-term relationships with customers. Its essential purpose is to develop long-lasting relationships between the company and the customer that will result in benefits for both interested parties. Implementation of the approach within a company involves a lot of work (Nowacki, 2014, p. 11-19). The process of shaping customer relationships has been shown in Figure 2.

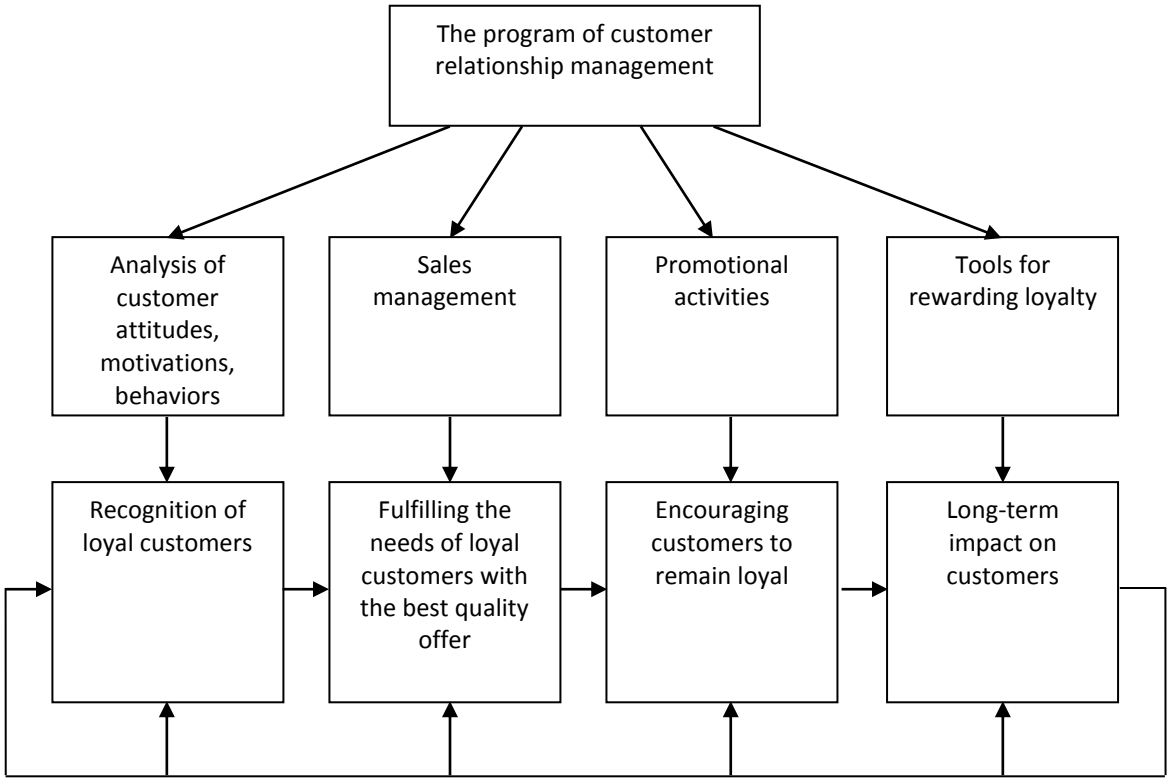

Figure 2. The process of shaping the relationship between the company and the customer. Source: Mazurek-Łopacińska, 2002, p. 163.

Developing strong relationships with customers may provide grounds for achieving a competitive advantage. Considering the customer as one of its most valuable resources, the company should strive to retain them. One of the aspects supporting the concept is the fact resulting from the economic calculation: the costs of new customer acquisition exceed the costs of retaining the current ones. In addition, the largest share in the company's income is largely obtained from loyal customers. Long-term customer relationships may only be developed on the basis of customer satisfaction and responding to needs. Relationship management is closely related to the concept of value co-creation, as it contributes to the identification of opinions, requirements, habits and other aspects affecting purchase decisions and attitude towards the company. Good relationships with customers affect their satisfaction and loyalty, which means greater profitability to the company (Chlipała, 2014, p. 11-19).

5. Co-creating value with the customer in the context of service dominant logic

Given the current market condition, the product itself, be it the most refined one, is no longer something that will meet the consumer's increasing requirements. Companies are applying more and more sophisticated strategies aimed at ensuring their customers' satisfaction. At present, the literature broadly discusses the problem of the service dominant logic (*SDL*) concept and the idea of involving the customer in value creation (Sagan, 2016, p. 253-262). This value is achieved through the use of the knowledge and skills possessed by both the organisation and its customers. The customer becomes a partner in the provision of services. Since services are defined in terms of benefits, they are created with the consumer who adapts them to their needs (Vargo, and Lusch, 2004, p. 1-17; Vargo, and Lusch, 2008, p. 1-10). The service dominant logic refers to both services and tangible goods manufactured (as tangible goods also provide the customer with services). Ch. Groonros describes the SDL concept as the company facilitating processes that support value creation by customers (Groonros, 2007). The production process becomes the beginning of the consumption process. Inviting customers to participate in that process makes it possible to simultaneously acquire them and learn their needs at the design stage, even before the product is marketed.

Not only do customers require more and more purchase and goods use accompanying services (inter alia, the delivery, the warranty, and the service), but they also more and more frequently want to be a part of the so-called *brand community*. Brand community may be defined as 'a specialised, non-geographically bound community, based on a structured set of social relationships among admirers of a brand' (Muniz, and O'Guinn, 2001, p. 412-432). This phenomenon is particularly evident in social networks where companies set up their profiles and have direct discussions with potential customers discussing their products. If well used, social networks may become a repository of knowledge of customers which may then be used to improve the products and services offered.

The value co-creation concept has recently been developed within both relationship marketing and strategic management. As the name suggests, value co-creation is a bilateral process. The value for the customer is created along the process of customer value creation for the company. By developing lasting relationships and gaining customer loyalty, and often acquiring their knowledge as well, we create a group of the most valuable audience – brand admirers actively participating in company processes. If passed on, customers' positive experiences help develop the company's reputation and expand its audience, which eventually provides the company with economic benefits (Baran, 2013, p. 159-167; Dobiegała-Korona, 2008, p. 335-341; Fisher, and Smith, 2011, p. 325-350).

6. Summary

In customer-oriented enterprises, marketing has become a dominant function. This action area should be paid particular attention to when developing a global strategy (for the enterprise as a whole). Marketing should integrate of all the company units around the most important aspect of its operation, namely the customer. Wishing to achieve a competitive advantage, an enterprise should follow trends followed by its customers. Therefore, it is extremely important to continually monitor buyers' preferences through developing lasting relationships with them. Companies should not focus on the stage of development of relationships with regular customers; they should go a step further towards the concept of co-creation, in particular that the current technological conditions (modern forms of communication) are extremely conducive to establishing such a dialogue. Customer involvement (from the very beginning) in the process of goods and services creation results in a significantly increased probability that the outcome will meet their needs. A customer involved in company processes and benefitting from the collaboration remains loyal for a longer period of time, which eventually translates into the organisation's success.

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BUSINESS INCUBATOR CENTER AS A LEARNING FACTORY AND TEACHING LABORATORY. CONCEPTUAL REFLECTION

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Abstract: The paper problem connected with two potential function of the incubator center (learning factory and teaching laboratory) and its analysis. The concept of the learning factory at Penn State was recognized by the National Science Foundation with a "Gordon Prize" for innovation in engineering education in 2006. Recently the use of learning factories has increased especially in Europe. Learning factories have many different models with one common goal. The goal is to enhance engineering education. Research has shown that learning by doing leads to greater retention and quicker mastery of the subject. Second very important function of the incubator center is learning factory. In USA this approach is use in engineering courses. Where they are realized in incubators they can be more effective in many fields especially practical. Students in incubator center can do hand-on experiments and gain practical industrial experience. This is very important in engineers education process.

Keywords: Business Incubator, innovations, students, entrepreneurship, industry.

1. Introduction

In 1994 the National Science Foundation (USA) awarded The Pennsylvania State University (Penn State) a grant to develop a "learning factory". This was the first time that the term, "learning factory" was used. The term "learning factory" refers to "interdisciplinary hands-on senior design project with strong links and interaction to industry". Penn State's learning factory is a hands-on learning facility for engineering students to be used in conjunction with the capstone design course and other courses (Learning factory, 2018).

Current engineering curriculum does not fully address the needs of industry. Industry requires engineers to not only understand scientific principles, but also to be able to apply them in real life applications. Most universities are already structuring their curriculums to provide students with more hands-on experience in multidisciplinary open-ended design, team work, communication skills, etc.

The objective of the paper is to analyze two function of Business Incubator Centre – learning factory and teaching laboratory.

The incubator center as a learning factory is concentrated on his role as teaching students to apply the knowledge. Students can in this way achieve experience in applying the theoretical knowledge in real manufacturing of the product. The incubator center as a teaching laboratory students working in multidisciplinary teams can learn real world situations and problems and gain experience in active learning process.

Methodology: the paper is based basically on secondary sources – the analysis of existing literature. Also we use case studies from incubator center especially Pennsylvania Penn State.

2. Business Incubator Center as a "Learning Factory"

The learning factory is also being used for student research projects and student clubs. It provides modern design prototyping and manufacturing facilities, including machining (CNC and manual), 3D printing, welding, metallurgy and CAD/CAM. Student design projects benefit industrial clients. The company from industry which sponsored the project interacts with students and faculty to help create world class engineers. This has made a significant difference for engineering education at Penn State. Since the establishment of the learning factory, students have completed 1800 projects for more than over 500 sponsors. Around approximately 800 students at Penn State-University Park have participated in the projects. Fig. 1 illustrates the scope of activity at the learning factory.

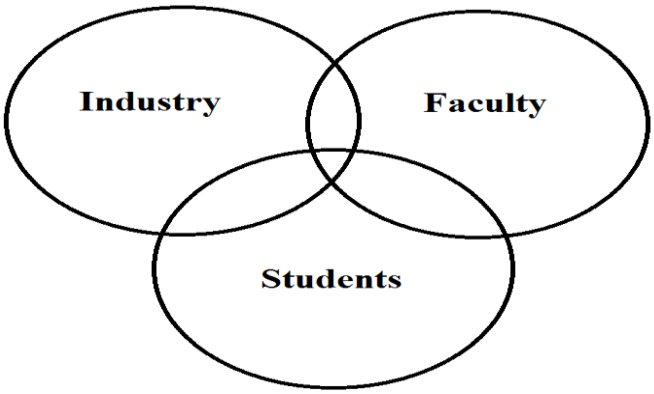

Figure 1. Scope of activity at the learning factory. Source. Author's own work.

Teams of engineering students are engaged in solving "real world" problems which are sponsored by industrial clients. Students are being challenged to apply the knowledge and skills acquired during their undergraduate education to solve engineering problems. The learning factory (Galbraith, and James, 2005; Gebramariam, et. al., 2004; Enhancing, 2017; Entrepreuners, 2017; Carbondale Technology, 2006) provides unique opportunities for industry

sponsors to partner with Penn State in order to help educate the next generation of world class engineers. This is being done by using modern facilities for designing, prototyping and fabrication. At the end of every semester, the learning factory is organizing a design showcase. During the showcase, students display their projects. Those projects are judged by a panel of industry experts comprised of current and past sponsors as well as members of the Industrial Advisory Board. Prizes are awarded for the best projects and best posters. The event is open to the public. It is usually attended by 600 students, faculty, sponsors and guests. Penn State Hazleton students do not have convenient access to the learning factory due to the 110 mile distance.

Therefore, the local business incubator center (CAN-BE) became a substitute for the learning factory. CAN-BE is located across the street from Penn State Hazleton. By working with client companies at the business incubator center, Penn State Hazleton students are getting a very similar experience like the Penn State-University Park students who are working with the learning factory. Table 1 illustrates the comparison of the student experience at the learning factory and the business incubator center. It is very clear that students who are doing projects for companies at the business incubator center get all the experience of the learning factory.

Therefore, the business incubator center can be successfully used as a substitute for the learning factory (Dublin, and Licht, 2005; Galbraith, and James, 2014, Gebramariam, et al., 2004; Enhancing, 2017; Entrepreneurs, 2016; Carbondale Technology, 2006).

Table 1.
Comparison of the student experience at the learning factory and the business incubator center

Objective	**Learning Factory**	**Business Incubator**
Interdisciplinary Projects	Yes	Yes
Hand on Projects	Yes	Yes
Modern Design and Prototyping	Yes	Yes
Connect Industry with Faculty	Yes	Yes
Understand Industry Needs	Yes	Yes
Work on Real-World Problems	Yes	Yes
Keep on Top of Latest Research	Yes	Yes
Engage in Student Learning	Yes	Yes
Pipeline for Future Employees	Yes	Yes
Link Theory and Practice	Yes	Yes
Enrich Classroom Experience	Yes	Yes
Increase Student Engagement	Yes	Yes
Identify Word Class Engineers	Yes	Yes
CNC and Manual Machining	Yes	Yes
3D Printing	Yes	Yes
Welding	Yes	Yes
Metrology	Yes	Yes

Source. Author's own work.

More and more engineering programs promote a hands-on training mode in order to better prepare students for their professional life. In the field of engineering, it is very important to provide every student with the opportunity to apply their theoretical knowledge and practice. Students need a place away from the lecture hall "to get their hands dirty". This is especially

important for students who are visual learners. Competency is not only theoretical knowledge. It includes the ability to apply theoretical knowledge to solve real world problems. There must be a connection between the knowledge and the ability for practical application of the knowledge.

The learning factory is teaching the students to apply the knowledge. Students are experiencing the designing and manufacturing of the product. They are also applying the theoretical knowledge in a real manufacturing situation and environment. Manufacturing industry has undergone a big change in recent years. Students need to be more rapidly introduced to these future methods. Learning factories are future oriented educational facilities.

Modern manufacturing technology requires employees at every level of hierarchy to be able to function and become self-organized in unknown situations. Employees need to be able to rapidly find creative solutions to a problem that they have never previously encountered. Traditional teaching methods do not address or develop those skills. Industry demands interdisciplinary training. It is important for engineering education to identify future job profiles and correlated to them competence requirements (Blanko, 2016; Brownlee, 2017; Business Incubator, 2017; Chamber News, 2017; Comprehensive, 2015; Cooperation, 1997; Davies, 2009; Michna, and Kmieciak, 2014; Grebski, and Wolniak, 2016; Wolniak, and Grebski. 2017; Wolniak, 2017, Dolińska-Weryńska, 2017).

The concept of the learning factory at Penn State was recognized by the National Science Foundation with a “Gordon Prize” for innovation in engineering education in 2006. Recently the use of learning factories has increased especially in Europe. Learning factories have many different models with one common goal. The goal is to enhance engineering education. Research has shown that learning by doing leads to greater retention and quicker mastery of the subject.

Learning factories are real industrial sites which provide students with experience in different phases of product creation. They also cover a wide variety of the learning environment. At the same time, learning can take place in the planning, realization and ramp-up phase, but also in the improvement of existing processes in factory environments.

3. Business Incubator Center as a Teaching Laboratory

Current engineering curriculum does not fully address the needs of industry. Industry requires engineers to not only understand scientific principles, but also to be able to apply them in real life applications. Most universities are already structuring their curriculums to provide students with more hands-on experience in multidisciplinary open-ended design, team work, communication skills, etc.

Ben Franklin said, "Tell me and I forget, teach me and I may remember, involve me and I will learn." Engineering education for the 21st century must be relevant to the life of students and the needs of society. New teaching and learning programs must reflect the real world component of engineering design problems.

Students must work on multidisciplinary teams to learn real world and gain experience in active learning. There is a tendency to bring different engineering majors together to provide students with common experiences in teaching the fundamentals of engineering, measurement and instrumentation, electronic and microprocessors, control, heat transfer, fluid mechanics, structures and materials, manufacturing and environmental engineering.

Common educational experiences force students from different engineering majors to see engineering from a big picture perspective rather than just by seeing the individual pieces of the puzzle. Most of the students appreciate the multidisciplinary approach which is easy to accomplish by crossing departmental boundaries (Carlson, and Sullivan, 1999; Feisell, and Rosa, 2005; Krzemień, and Wolniak, 2016; Wolniak, 2016; Ober, 2017; Olkiewicz, et. al, 2017; Olko, 2017; Kochmańska, 2017; Orbik, 2017).

It has been proven that active learning is more effective than the traditional "chalk and talk" lecture. The traditional lecture format is being replaced by student team interactive. In this kind of environment, students may engage and learn more in order to attract more high school students into engineering programs. Many colleges offer dual enrollment classes.

Those classes are usually offered to junior and senior level high school students. High school students and high school teachers participate in hands-on activities and learn about engineering in everyday life by designing and building solutions to meet the needs of society.

Engineers need to have skills that go beyond theory which can be developed only by laboratory experience. There are three different kinds of engineering laboratories which are developmental, research and education.

Engineering is a practical discipline. Before engineering schools were created, engineers were trained in apprenticeship programs. Early engineers have designed, analyzed and built their own inventions.

The first engineering school in the United States was the U.S. Military Academy at West Point. (Thaddeus Kosciuszko was one of the founders of the U.S. Military Academy at West Point). The military academy model was designed, so that theory and practice could blend together. In the middle of the 19th century, many civilian engineering schools were established, for example, Cornell (1830), Union College (1845), Yale (1852), MIT (1865) and others.

Those early engineering program were very practical and application oriented. Those programs were training civil and mechanical engineers to build bridges, railroads, canals, water pumps, mining equipment, etc. Then chemical processing plants as well as the telegraph started to develop.

Those early engineering programs had significant laboratory components as well as cooperation with industry where students were getting practical experience. After World War

II (WW II), there was a period of great prosperity with many inventions based on the technology developed during WW II.

The automobile industry was booming. There was a need for a more modern highway system and new methods of communication. At the same time, commercial airlines were getting established. At that point, the engineering curriculum was being criticized for being too practical and not theoretical enough.

It was suggested that the engineering profession should be more focused on scientific research rather than routine design. In the mid-sixties, President John F. Kennedy revealed his plan of traveling to the moon. Many people were inspired and there was a significant growth in the number of students pursuing engineering degrees.

This was an era of emphasis on science and engineering. Academic laboratories gave way to scientific subjects. This trend continued until the 1970's. After reaching the goal of traveling to the moon, the emphasis on science and engineering decreased.

Many engineering programs were underinvested and started cutting back on the laboratory component of the curriculum. The laboratory part is normally the more expensive part of the education budget. Many engineering schools graduated engineers who were advanced in theory but poor in practice.

While engineering programs were getting more theoretical, there was a growing demand in industry for practical-trained engineering professionals. Many schools created Engineering Technology programs. These programs were application-focused engineering. Many engineering technology graduates filled positions which were previously held by engineers. Until the present time, both programs engineering and engineering technology are offered simultaneously at most institutions. There is a significant overlap between those two programs.

In engineering education, there were no clearly defined educational objectives. This was especially true in laboratory courses. Without cohesive educational objectives, the laboratory courses were disjointed. Even though those courses were part of the curriculum, the outcomes were far from the expectations of industry.

The situation has changed for the better with new accreditation criteria. (Engineering criteria, 2000) The educational objectives for engineering programs as well as the educational objectives for all of the courses is required by the Accreditation Board for Engineering Technology (ABET). Many schools were trying to accomplish the laboratory requirements of the curriculum by computer simulation.

Most educators, however, agree that computer simulation cannot entirely replace hands-on experiments as well as practical industrial experience. Presently the rapid development of online programs, there is a tendency to replace some of the laboratory courses with online experience.

Educators' opinions on that issue are divided (Sevilla, 2015; Greater Hazelton, 2017; Kyaga, et al., 2011; Lose, and Tenegh, 2015; Maclure, 2011; Owen, 2004; Pnesylvania Business 2017; Percent 2012). The Engineering program at Penn State Hazleton is trying to

accomplish some of the laboratory components of the curriculum by its cooperation with the CAN-BE business incubator center. Table 2 shows the educational objectives of the curriculum at Penn State Hazleton.

Table 2.
Educational objectives of the laboratory courses at Penn State Hazleton

Educational Objectives	Traditional Engineering Laboratories	CAN-BE Business Incubator Center
Instrumentation	Very Effective	Effective
Modeling	Very Effective	Effective
Experiment	Very Effective	Effective
Data Analysis	Very Effective	Very Effective
Design	Effective	Very Effective
Learn from Failure	Effective	Very Effective
Creativity	Effective	Very Effective
Psychomotor	Effective	Very Effective
Safety	Effective	Very Effective
Communication	Effective	Very Effective
Teamwork	Effective	Very Effective
Ethics in the Laboratory	Effective	Very Effective

Source: Autor's own work.

It demonstrates the comparison between the levels of obtaining individual educational objectives using the traditional on-campus laboratory versus providing students with hands-on experiences at the business incubator center. The comparison seems to be in favor of hands-on experience at the business incubator center.

4. Conclusion

The concept of using Incubator center as a learning factory was used in Penn State as a very good kind of organization and scope of incubator. It was awarded by National Science Foundation for innovation in engineering education on 2006. Now in many incubator centers this approach is used especially in Europe. Learning factories are real industrial sites which can provide students with experience about creating of new products. It can be useful in teaching processes and also can boost innovativeness among the students and in the region. Research has shown that learning by doing leads to greater retention and quicker mastery of the subject.

Second very important function of the incubator center is teaching laboratory. In USA this approach is use in engineering courses. Where they are realized in incubators they can be more effective in many fields especially practical. Students in incubator center can do hand-on experiments and gain practical industrial experience. This is very important in engineers education process.

The main difference between learning laboratory and teaching factory concept is that in the first concept the incubator center imitate real industry experiences and in the second rather is used as a place of teaching in the industrial and business courses.

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A CONSCIOUS ORGANISATION – ASSUMPTIONS, THEORETICAL MODEL AND IMPLICATIONS FOR MANAGEMENT PRACTICE

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Abstract: The article presents the author's concept of a conscious organisation being a response to the changes in the underlying management paradigms and the author's extensive experience in the management area. The paper presents assumptions and the context of the conscious organisation concept origins, its theoretical model and implications for the management practice. The approach presented is based on a holistic underlying paradigm; consequently, it is of interdisciplinary nature. It combines observations and conclusions from the management area, psychology, sociology, quantum physics and philosophy. It appears that in the era of transformational changes and inadequacy of current paradigms in many areas of science, it may be the right, be it revolutionary, direction for the management theory and practice.

Keywords: conscious organisation, hidden order, holism in management.

1. Introduction

Over the years, there have been numerous management theories and concepts. All of them, while adopting a specific perspective, attempt to order elements and relations between the elements within an organisation. However, it appears that they do not provide a sufficient answer to the phenomena occurring within organisations, nor do they provide fully effective and easy-to-use practical solutions.

This paper presents the concept of a conscious organisation as an alternative to contemporary management theory and practice. The paper presents assumptions and the context of the conscious organisation concept origins, its theoretical model and implications for the management practice, and it refers to practical implications associated with the implementation of the concept in contemporary organisations.

2. Assumptions and the context of the conscious organisation concept origins

All management theories, similarly to any scientific theories, are developed based on paradigms. However, in the fundamentally changing reality, not only business reality, current paradigms simply cease to apply[1]. More than thirty years ago Koźminski pointed out that the current accumulation of management knowledge was subject to '*distortion due to the inadequacy of the claims made in different languages and conventions, and based on the data collected with various incomparable methods with a view to different effects in very different situational contexts*' (Koźmiński, 1983, p. 8). Kostera notes that science should be multiparadigmatic (Kostera, 2014, p. 14). So writes Sułkowski, noting that social sciences are witnessing '*a radical change leading to yet another dethronement of man by science*' (Kostera, 2014, p. 14). This is also confirmed by Grudzewski and Hejduk who note that management sciences feature an evident crisis that stems from the inadequacy of the current theories and paradigms to reality (Grudzewski, Hejduk, Sankowska, and Wańtuchowicz, 2010, p. 19). So write Bauman et al (Bauman, Bauman, Kociatkiewicz, and Kostera, 2018). A significant number of researchers and practitioners, not only specialising in management, are currently drawing similar conclusions.

However, as long as management knowledge is mainly based on social sciences, humanities and, possibly, technical sciences, leaving out exact and natural sciences, one may observe that so formulated assumptions and theories are mostly incapable of correctly and precisely reflecting reality.

It appears that a change of the point of view which allows to formulate paradigms adequate to reality (and thus scientific theories and models as well) involves recognition of the primacy of quantum physics, holism and theory of probability over Newtonian physics, reductionism and certainty[2]. Development of scientific theories based on the assumptions of Newtonian classical physics (and the paradigm of separate elements) simply ceases to be in line with reality (Grudzewski, Hejduk, Sankowska, and Wańtuchowicz, 2010, p. 19). Quantum physics, treating the world and all its objects (organisations and its employees as well) as a smooth and continuous wholeness, is the missing link. It regards all the scientific disciplines, social sciences

[1] A comprehensive study on the changes in the underlying paradigms (animism, polytheism, monotheism, deism, Darwinism, neo-Darwinism, holism) – please refer to, e.g., Lipton, and Bhaerman, 2012, p. 114 et seq.

[2] As Lipton and Bhaerman write: ... *The adoption of quantum physics does not negate Newtonian physics so much as it demonstrates it only pertains to certain specific cases. In other words, quantum physics is a broader field of knowledge that covers all the information Newtonian physics provides, and it significantly expands it. As a result, quantum physics explains both what is already known and the entire realm of previously unrecognised forces affecting the course of the universe.* In Lipton, and Bhaerman, 2012, p. 168. Originally, quantum physics theories only applied to phenomena occurring in the microworld. However, modern scientific discoveries support the application of this theory to explain and solve problems difficult to describe and solve at the macro-level as well, because macro-objects also consist of a micro-structures (the so-called fractals). It appears that the adoption of a paradigm based on quantum physics, not on classical physics, has significant implications for virtually any aspect of life and scientific discipline.

and management science as well. In this context, it is difficult to properly discuss organisations and efficiently deal with the contemporary challenges of management, separating the discipline from discoveries and accomplishments in other fields and disciplines of science, which has usually been the case so far.

The need to have a different perspective on the organisation in order to explain the actual reasons for the phenomena occurring in it was already confirmed many years ago by Gareth Morgan in his paper; he wrote about a metaphor of movement and transformation, and the so-called 'unfolding logics of change' (Morgan, 1997, p. 273).

Morgan's metaphor is based on David Bohm's theory (Bohm, 1988). According to it, the universe should be interpreted as a smooth and continuous wholeness, and the state of the universe at any point of time reflects a more hidden reality (the so-called *hidden order*). Apart from the hidden order, there is the so-called *unfolded order* that manifests itself in physical reality and expresses the possibilities inherent in the former. According to D. Bohm, understanding the mysteries of the universe is only possible if one understands the underlying processes that bring together the two orders: the hidden order, and the unfolded one[3]. So, if an organisation is one of the 'objects' manifesting themselves in reality, it is subject to the same laws as any other objects in the universe, meaning that the hidden order pertains to it as well.

The hidden order has the features of a creative process. In his concept, Bohm postulated that from one moment to another the world remained in an interrupted and variable cycle of folding and unfolding itself. It was a pulsating wholeness, but the hidden order decided what was to be revealed. The hidden order theory has significant implications for organisation management; in order to correctly understand the mechanisms according to which the organisation functions, one needs to understand the underlying (generative) processes bringing together the two orders: the hidden order, and the unfolded one. Meanwhile, modern management science primarily focuses on studying and understanding relationships within the unfolded order. Although it allows to recognise the surface causal laws, it does not allow to discover the fundamental and extremely important wholeness related laws embedded in the hidden order. In order to discover those laws, one needs to understand the movement, the flow and the change that make the actual reality manifest itself in a specific manner (Bohm, 1988, p. 273).

Based on the metaphor of movement and transformation, **a key premise of the conscious organisation concept is the concept of the natural order of the world (environment) and its variability in the hidden order. It is the basis for any change** (Zarębska, 2012. p. 9).

[3] In the management area, more and more authors begin to recognise the importance of the concept to management theory and practice. Please refer to, e.g., Rupik, 2004, p. 87 et seq. (hidden order and researching enterprise's strategic orientation); Perechuda, 1999, p. 397-401.

3. Conscious organisation – definition and theoretical model

First, the term '**conscious**' needs to be defined. The Polish Language Dictionary defines this concept as: *1. aware of something; 2. well versed in their field and taking informed decisions and actions; 3. planned, purposeful* (https://sjp.pwn.pl/…). The glossary of psychological terms uses this concept to refer to a man who *is aware of their own characteristics, states, needs, activities, and their place in the world* (http://www.psychologia.net.pl/…). In this perspective, conscious activities relate to the process during which one's attention is focused on the act of consciousness.

*'***Consciousness***'* itself*, on the other hand,* is defined as *experiencing perception, thoughts and feelings; mindfulness. Save for conceptual categories impossible to perceive, it is extremely difficult to define what the concept of consciousness actually means... Nothing worth reading has been written on this subject* (Stuherland, 1996). This observation is confirmed by Renesch who quotes *Behavioral Brain Sciences* Journal: *If consciousness is defined and explained as it is understood, it cannot be defined properly* (Renesch, 1999, 2012). And futurist Peter Russell notes that *the greatest difficulty in defining consciousness is the word itself. There is no right noun as consciousness does not exist as a 'thing'. Consequently, it is not a thing which can be defined; it is perception itself* (https://www.peterrussell.com/…). Defining the concept of '*consciousness*' seems to be pointless[4]. In this context, one may only compare consciousness to the state of absolute truth, with no filters and perceptual, emotional and mental distortions. That is why the so-called '**self-consciousness**' is referred to. In this perspective, it pertains to the state of being conscious, but at a certain level of individual perception.

Given the multidimensional cross-section of the definition, one may say that **a conscious organisation is a combination of a new type of organisation and people with a certain level of self-consciousness, which allows proper collection of information from inside the organisation and its environment as well as adequate reaction, in accordance with the principles of the hidden order**. Graphically, the conscious organisation model has been shown in Fig. 1.

[4] Comprehensive explanations on the subject matter in, e.g., Zlatev, 2018.

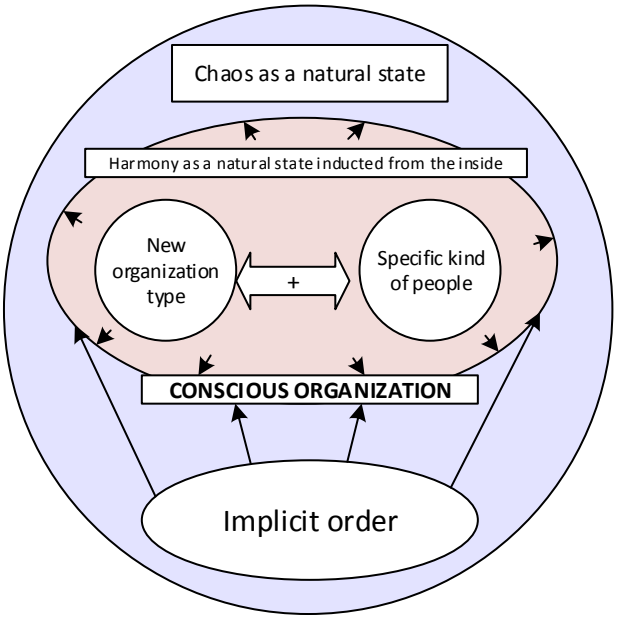

Figure 1. Conscious organisation model. Source: author's own study.

Several discriminants of a conscious organisation may be indicated (Zarębska, 2012. p. 9). Firstly, conscious organisations are assumed to be effective because they apply some rules of operation that are consistent with the environment; they are not against it. This, in turn, requires specific structural solutions. Another feature, resulting from the previous two, is high innovativeness. Without it, organisations are not able to develop in such a changing environment which they still perceive as friendly. And they operate in harmony with the environment, which means that they can spontaneously undertake changes although, given the continuity of the transformations, one may say that they are more evolutionary than revolutionary. Conscious organisations can also perfectly combine profitability with ethical action. The last but not least important discriminant of conscious organisations is the well developed leadership and employee development, not only in the professional, but also in the emotional, mental and spiritual sphere. Detailed characteristics of a conscious organisation have been shown in Table 1.

Table 1.
Conscious organisation discriminants

New type organisation area	Characteristics
Strategies (and objectives)	• Not based on rivalry (blue ocean strategy instead of red ocean strategy (Kim, Mauborgne, 2005)). • Focused on higher and moral values, corporate social responsibility as a belief, not a marketing activity aimed at reinforcing the image. • Oriented at offering the society more than just products / services. • Objectives fully correlated with organisational values and innovative. • Increase in value implicated by the internal consistency with the values set for the benefit of the whole society, acting in accordance with the so-called 'hidden order' principles.

Systems and processes	• Proper feedback to responsible persons, enabling early intervention. • Allowing for the hidden order principles. • Simplified procedures. • Transparent system solutions.
Organisational structure	• Working in task forces. • Flexible, agile, sometimes (although not necessarily) virtualised structure. • Everyone at the right place in the system (in accordance with the hidden order principles). • Holocracy[5] and holarchy[6], and absence of rigidly fixed boundaries.
Leadership and management style	• Transcendental (auxiliary) leadership (Bombała, 2014; Penc, 2010). • Shifting from action correction to mental changes in humans (thought patterns, beliefs). • The mystique of management.[7] • Questioning assumptions and beliefs as a basis for learning and increasing self-consciousness. • Level 6, 7 or 8 managers[8].
Value (corporate culture)	• Respect the rules and respect for the hidden order. • Holism and balance in operation. • Inner and outer harmony despite operation in apparent chaos. • Openness and respect for cultural, religious, gender and other types of diversity (Herman, Oleksyn, and Stańczyk, 2016). • A sense of abundance in life. • Cooperation instead of competition (Gobilott, 2008). • Full responsibility for oneself (spiritual maturity) and professionalism. • Readiness to share knowledge and confidence. • High level of innovativeness of thinking and action.
People	• Highly self-conscious employees (5-8[9]) oriented at their spirituality as much as at their mental and emotional development. • Specific (often unconventional and based on non-logical assumptions) forms and the methods of employee selection (e.g. energy and psychological profiles[10] instead of traditional personality tests). • High level of identification of people with organisational values (convergence of individual and system values).
Skills	• An organisation primarily develops through the development of its managers' and employees' self-consciousness. • Specific (often unconventional and based on non-logical assumptions) forms and the methods of employee selection (e.g. system settings for the organization (Stam, 2010), work with unconscious beliefs and behaviour patters [11], etc.). • The organisation develops through activities induced from the inside (ability to continually transform in the field of beliefs and thought patters while preserving the sense of purpose and direction).

Source: author's own study.

[5] Holocracy is an organisation management system in which power and decision-making, instead of being imposed top-down, are divided according to the fractal holarchy of self-managing groups; https://www.governica.com/…

[6] Holarchy is made up of autonomous and independent holons (from the Greek word *holos* meaning 'wholeness') or units; however, being part of a greater whole, they depend on it. Thus, holarchy is a hierarchy of self-regulating holons which function as both an intependent whole and dependent parts. Please refer to, e.g., Wilber, 2006.

[7] For more, please refer to, e.g., Kets de Vries, 2008.

[8] Please refer to the further part of this article.

[9] Please refer to the further part of this article.

[10] A psychological and energy profile covers: full energy characteristics of man and resulting diagnostics of energy patterns translating into specific unconscious human activities, resources, capabilities and innate skills as well as special talents, relational predispositions and group behaviours, diagnostics of the development path, the preferred cognitive style, anxiety patterns, patterns of aggression, emotiveness and many other characteristics of human personality. In addition, the survey excludes subjective influence of the person surveyed. Please refer to, e.g., https://www.humandesignamerica.com/; in Poland: https://architekturaosobowosci.wordpress.com/home/.

[11] Work with unconscious patterns has been covered by, inter alia, the entire cognitive psychology, including Gestalt, and psychoanalysis. The work with unconscious patterns and beliefs has been covered [in:], inter alia, Hawkins, 2010, 2012, 2013.

A conscious organisation needs people with a certain level of self-consciousness based on morality and an internal system of values. In psychological terms, this is directly related to the personal source of moral influence[12], as shown in Table 2.

Table 2.
Human self-consciousness levels

Level	Source of moral influence	Span / Scope of impact
1	Ego-I	Extreme self-centredness, focus only on oneself.
2	Ego-family	Leadership focused exclusively on next of kin – family. Blood ties. Based on providing the family with necessary means to survive at the expense of non-members.
3	Ego-clan	Leadership model based on the domination model and the application of the 'law of the jungle', or the 'he who is not with us is against us' rule. Regards association with larger social groups.
4	Ethno-nation	Leadership based on a hierarchical order, values and measurable standards, rules and authority.
5	Context – sector	Leadership based on knowledge and contacts. The power of the organisation's individual success, performance and competence within a specific sector.
6	Context – society	Leadership based on people. Development of justice, ethical and moral principles, social responsibility, social equality and tolerance within the social system.
7	System	Transcendental leadership. Multi-threaded perspective of the world in the context of complex systems, not only social ones.
8	Super system	Mystical leadership. The world and the universe as a whole, evolutionary relationship of everything with everything.

Source: author's own study based on Wilber, 2000, 2009.

Sobczak writes that (Sobczak, 2004) self-consciousness allows proper identification of values underlying the decision-making and the action-taking. On the other hand, with respect to self-consciousness, valuation serves an integrating function. The mechanism of referring the current content of self-consciousness to the standards of conduct, followed by evaluation of differences between them, motivates a person to reduce this condition[13]. This may be accomplished in two ways. The first one is to escape self-consciousness to disrupt the hardly comfortable mental state resulting from a failure to meet one's own expectations or a betrayal of something very important to oneself (repression[14]). The second one involves modification of one's behaviour that is adequate to the preferred value. Striving to maintain a positive image of oneself motivates a person to act in accordance with their own values. Thus, persons with a higher level of self-consciousness, in conditions identifying self-consciousness (in conditions

[12] Please refer to moral reasoning development stages according to James Rest [in:] Czyżowska, Epa, Dudek, Siwek, and Gierowski, 2013, p. 116-123.

[13] The mechanism has been comprehensively described by the cognitive dissonance theory. Please refer to Festinger, 2007.

[14] It is one of human defense mechanisms. It consists in repelling thoughts, feelings, memories, impulses, fantasies, desires, etc. that evoke painful associations or otherwise threaten the cohesion of an individual's personality (for example, they provoke questions about morality, evoke a sense of guilt, etc..). Repression takes place when the satisfaction of a desire (associated with pleasure) may result in displeasure due to other requirements. The thoughts repelled continue to exist, but they are not available to consciousness. Repression is not a one-off process, and it requires uninterrupted energy input. Defense mechanisms have been studied in detail [in:], inter alia, Freud, 2011.

being a challenge, in a situation outside the comfort zone), function in a more integrated manner (they are more consistent in what they say, think and do)[15]. In the context of the foregoing description, increased self-consciousness may be referred to with respect to levels 5 through 8.

The foregoing classification is consistent with a self-consciousness typology that is less developed and less frequently applied in psychology but associated with a different way of processing information about oneself: personal, defensive, external and reflective (Zaborowski, 1998) self-consciousness. Depending on the type of self-consciousness, one perceives and prefers values in a different manner.

People with personal consciousness are more egocentric; they encode and process information about themselves, their personal plans, objectives, challenges and problems based on the individual's auto-patterns, memory and personal imagination.

In terms of egocentrism intensity, defensive (aversive) self-consciousness is similar. However, unlike the former, this type of people internalises values 'under duress', feeling threatened, in a barely conscious manner; consequently, in situations involving realisation of values, they demonstrate some rigidity and focus on rules more than on people. Still, processing information about oneself involves some negative emotions: a sense of danger, fear and anxiety (which results in a distortion or repression of the self-consciousness content). The functioning of a person featuring defensive self-awareness is characterised by strong defense mechanisms, low creativity and rigidity of thinking.

Behaviours of people experiencing values in the sphere of external self-consciousness are not very intense, but relatively long-lasting. This is related to the encoding and processing of information in the possibly most objective manner. A person with this type of self-consciousness further specifies themself with respect to the external context: norms, standards, social requirements or values. They focus on their own attitudes towards others and the environment, the impact of the external environment, and the interactions between them and the environment.

On the other hand, people with a reflective self-consciousness make an effort to cognitively work and justify the value. This is the highest form of self-consciousness, facilitating moral and social maturity, and self-realisation. This type of people operates on the basis of internalised values and norms, models and personal standards. Zaborowski writes (Zaborowski, 2000) that it allows to maintain a constructive identity and, on the other hand, generates progressive changes in personality.

With regard to the levels of self-consciousness shown in Table 3.

[15] This is proven by numerous psychological experiments. Please refer to Aronson, Wilson, and Akert, 2006; Cialdini, Kenrick, and Neuberg, 2002.

Table 3.

Self-consciousness levels vs. self-consciousness types

Self-consciousness type	Human self-consciousness level
Personal self-consciousness	Ego-I (level 1)
Defensive self-consciousness	Ego-family (level 2); Ego-clan (level 3) Ethno-nation (level 4)
External self-consciousness	Context – sector (level 5); Context – society (level 6)
Reflective self-consciousness	System (level 7) Super system (level 8)

Source: author's own study.

In this context, selection of the right people for the conscious organisation becomes particularly important[16]. They are able to create or work in a new business reality that is not based on aggression and rivalry, but on cooperation.

4. Conscious organisation – implications for management practice

From a practical point of view, one cannot solve problems while remaining at the level of consciousness at which they were when the problems arose. Achieving a specific level of consciousness is not a matter of age, education, position or intelligence quotient, but a matter of openness to experience and the critical thinking ability. It does not come from external situations; it results from an inner strength associated with learning the truth about oneself and the surrounding reality, and thus the actual harmony with oneself and the environment.

Creating conscious organisations means developing conscious leaders[17]. However, it is wrong to believe that as a minority within an organisation they will be able to create or develop the idea of the organisation's self-consciousness. In many cases, a large gap between the level of self-consciousness of leaders and employees leads to the opposite state, i.e. a mutual sense of dissatisfaction and demotivation. **The role of self-conscious leaders should be to create the right organisational solutions** (including structures and processes), **not self-conscious employees within a traditional organisation. This means that conscious organisations need a specific type of people** who, because of functioning in a conducive environment, will develop their potential and thus improve the efficiency of the entire organisation.

A conscious organisation needs people with reflective and external self-consciousness, with the former having particular importance in the case of person fundamental to the organization (Kets de Vries, 2001). Then, according to the postulate that you cannot solve problems while remaining at the level of consciousness at which the problems arose, constructive action is possible.

[16] To do so, one may apply research techniques and tools used to measure the subject's self-consciousness. Please refer to, e.g. Zaborowski's Self-Consciousness Scale [in:] Zaborowski, 1989 or e.g. Lewicka, 2002.

[17] An interesting study of the problem has been provided for [in:] Jeznak, 2017.

Another important practical issue is the fact that the state of chaos is the natural environment of a conscious organisation. It is an attribute of the so-called dynamic systems which appear to act randomly but, as Lorenz has proven, even they are ordered and predictable if the detailedness (resolution) of the data describing the environment is sufficient[18]. Thus, 'chaos' ceases to be chaos when actual patterns of the course of events are known[19]. The hidden order is responsible for that.

With respect to organisations, apparently random and unrelated events inside and outside the organisation are not random but chaotic: they hide a certain regularity. Its recognition is fundamental to the correct identification of cause and effect patterns and, consequently, correct learning and development.

That is why awareness of the order hidden within an organisation leads to another question about the logics of change and the principles according to which the hidden order functions. As organisations as social systems, it appears that the hidden order should be sought in the areas which psychology has long recognised as the unconscious source of what manifests itself in reality. In this context, one may refer to the so-called collective unconsciousness[20] (which covers collective behavioural patterns) and the collective consciousness[21] (a regulating and remedial force that supports an uninterrupted growth and development of a system in accordance with the hidden order principles)[22].

Within an organisation, the hidden order is based on several basic principles (Stam, 2010, p. 17; Gunthard, 2004, p. 120-150):

1. Everyone has the same right to a place within the organisation.
2. There is a certain correct order, a hierarchy of positions within the organisation.
3. The right to belong to the organisation is earned through contribution.
4. Those excluded from the organisation need to be included in the system (at the pattern level).
5. Each exchange needs to ensure a balance in giving and taking.
6. The new needs to respect the old within the organisation.

Collective and individual behavioural patterns (collective unconsciousness and collective consciousness), if not consistent with the above principles, lead to unconscious breaking of the hidden order principles. Then, within the system, a force begins to work with a view to preserving its continuity, the so-called 'collective consciousness'. It is of remedial nature, and it works to restore order within the system in accordance with the above laws if they are not

[18] This phenomenon is described by the Lorenz system. Please refer to Lorenz, 1963, p. 130-141.
[19] Please refer to e.g. Platonoff, 2009; Dolan, Garcia, and Auerbach, 2003.
[20] It is a structural part of the human psyche that contains the basic response patterns (instincts) as well as human thinking, experiencing and behavioural patterns (the so-called) archetypes. Individual unconsciousness of a single person is developed on this foundation, and the conscious 'I' (ego) follows. Please refer to.: Jung, 2010, 2016.
[21] Please refer to e.g. Jung, 2009; Stam, 2010, p. 18-19; Gunthard, 2004.
[22] This approach is consistent with the collective self concept proposed by Jung, widely discussed and practically applied in psychology and cultural anthropology.

observed. However, crucial to understanding the problems occurring in social systems, i.e. organisations, is that **it is at the expense of those who come to the organisation after the order has been disturbed. In practice, the consequences of breaking the hidden order principles affect the employees and organisational activities coming and happening after the order has been disturbed** (Stam, 2010)**.** In addition, this force works on the unconscious level (not through conscious decisions of persons belonging to the organisation, but through the seemingly random and unrelated events[23]).

In order to restore the proper functioning of an organisation, one needs to eliminate the root cause of the problem (where a hidden order principle was actually broken, not by limiting the outcomes of it at a different place in the organisation where it manifests itself in the unfolded order, as it leads to further distortions of the natural inner harmony and problems within further parts of the organisation)[24].

Awareness of this rule appears to be fundamental to the management practice. In this context, the role of the managers of conscious organisations is to create organisational solutions which are consistent with the hidden order principles. Then, the organisation can properly function for a long time.

5. Summary

The problem of conscious organisation is a naturally emerging management concept being a response to the challenges which contemporary organisations face. It appears that in the face of revolutionary changes in the perception of reality and changes of the underlying paradigms in virtually any scientific discipline, application of less evident aspects regulating the operation of the entire universe according to the natural harmony may be a revolutionary and daring approach to the classical management; however, it appears to be a step back if it comes to actual and sustainable development of an organization[25].

[23] However, if a more in-depth method of analysing relations and patterns is applied to those events, they turn out to be non-coincidental and interrelated.
[24] The system settings method is one of the methods of working with such challenges within an organisation.
[25] By 'development', the author means the development of consciousness of the entire system, i.e. the organisation.

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