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THE RATIONALIZATION OF DEVELOPMENT STRATEGIES IN HIGH TECHNOLOGY ENTERPRISES¹

Summary. The subject of the article is a discussion on the problems of rationalization of development strategies in high technology enterprises. The article presents the concept of the rationalization model of a strategic process in high technology enterprises in the configurational approach. Also, the partial results of research undertaken in the Project concerning defining and solving strategic problems in innovation enterprises have been analyzed².

Keywords: development strategies, high technology enterprises

RACJONALIZACJA STRATEGII ROZWOJOWYCH PRZEDSIĘBIORSTW WYSOKICH TECHNOLOGII³

Streszczenie. Przedmiotem artykułu jest dyskusja problemów racjonalizacji strategii rozwojowych przedsiębiorstw wysokich technologii. W artykule zaprezentowano koncepcję modelu racjonalizacji procesu strategicznego przedsiębiorstw wysokich technologii w ujęciu konfiguracyjnym. Poddano również analizie częściowe wyniki prac badawczych podjętych w Projekcie⁴ z zakresu definiowania i rozwiązywania problemów strategicznych w przedsiębiorstwach innowacyjnych.

Słowa kluczowe: strategie rozwojowe, przedsiębiorstwa wysokich technologii

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² The term “Project” has been used in the article when referring to the project entitled “Technological entrepreneurship and organization development”.

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1. Introduction

An increase in the level of innovation of our economy is a crucial condition for further development. These are the theses and conclusions of diagnoses as well as strategic development programs for Poland. The strategy of innovative economy development defined in the innovation policy of Poland for the year 2020 has been included for a long time in required GDP growths and⁵ in the preparations of formal and organizational solutions (e.g. the Act on innovation support of 25 September 2015) for promoting the innovation policy of the country and not only; in the quantitative growth of innovation enterprises but mainly in the change of the qualitative character of innovation strategies; first of all, high technology enterprises. In the group of these enterprises, particular importance is attached to the growth of the number of start-up enterprises as well as ensuring the proper, efficient, and dynamic process of their development, among other things, by supporting the organization of incubators (examples: Google Campus Warsaw or the Incubator being designed under the StartInPoland Programme).

According to the "Polish start-ups" Report, the estimated number of Polish start-ups amounts to 2.4 thousand entities. Research results indicate that nearly 60% of Polish start-ups are financed exclusively from their own funds; another source of capital is EU funds in the form of subsidies or a seed fund, and nearly every fifth surveyed start-up used funds from Polish or foreign venture capital funds, the same number of start-ups received funds from business angels⁶. The research also revealed that in every sixth start-up, the founder is a person involved in scientific work, and nearly half of start-ups claim that their solution is a novelty on a global scale, whereas every fourth admits that its product is an imitation. Over half of start-ups are exporters, among whom every second realizes over 50% of sales abroad⁷.

The life of a strategist, an entrepreneur managing an innovation enterprise which they organize in order to realize an innovative idea created by them is rather difficult. They develop this idea or concept in spite of many limitations: organizational, formal, and limitations resulting from the availability of resources; but above all, the company in the conditions of the innovative use of changes or opportunities.

An entrepreneur/strategist/leader organizing and developing an enterprise makes an effort to execute several strategic challenges. Firstly, it is programming and designing an innovative undertaking (a project which consists of the following stages: the organization and implementation of an innovative solution and its commercialization). Secondly, ensuring and

⁵ "Strategia Innowacyjności i Efektywności Gospodarki. Dynamiczna Polska 2020", Ministry of Economy, Warsaw 2013.

⁶ Skala A., Kruczkowska E., Olczak M.A.: Polskie startupy. Raport 2015, STARTUP POLAND Foundation, 2015

⁷ Ibidem.

maintaining the high innovation potential of an enterprise towards many problems, the solution of which requires the creativity of other members of the organization. The development of an enterprise from its state as the organization of an innovation enterprise to the level of creative organization is an ideal⁸. Thirdly, challenges which a leader/entrepreneur of a start-up company faces require their and their staff's high creative activity: creative work for innovatively solving research, design, and program issues as well as organizational issues which result from the execution of an innovation project. Therefore, "acute" but also complex research issues in the area of strategic management are:

- defining the rationality of strategic management on the grounds of the modern level of management sciences, in particular under such complex conditions which determine strategic management in start-up enterprises;
- developing instruments of strategic management in these enterprises.

These issues determine goals which were set by the authors of the project entitled "Technology entrepreneurship and development of organizations" financed by the National Science Centre (2012/07/B/HS4/03128); in particular the basic research aim of the Project is: explaining the strategic role of technology entrepreneurship in the development of organizations acting in a dynamic, hostile, and complex environment.

The article presents some results of research undertaken in this project as well as the author's own thoughts in the context of defining and solving strategic problems in innovation enterprises.

2. The development strategies of high technology enterprises in light of research

The basic first thesis which was proposed, a thesis basically proved during the first stages of research undertaken in the Project is: admitting that "the development strategy of high technology enterprises, particularly start-up enterprises, is an entrepreneurial strategy the constitution of which is described by methods developed in the modern approach to strategic management called the configurational approach".

The entrepreneurial strategy is, of course, a resource strategy in the sense that a dominating resource for the development of an organization, for building any values for which an organization was constituted, is the knowledge of the entrepreneur and other participants of an organization. In the case of innovation enterprises, this key resource is, of course, the knowledge of the entrepreneur, regarded as discovering opportunities and knowledge on constructing any activities or processes of organization activities (including

⁸ Brzeziński M.: Organizacja kreatywna. PWN, Warszawa 2009.

business models, structures, etc.). Furthermore, it has to be said that the entrepreneurial strategy is, in particular, knowledge understood as a cognitive, autopoietic process. The entrepreneurial strategy constituting and organizing activities⁹ and processes within an organization builds and develops these organizations in the streams of knowledge as a key resource.

Generally, every organization-enterprise is established in the streams of a) the activity of its participants, b) in the streams of knowledge, and c) in the streams of moral values as well as d) in the streams of organizational values (since every "action" and every cognitive process is a combination of people's activity and the streams of material resources, as well as the streams of knowledge and the streams of values¹⁰). Moreover, I would like to add and emphasize that every action, every process in an organization, cognitive process – including also the process of constituting the entrepreneurial strategy – possesses an axiological dimension, i.e. its morality¹¹.

The entrepreneurial strategy is an emerging strategy as understood by H. Mintzberg¹², i.e. it is the result of the mutual influence of the environment and an organization on one another as well as a reaction to these factors mutually influencing each other. The entrepreneurial strategy is also a strategy as understood by K. Oblój¹³.

The entrepreneurial strategy is a model concept of a modern (entrepreneurial) approach in strategic management (paradigm management), the so-called configurational approach of which consists in methodological recommendations rationalizing actions and behaviors of managers in strategic processes.

Strategic management in the modern phase of perception of the complexity of problems which strategists have to solve has entered a new, qualitative stage of development of this virtually defined and verifiable field of management. The cause of this challenge for practitioners and theoreticians engaged in strategic management is not only the deepening complexity of the environment of modern organizations but also, more and more commonly, the realized truth that this complex and dynamically turbulent environment in which organizations function and develop is not so much of a static existence – a system of various organizations, processes and phenomena but more an existence dynamically changing, an existence significantly depending on the behaviors and decisions of an organization's strategists.

⁹ Stachowicz J.: Podejście sieciowe (paradygmat sieciowy) w naukach zarządzania; założenia oraz konsekwencje dla praktyki zarządzania, [in:] Stachowicz J., Nowicka-Skowron M., Voronina A. (eds.): Rozwój organizacji i regionu wyzwaniem dla ekonomii i nauk o zarządzaniu. Dom Organizatora, Lublin-Toruń 2014.

¹⁰ Ibidem.

¹¹ Ibidem.

¹² Heller M.: Moralność myślenia. Copernicus Center Press, 2015.

¹³ Mintzberg H.: The strategy concept 1: Five Ps for strategy. "California Management Review", 1987, p. 11-24.

Organizations build their environment through the strategic decisions of their members.

This thesis finds its practical justification in constructing these various strategies included in the modern entrepreneurial approach to strategic management.

The period of the 90s and the first years of the 21st century are characterized by constructing concepts, methods, and methodological approaches of strategic management, in which larger and larger prevalence of the entrepreneurial paradigm is emerging. Special attention should be drawn to methodological approaches such as: the elaborated concept of the so-called R. Krupski's occasions filter, the concept of knowledge management for innovations called Davenport, Leibold, Voepel's poised strategy, Brown and Eisenhardt's concept of managing on the edge of chaos. The increasing importance of these concepts and approaches in formulating theories, more and more adequate to modern knowledge, explaining the phenomenon of the development of organizations and shaping the role of strategic management in this area, as well as an increasingly explicit conviction give grounds to stating the progressing prevalence of the entrepreneurial paradigm.

The success of management in light of the configurational approach depends on mutual influence, the configurations of various factors, including internal and external ones, while these configurations are responsible for the development of an organization. These configurations are, in turn, the derivatives of the process of identifying development opportunities for organizations. The main assumptions in the configurational approach include: equifinality which means the diversity of ways of reaching identical goals in the same environment (there is no one, optimal way of achieving the goals of an organization). The next assumption of this approach is the concept of adjustments, understood as the compatibility between various concept domains of the development of an organization and external conditions. This concept is subject to reduction mechanisms denoting the possibility of isolating the finite number of organization types understood as the relationship of adjustments. Another assumption of this configurational approach is the description of the development of an enterprise by making qualitative step changes and not relying on evolutionary adjustment to the environment. According to the configurational theory, an organization is characterized by specific domains (conceptual constructs consisting of mutually influencing dimensions: managerial leadership, organizational structure, the development strategy of an organization, and the environment of an organization¹⁴). Furthermore, the above mentioned authors consider building specific mental patterns of these configurations (by strategists, advisors) on the basis of empirical observations but, first and foremost, on the basis of case studies which are to be the main method of creating configurations. The authors consider constructing configurations as the methodological platform of formulating and implementing entrepreneurial strategies to be the main concept

¹⁴ Miller D.: Configurations revisited. "Strategic Management Journal", No. 17(7), 1996, p. 505-512.

of the processes of "discovering configurations". These processes are undertaken and executed by the leaders/strategists, and the efficiency of these processes translates further into the success of entrepreneurial strategies¹⁵.

The modern approach to strategic management, and also entrepreneurial management and its methodological recommendations (the configurational approach), have their grounds and, of course, their references in modern organization theories. Modern organization theories, formed within and on the basis of theories which are formulated in modern psychology, sociology, and philosophy, are based on ontological and epistemological assumptions concerning the process of cognition and understanding organizations as "a net of nets" of activities of organization members; activities, which are constituted in a) the streams of an individuals' activity (initiated and maintained in the streams of material resources and energy), b) in the streams of knowledge, and c) the streams of values¹⁶. In an organization as "a net of nets" of activities, one can distinguish a dominating net, the source of which are activities and cognitive processes of leaders/managers. These nets construct what is called the entrepreneurial strategy. Moreover, these dominating nets are characterized by a certain cognitive construct, which has been characterized as positive organizational potential (POP). The methods and criteria concerning the ways in which the processes of nets consisting of these activities emergently constitute the subsequent stages of the development of an enterprise (in this sense, organizations are perceived as a process consisting of subsequent phases, states) define its features characteristic and identical for every organization, which are called positive organizational potential (POP)¹⁷. POP involves, above all: the level of managers' competences, the level of conscious actions of leaders/ entrepreneurs, the level of their emotional intelligence (mainly and particularly dominating their system of moral values as intentional factors of constructing the entrepreneurial strategy by these entrepreneurs, managers), and the level of autopoieticness of organizational knowledge of these enterprises¹⁸. Positive organizational potential is a particular genotype of an organization, in the systemic-static approach which characterizes the organizational culture of an organization. In contrast, in the network approach to an organization, positive organizational potential (POP) reflects the characteristics of the network formed from an entrepreneur, i.e. from their activities, including knowledge being a part of the entrepreneurial strategy. The dominant network is a net of activities and cognitive processes built from the bottom up, from an entrepreneur's activities and cognitive processes. It is the net around which, from

¹⁵ Miller D.: Configurations revisited. "Strategic Management Journal", No. 17(7), 1996, p. 505-512.

¹⁶ Stachowicz J.: op.cit.

¹⁷ Ibidem.

¹⁸ Ibidem.

which and by means of which further nets of activities and processes constituting an organization are constructed^{19,20,21}.

The second thesis arising from the research is the conviction that outstanding competences and skills of managers/leaders, outstanding competences in respect of their high level of rational intelligence but, first and foremost, emotional intelligence, are the main resource (capital) ensuring continued development of an enterprise²².

An interesting observation emerging from the research is that enterprise leaders consciously assume the development of their enterprises in the direction of creative enterprises. The essence of such enterprises is "using creative processes of the mind of both an individual, a team, and at the level of an organization as a collective mind"²³. Creativity in an enterprise means the need for changing "the way of thinking, balancing on the edge of chaos and order, the known, and unknown"²⁴. Freedom in creating new solutions, initiating innovations, and overcoming the inertia of implementation processes should constitute a significant aspect of managing modern enterprises²⁵. According to M. Brzeziński, a climate conducive to the creativity of an individual, a team or the whole company rarely occurs in modern organizations^{26,27}, therefore it is necessary "(...) to create a new organizational form in which creativity will become one of the basic paradigms". The assumptions and concepts of this type of strategy can be found also in other publications, such as the previously mentioned paper by Devenport, Leibold – poised strategy²⁸.

According to the assumptions of the configurational approach in modern strategic management, the next, third thesis says that:

- *the efficiency of the strategic process for high technology enterprises is not so much the selection of the best configurations (strategic domains, e.g. based on theoretical analyses), but such a design of the project of "configuring" these domains that will guarantee, in a given period, the highest substantive rationality and using conditions resulting from social rationality at the highest possible level.*

Therefore, the following question becomes a crucial and "acute" challenge for practitioners and theoreticians: how to understand and shape the criteria of strategic management rationality in view of such a differently perceived mutual influence of

¹⁹ Stachowicz J.: op.cit.

²⁰ Ibidem.

²¹ Ibidem.

²² The dominant style of managing modern enterprises is the style of a **responsible leader**. (see: Rok).

²³ Brzeziński M.: Inżynieria kreatywnej organizacji. „Ekonomika i Organizacja Przedsiębiorstwa”, nr 8, 2004, p. 45.

²⁴ Brzeziński M.: Kreatywność w nowoczesnej organizacji. “Ekonomika i Organizacja Przedsiębiorstwa”, nr 8, 2003, p. 9, 34.

²⁵ Ibidem, p. 41.

²⁶ Brzeziński M.: Kreatywność...

²⁷ Ibidem.

²⁸ Davenport T.H., Leibold M., Voelpel S.: Strategic management in the innovation economy. Wiley, 2006.

organizations and the environment?; how to understand, in view of that, the criteria of strategic management?; how to build rationally strategic processes for formulating and implementing the evolution of changes in the development strategy of an organization? In order to answer these questions, it is required to broaden and deepen the category of rationalization in accordance with the modern approach and understanding of "activity rationality" – more precisely, the rationality of managerial activities. W. Gabara, in discussing rationality in the praxeological approach as presented by Webber²⁹, in view of the essence and influence of phenomena and processes which result from the social nature of social activities, recommends developing the category of the rationality of activities and its broadening by including the conditions and effects of phenomena which rationalize human activities in the context of social bonds and conditions.

Efficiency in this respect means broadening and complementing the so-called methodological efficiency by including social efficiency. Moreover, as mentioned previously, it is providing any available instruments, information, and knowledge one is aware of and other resources for the efficient and effective accomplishment of an enterprise.

This broadened and deepened efficiency will be called axiological efficiency (axiological – for emphasizing the importance of moral and organizational values in any activities and processes – in our case, managers' and strategists' activities). Socioaxiological efficiency is considering (or even regarding as dominant) resources, conditions, opportunities, and phenomena which determine the social conditions and relations of an acting individual with a social group, members of an organization, and community^{30,31,32}.

Acknowledging the dominant role of a leader/strategist in the processes of the rational construction of entrepreneurial strategies in organizations, innovation enterprises means: "acknowledging such behaviors of leaders who are governed by these criteria of socioaxiological rationality in strategic activities. These behaviors characterize leaders/strategists, practicing strategic management in a rational manner in modern organizations in accordance with a management style, which in literature is called the responsible leadership style.

B. Rok stresses that leadership means first and foremost responsibility. Due to the pressure exerted on organizations in the scope of more conscious management, innovative partner projects, socially responsible products, and procedures, care should be taken already today to recruit leaders who will manage organizations in the spirit of the concept of social

²⁹ Gabara W.: Nauka o organizacji i zarządzaniu. Kierunki i tendencje. PWE, Warszawa 1989.

³⁰ Ibidem.

³¹ Weber M.: Wirtschaft und Gesellschaft. Grundriss der Verstehenden Soziologie, 1956.

³² Kotarbiński T.: Drogi dociekań własnych. Fragmenty filozoficzne. PWN, Warszawa 1986.

responsibility (CSR). The author emphasizes also the role of ethical leadership, which is based on building relations, the basis of which are, first of all, trust and loyalty^{33,34}.

The fourth thesis is the statement – that the crucial role of a leader/entrepreneur in the strategic process in innovation enterprises is a truth confirmed by practice about the increasing influence of positive organizational potential on the rationality of the enterprise development process – found confirmation in numerous literature reports by M.J. Stankiewicz, P. Zbierowski, and abroad in the research results of authors such as K.S. Cameron, J.E. Dutton, R.E. Quinn. It manifests itself in the prevailing influence of the positive organizational potential on the process of rationalization of formulating and implementing a strategy in innovative high technology enterprises and also in the selection^{35,36,37} and implementation of rational, from the point of view of management, business models.

Positive organisational scholarship (POS)³⁸

- POS is a new way of regarding and treating an organization as a specific phenomenon, perceived positively, and developed and used by individuals, and not as merely problems and difficulties which should be solved (as it has been practiced so far).
- POS puts main emphasis on "positive" phenomena such as nobleness, vitality, seriousness leading to perfection, positive transcendence, unusual efficacy (in addition, this trend is connected with the trend of building an organization characterized by outstanding efficacy) taking into account mainly social factors and criteria.
- POS is connected with the trend of organizational entrepreneurship. Both in the trend of organizational entrepreneurship and in the trend of the positive organizational scholarship, attention is focused on phenomena such as creativity, ingenuity, and optimism.
- While positive psychology concentrates on searching for optimal psychological states of individuals, the positive organizational scholarship focuses its attention on creative dynamics in organizations.

³³ Rok B.: Czy przywództwo etyczne w działalności gospodarczej jest możliwe? "Prakseologia", nr 149, 2009.

³⁴ Rok B.: Nieczuli, wrażliwi, czy odpowiedzialni?, <http://it-manager.pl/nieczuli-wrażliwi-czy-odpowiedzialni/>, 25.06.2015.

³⁵ Stankiewicz M.J. (red.): Pozytywny potencjał organizacji: wstęp do użytecznej teorii zarządzania. Dom Organizatora TNOiK, Toruń 2010.

³⁶ Zbierowski P.: Opracowanie z zakresu orientacji pozytywnej i przedsiębiorczości. Pogłębione studia literaturowe i synteza istniejącego stanu wiedzy. Politechnika Śląska, Gliwice 2014.

³⁷ Cameron K.S., Dutton I.E., Quinn R.E. (eds.): Positive Organizational Scholarship. Foundations of a New Discipline. Berrett-Koehler Publishers, San Francisco 2003.

³⁸ On the basis of Zbierowski P.: Opracowanie z zakresu orientacji pozytywnej i przedsiębiorczości. Pogłębione studia literaturowe i synteza istniejącego stanu wiedzy. Politechnika Śląska, Gliwice 2014.

The fifth thesis is the statement that the emotional intelligence of a leader/entrepreneur as a creating factor of positive organizational potential constitutes and develops positive trust in an organization. Trust in an enterprise is a basic factor of enterprise innovation development.

Moral and ethical competences of leaders are a key factor of POS orientation in modern organizations. These competences dominate the positive systems of hierarchy of moral and organizational values. These values plus managerial competences (knowledge, skills), and the activeness of leaders, constitute their strategic behaviors-activities.

The author identifies the following three imperatives of human activities: deliberate and active work of individuals (if it results from prudent will, and a purpose and goodness are the object of will), rationality ("K" – knowledge of a cognizing and deliberately acting individual) and "W" wisdom and the ability of making, in a given situation, prudent and conscious decisions in accordance with the specific system of values and hierarchy of moral values. The behavior of individuals in organizations is constructed by the domination of moral values (empathy, doing good, etc.), and an example of an acting and cognizing individual in an organization is a wise individual. These moral competences of leaders/strategists manifest themselves in their emotional intelligence and are materialized in the skills of leaders for constituting trust among the members of an organization, and also among other enterprises and institutions cooperating with this organization^{39,40}.

It has been assumed that the construct of emotional intelligence is a good (comprehensive) construct, encompassing complex correlations between wisdom and entrepreneurial wisdom in the context of their participation in shaping the positive orientation of an enterprise in relation to a specific entrepreneur-innovator and specific organization members (Ei). Emotional intelligence was the subject of research of, among others, D. Goleman and in Poland by H. Bieniok, who developed a modern tool of its examination^{41,42}.

Therefore, the fifth thesis is the statement that building trust in employees groups in enterprises as well as trust for organizations and institutions cooperating with innovation enterprises is a key catalyst-tool of the rational construction of entrepreneurial strategies.

³⁹ Stachowicz J.: Podejście sieciowe (paradygmat sieciowy) w naukach zarządzania; założenia oraz konsekwencje dla praktyki zarządzania, [in:] Stachowicz J., Nowicka-Skowron M., Voronina A. (red.): Rozwój organizacji i regionu wyzwaniem dla ekonomii i nauk o zarządzaniu. Dom Organizatora, Lublin-Toruń 2014.

⁴⁰ Ibidem.

⁴¹ Goleman D.: Inteligencja emocjonalna. Media Rodzina, Poznań 1997.

⁴² Bieniok H.: Rola inteligencji emocjonalnej menedżera w zarządzaniu zasobami ludzkimi organizacji, [in:] Czerska M., Gableta M. (eds.): Przełomy w zarządzaniu. Zarządzanie zasobami ludzkimi. Dom Organizatora, Toruń 2011.

P. Sztompka defines trust as a certain "bet", since, under uncertainty and the lack of control, one takes risks, focuses on something, takes bets on uncertain actions of others⁴³. Trust is built, as J. Stachowicz, A. Stachowicz-Stanusch claim, on the basis of partners' credibility (which is constructed on the basis of observing, cultivating moral values, the positive processes of building trust in the course of the destructive processes of building trust against the values of justice, empathy, and goodness). While the processes of building positive trust constitute cooperation for setting and accomplishing decent goals by organizations which manifest themselves in socially responsible behaviors of an organization, the destructive processes of building trust shape the behaviors of organizations such as corruption, fraud, etc.)⁴⁴.

Morality is a set of principles of an individual's conduct towards other people, towards oneself, and also towards nature, internalized in the process of socialization and upbringing. Morality stems from the need of survival of a social group, whereas ethics is a theoretic view of morality. What is important, the sources⁴⁵ of modern economic crisis are often sought in the moral problems of management. Hence the development of various trends referring to the phenomenon of morality, such as the theory of moral development⁴⁶, moral intelligence⁴⁷ or a moral compass⁴⁸. This is research where the phenomenon of the so-called positive orientation is analyzed. In Poland, as it was previously emphasized in the scope of the analysis of the phenomenon of the so-called positive orientation, the research results of M.J. Stankiewicz and P. Zbierowski should be particularly emphasized. Research in the analysis of this positive orientation includes various approaches, a different scope of human behaviors, research, and analyses of these complex phenomena, which human entrepreneurial activities are directed towards the cooperation of individuals in organizations^{49,50}.

⁴³ Sztompka P.: *Zaufanie. Fundament społeczeństwa*. Znak, Kraków 2007, p. 69-70.

⁴⁴ Stachowicz J., Stachowicz-Stanusch A.: *Klasy – współczesną i przyszłościową formą organizacji potęgującej wiedzę i wartości*. "Organizacja i Zarządzanie", nr 4. Politechnika Śląska, Gliwice 2011, p. 7-35.

⁴⁵ Opara S.: *Jak żyć? Wykłady z etyki*. Oficyna Wydawnicza ASPRA-JR, Pułtusk-Warszawa 2011, p. 12-13.

⁴⁶ Izzo G.: *Compulsory ethics education and the cognitive moral development of salespeople: A quasi-experimental assessment*. „Journal of Business Ethics”, No. 28(3), 2000, p. 223-241; Mudrack P.E.: *The untapped relevance of moral development theory in the study of business ethics*. „Journal of Business Ethics”, No. 42(3), 2003; Brzeziński M.: *Organizacja kreatywna*. PWN, Warszawa 2009.

⁴⁷ Wigglesworth C.: *Why spiritual intelligence is essential to mature leadership*. "Integral Leadership Review", 2006; Lennick D., Kiel F.: *Moral Intelligence: Enhancing business performance and leadership success*. Wharton School Publishing, Upper Saddle River, NJ 2005.

⁴⁸ Martin D.E., Austin B.: *Validation of the moral competency inventory measurement instrument: Content, construct, convergent and discriminant approaches*. Proceedings of ASBBS 2008, <http://asbbs.org/files/2008/PDF/M/Martin2.pdf>.

⁴⁹ Stankiewicz M.J. (ed.): *Pozytywny potencjał organizacji: wstęp do użytecznej teorii zarządzania*. Dom Organizatora TNOiK, Toruń 2010.

⁵⁰ Zbierowski P.: *Orientacja pozytywna organizacji wysokiej efektywności*. Wolters Kluwer Polska SA, Warszawa 2012, p. 8.

The sixth thesis assumes that the condition of the development of high technology enterprises is not so much achieving and maintaining a high level of innovation but constant progress in the scope of achieving this innovation at an increasingly higher stage.

Innovation strategies employed in modern enterprises, ensuring competitiveness in a definite time through applying offensive innovation strategies (e.g. of the so-called blue ocean strategy, the innovation niche strategy, the creative clusters strategy, the innovation network strategy) develop in the direction of the so-called creative model. In Polish literature, one can find valuable publications by M. Brzeziński forming the components of the future model of a creative organization, i.e. the models of the organization of creative teams as the main structural and process factors of creativity of an organization, the models of management in these organizations. M. Brzeziński presents the proposition of viewing an organization through the prism of the mind regarded as an extended form of a collective mind. The author emphasizes that one should bear in mind that, although any notion of the mind and the description of its functioning are reserved for an individual person, in a metaphorical sense, an organization, similarly to a human being, has a mind, but this is a collective mind. The collective mind has collective memory and knowledge transferred individually to the collectivity and resulting from the phenomenon of synergy, multiplying the potential of the collective mind⁵¹.

Carl G. Jung was the first to indicate the existence of collective memory. Research on the mind and our creative possibilities has led to discovering three types of intelligence: intellectual, rational (intelligence quotient), emotional (emotional quotient), and spiritual (spiritual quotient). J. Stachowicz associates this "collective mind" with organizational knowledge^{52,53}.

In our deliberations, we assume the structure of a leader's/manager's intelligence as their knowledge used in conditions of practice for solving problems as emotional intelligence and creative intelligence.

In the data-information-knowledge-wisdom-intelligence chain, wisdom is the highest category which associates an individual's knowledge with activities undertaken by them. That means that the undertaken activity or the undertaken cognitive process – an individual's

⁵¹ Brzeziński M.: Organizacja kreatywna. PWN, Warszawa 2009.

⁵² Authors such as M. Brzeziński distinguish three types of intelligence: intellectual (rational), emotional, and spiritual. While what M. Brzeziński defines as spiritual intelligence, we define as axiological intelligence (Ai). It should be emphasized that an entrepreneur's intelligence, which manifests itself in their creativity and innovativeness in action, is a mutually supporting process of creative development of rational intelligence (which results in innovation, an idea), emotional intelligence (Ei), and axiological intelligence (Ai). The factors, defining features of an entrepreneur's Ei + Ai are: credibility, justice, empathy and specific ethical values of leaders. Focus on values commonly recognized and ethical is important for an ethical leadership.

⁵³ Organizational knowledge has autopoietic properties, i.e. properties which underlie autoorganization, the auto-replication of organization.

thinking is determined and interwoven with the knowledge possessed (both cognitivist⁵⁴ and autopoietic knowledge) as well as the values dominating in the system of moral and organizational⁵⁵ values.

The statement that a high level of emotional intelligence in a leader/entrepreneur which mutually shapes the level of trust in an enterprise (a culture of trust) contributes to building the organizational structures of innovation enterprises as well as the organizational structures of production processes in which cooperation dominates, as well as to codesigning and implementing systemic tools developing innovation, such as the system of innovation management and the system of knowledge management.

The development of innovation enterprises takes place stepwise through the succession of phases which are characterized by specific states of an enterprise (assessed by the criteria of socioaxiological rationality). The states of the development of an enterprise are the result of activities, the processes of activities constituting the components of management processes, the processes of production organization, organizing and managing all the processes which contribute to the chain of values of an enterprise. Manners, pace, and criteria concerning the way these processes, specific states of the development of an enterprise are functionally connected, for a given organization, with Positive Organisational Potential (POP), whose manifestation and characterization is constituted by the organizational culture of an enterprise, the level of social responsibility of an enterprise. POP is a specific genotype of an organization – the key feature of its identity.

Whereas, knowledge created mainly by leaders/entrepreneurs, but also shared and developed by participants; knowledge on the manners of selecting employees and cooperators, knowledge on competitors, knowledge on the technology of production organization, knowledge on the developed management system; knowledge verified and complemented in the processes of learning organization is included in what was previously defined as a strategy (more broadly: entrepreneurial strategy)".

The development of an innovative enterprise is a process consciously designed and discovered by leaders. This process consists of certain cycles of activities included in the

⁵⁴ Myślenie to szczególna forma działania ludzi, see: Heller M.: op.cit.

⁵⁵ J. Stachowicz claims that knowledge manifests itself in a dual manner, as cognitive knowledge, i.e. a specific existence in which transformation and interpretation of information takes place, and autopoietic knowledge which manifests itself in the process of building the self and consciousness of a cognizing and acting individual. In contrast, intelligence is identified with wisdom since it is a specific form and manner as well as process of transforming knowledge and using it for specific individual's activities and behaviors. Human wisdom is identifying and using knowledge for morally assessed activities, and emotional intelligence (Ei) is associated with this wisdom. Such behaviors (associated with wisdom after Kotarbiński) are called the behaviors of a brave person and specific states of an organization – its behaviors are called socially responsible. But human activities often involve knowledge used not necessarily for moral activities. As justified by practice, behaviors and activities of many organizations are socially irresponsible activities.

configurations of specific knowledge, values, leaders' activity, in literature called strategic domains.

A strategic domain is a deliberately specified (for the purposes of research, for the purposes of measurement and strategy designing) cognitive construct built of factors (and more precisely of the processes of creating and using as well as applying knowledge and specific moral and organizational values) constituting specific managerial activities together with the effects of these activities.

I propose a slightly modified structure of domains in relation to Beckman, Eisenhardt and Kordel's model. Namely, a strategic domain is built by a) constructs of knowledge including specific artifacts (such as rules and regulations building the organizational structure, etc.) created and discovered by leaders as a result of innovative processes of discovering and creating chances and occasions (CO), b) strategies "written down" and shared among organization members, knowledge on conscious planning, and the development of an organization in the context, chances discovered and the influence of various internal and external factors on an enterprise (ST); this domain is traditionally called a strategy, c) business models BM – manners and methods of executing the strategy of a company, including ways of efficiently solving an organization's problems, d) the broadly understood organizational structure of an enterprise SR⁵⁶ – including the organizational structure of projects undertaken in an enterprise.

The process of constructing, configuring these domains is a dynamic, creative process the key subject of which is, of course, a leader.

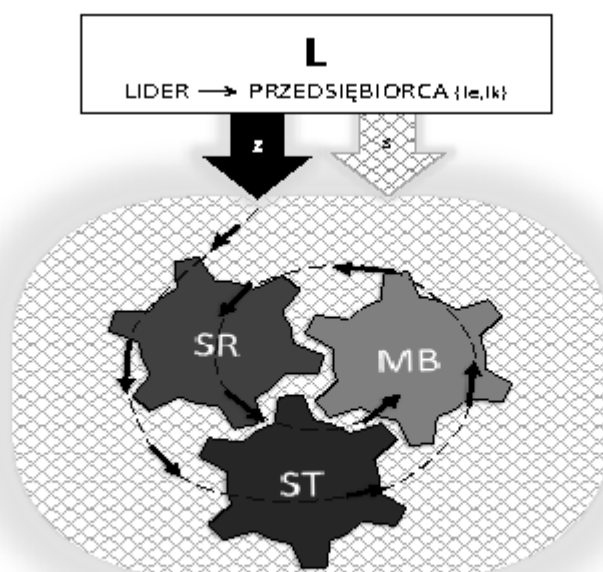
Moreover, the level of configuration of these domains as a level of socioaxiological rationality is measured by the effectiveness ratio of an enterprise and the level of positive organizational potential (measured by the level of the leader's emotional intelligence and more broadly, by positive organizational capital).

As it has already been said, the process of configuring these domains is an identity feature of an enterprise and depends on positive organizational potential (POP).

The positive role of interpersonal and interorganizational trust as a factor catalyzing, rationalizing this process of rational configuring strategic domains should particularly be emphasized.

Figure 1 presents the structure of the processes of configuring strategic domains in the processes of enterprise development.

⁵⁶ Kordel P.: Przedsiębiorczość technologiczna w ujęciu konfiguracyjnym, [in:] Świadek A., Wiśniewska J. (eds.): Innowacje we współczesnej gospodarce. Naukowe Wydawnictwo IVG, Szczecin 2014.



Key:

L – Leader

T – Processes of building trust (driving force SR, ST, MB)

C – Process of discovering and building chances

SR – Building an organizational structure as part of a chance

ST – Building the development strategy as part of a chance

BM – Building a business model as part of a chance

EI – Emotional intelligence

CI – Creative, innovative intelligence

Fig. 1. The structure of the processes of configuring strategic domains in the processes of the development of innovation enterprises

Rys. 1. Struktura procesów konfiguracji domen strategicznych w procesach rozwoju przedsiębiorstw innowacyjnych

Source: Own work.

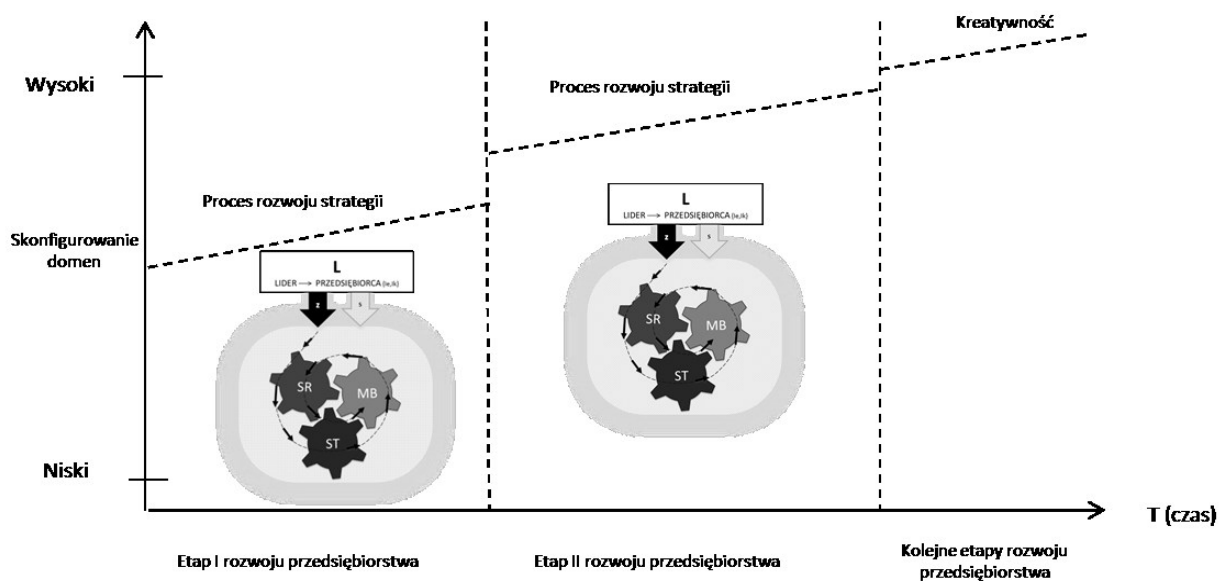
The model of rationalization of the strategic process of development of high technology enterprises (configurational approach).

The previously formulated theses constitute the basis for constructing the following assumptions of the model of rationalization of the strategic process of high technology enterprises:

- a) Firstly, the entrepreneurial strategy in modern enterprises is built in accordance with the principles of equivalence (different directions and paths of achieving the rational state of the strategy), adjustment – configuring strategic domains, internal and external factors, i.e. leadership, strategies, structures, and the environment.
- b) At a given stage of an organization there are such configurations of the entrepreneurial development domains which, in the process of adjusting these domains build the most rational development strategy.

- c) The entrepreneurial strategy in a given scope of an organization is a process of configuring, but it is also subject to radical changes, e.g. as a result of discovering particularly breakthrough changes but also as a result of the occurrence of crisis phenomena (termination of additional financing).
- d) Positive organizational potential (POP), as a basic causative factor rationalizing the processes of adjusting domains and rational construction of development strategies, significantly influences overcoming crisis phenomena in the periods of rapid qualitative changes in the processes of the development of an enterprise.

This model has been presented schematically in Figure 2.



Niski – Low
 Skonfigurowanie domen – domains configuration
 Wysoki – High
 Etap I r.p. – Stage I of enterprise development
 Etap II r.p. – Stage II of enterprise development
 Kolejne etapy r.p. – Subsequent stages of enterprise development
 Proces rozwoju strategii – process of strategy development
 Kreatywność – Creativity

Fig. 2. The model of rationalization of the strategic process in high technology enterprises
 Rys. 2. Model racjonalizacji procesu strategicznego w przedsiębiorstwach wysokich technologii
 Source: Own work.

Entrepreneurial organization potential (EOP) is the basis for formulating entrepreneurial strategies in modern organizations. The entrepreneurial strategy is deliberately generated, organized and developed knowledge constituting and organizing the activities of an organization's members for its development. The entrepreneurial strategy is, therefore, the strategy of innovative activities of entrepreneurs, strategists, and managers as the effects of innovative cognitive processes initiated by these strategists, the processes resulting from

activities in the systems of innovations management and knowledge management of modern enterprises.

The first stage of the development of a high technology start-up enterprise (constituting an organization on the basis of an entrepreneur's innovative concepts, ideas) is a complex enterprise – project, frequently financed from external sources.

An idea of a leader/entrepreneur (described by the level of emotional intelligence (Ei) and creative intelligence (Ci) builds and creates a chance (c), an occasion in the environment of an enterprise being created and in its internal structure. In order to make real the use of these chances or occasions in an enterprise constituted by a leader, the leader undertakes specific strategic activities as the result of the leader's knowledge and moral competences, which is reflected in the entrepreneurial strategy (St) being a certain construct. This strategy operationalizes activities undertaken by a leader, an enterprise employing, through this strategy (St), business models according to which the enterprise competes, wins a customer, ensures the necessary level of effectiveness, and social responsibility. In contrast, all these activities and processes occurring in an enterprise must be appropriately structured in the system of management and organization (So). As it has already been said, the leader's Ei and Ci determine the rationality of the structure of these processes, which manifests itself in their credibility and further in their possibilities of building trust (T) – as a catalyst of these processes. The above processes occur in a specific structure of the configuration of domains (see Fig. 1) and every stage of the enterprise development is characterized by a specific structure of these domains. Two stages of the development of an enterprise can be distinguished: the first stage concerns enterprises in the start-up phase, the second stage concerns functioning and developing companies. Individual states of enterprise development are separated by these discontinuities, jumps, during which, unfortunately, crisis management is implemented.

The development of high technology enterprises is determined by processes from the development of an innovation enterprise towards a creative enterprise. The concept of a creative organization is, according to M. Brzeziński, a natural effect of the evolution of organizational forms in which human capital and creativity perform a dominating function in shaping the personality of such an organization⁵⁷.

The second stage of enterprise development is preceded by the period of qualitative changes of an enterprise's development strategy (frequently by a leadership crisis – see the organizational life curve according to Lewitt) but, first of all, the suspension of financing from

⁵⁷ Brzeziński M.: Organizacja kreatywna. PWN, Warszawa 2009, p. 108.

*external sources. This period takes place in high technology enterprises parallel to other processes, namely to the implementation and commercialization of innovation processes*⁵⁸.

In this period, positive organizational potential is built and developed in a transactional manner (a mutual positive influence of a leader and their partners on each other). The key role in shaping a company's strategy is still played by the leader; and these are their attributes, as a transactional leader, i.e. being capable of building positive trust relationships which are crucial in the rationalization of strategic processes. It is necessary for a leader to be supported by competent advisors in this period; but where do we look for them and will an enterprise afford to cooperate with such advisors? It is also necessary for a leader to be supported by good provisions of law. Hopefully, the new Act on Innovation adopted by the Sejm on 25 September 2015 will eliminate certain deficiencies in this respect. Moreover, various incubator organizations and technology parks are being created and developed, etc. Recently, Google Campus Warsaw – a business incubator has come into existence and its objective is creating the possibilities of development for so-called start-ups, and innovation companies established mainly by young people who regard the internet as their natural environment and they conceive their ideas in relation to the global scale.

At this stage, the dominant model of leadership which an entrepreneur – a company's founder – exercises is a certain mix of the classical model based on domination and engineering leadership. This type of leadership should be, over time, consciously transformed into the model of organic leadership (consisting in building the involvement of all organization members, integrating them around shared goals). Moreover, at this stage, conscious work for development in the direction of increasingly higher maturity of the innovation management system according to A.T. Kearney is necessary. The author distinguishes four models of enterprises in relation to the process of pursuing perfection in innovation management: the traditional model, the emerging model, the entrepreneurial model, and the world class model⁵⁹.

⁵⁸ The authors of poised strategy recommend the simultaneous use of many business models in this period, which refers mainly to larger corporations. See: Luhmann: *The Autopoiesis of Social Systems*, [in:] Geyer F., van der Zouwen J. (eds.): *Sociocybernetic Paradoxes, Observation, Control and Evolution of Self-steering Systems*. Sage Publications Ltd., Beverly Hills, California 1986.

⁵⁹ Engel K., Diedrichs E., Brunswicker S. et al.: *Improve: A European Project with Impact 50 Success Stories on Innovation Management*. European Commission Enterprise and Industry, European Union, 2010.

Summary

1. The formulated concept-model of the rationalization of the strategic process of high technology enterprises may serve as a cognitive-methodological platform of programming research work for the rationalization of strategic management processes in start-up enterprises, as well as a recommendation for designing the methods and tools of strategic management in these enterprises.
2. The rationalization of the activities of entrepreneurs/leaders/strategists in innovation enterprises is included, not so much in the pursuit of rational constructing, executing, and implementing control and evolution of a strategy, but also in the rationalization of the strategic process in accordance with the recommendation and tools of the configurational approach as modern tools of modern resource-based strategic management.
3. *Positive organizational potential (POP) of innovation enterprises, including start-up enterprises, is significantly shaped by all types of intelligence as creative skills of individuals for using knowledge for practical reasons, knowledge understood as wisdom, i.e. created and used in accordance and coherence with the systems and hierarchy of moral and organizational values of modern managers.*
4. The author's deliberations on the grounds of the research conducted in the Project served also to elaborate and develop the concept constituting the new emerging paradigm of organization and management sciences (the majority of authors calls it the network paradigm approach). The cognitive construct, distinguished and discussed in the text, such as positive organizational potential, reflects the characteristics of the network created from the entrepreneur, i.e. from their activities, including knowledge comprising the entrepreneurial strategy. The network is regarded as a net of activities and cognitive processes, it is built from the bottom up in relation to an entrepreneur's cognitive processes and around which and by means of which further nets of activities and processes are constructed, by and large, constituting an organisation.
5. High technology enterprises are a specific, small group of enterprises. The majority of high technology enterprises are companies which were formed as a result of deep restructuring processes or as enterprises established e.g. as the performance of offset agreements (e.g. air enterprises). This is where the question about the nature of the strategy of these high technology enterprises arises. On the basis of the research results of the first stage of the Project, I think that the development strategy of these organizations is mainly an emerging strategy (as understood by Mintzberg), in which reactions to changes in the environment are shaped, to a considerable extent, by entrepreneurial strategic activities generated in these organizations. These entrepreneurial reactions to changes in the environment of enterprises are (in a various

scope and to various degrees) entrepreneurial strategies. Additionally, the processes of their implementation (adjustment) are rationalization processes which are constructed according to the recommendations of the configurational approach (see: the model of the rationalization of the strategic process in high technology enterprises). Of course, participation in shaping the strategies of creative enterprises, managers' entrepreneurial activities or innovative activities in general (developed in these enterprises) as the creative generation of chances and creative responses to these chances is not excluded.

6. Positive organizational potential (POP) is built and developed, above all, as the process of the development of an entrepreneur's emotional (E_i) and creative (C_i) intelligence.

Referring to the first assumption: POP creates the basic conditions (E_i and C_i) for developing interpersonal trust in an organization, i.e. Z_i as well as trust in relations with other representatives of an enterprise's stakeholders (Z_o):

- 6.1. *The higher the level of interpersonal trust in employee groups in an organization, the higher the effectiveness of innovative processes (the implementation of entrepreneurs' concepts, the commercialization and development of innovation, diffusion in the market).*
- 6.2. *The higher the level of mutual trust of stakeholders (Z_o) in relations with external stakeholders (cooperators, lenders, local authorities, customers), the higher, of course, the effectiveness of an enterprise, the higher the possibilities of discovering new chances. Z_i and Z_o are the basic factors of the rationalization of the network management characteristic for this type of enterprises in this period, i.e. management whose key functions are creating and developing the network of relations with external but also, of course, with internal stakeholders, organization members as well as building and developing relations, social bonds, trust, and cooperation.*
- 6.3. *The higher the level of $E_i + C_i$ of an entrepreneur (entrepreneurs), the greater the possibilities of constructing (on the basis of knowledge and specialist and organizational competences) – rational intelligence (R_i) of construction, with the potential use of the knowledge and competences of advisors, business models ensuring the economic effectiveness of an enterprise in this period (BM).*
- 6.4. *The higher the level of E_i and C_i , the greater the possibilities of building innovative organizational structures (clusters, systems of innovation management (OS)).*

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