


Relationship between Knowledge Management and Innovation

Ryšys tarp žinių valdymo ir inovacijų

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The article presents the results of empirical research related to determinants of innovation. Both practitioners and theoreticians deal with the problems of managing innovation, seeking its determinants which can emerge by minimizing barriers to the creation and implementation of innovations. The author concentrates on one of the most important determinants: knowledge management. The purpose of this article is to present which knowledge process is the most important for supporting business innovation in comparison to other variables.

KEYWORDS: knowledge management, innovation, research.

Since 1990, there has been a rapid growth of interest in innovation. New issues from international innovation (Granstrand et al., 1993) to 'open innovation' business models (Chesbrough, 2003) constantly emerge. Innovation is considered to be a crucial aspect to achieve and maintain a competitive advantage of the organization. 'Enhancing the innovative ability in organizations is one of the most important levers to increase profitability and growth in organizations' (Dobni, 2010, p. 49). Moreover, a successful and effective management of innovation requires constant thinking about innovation and mobilizing organization to build a new strategy capital, focusing on the value of a personalized experience and co-creation of value (Prahalad and Krishnan, 2010). The purpose of this article is to present how knowledge management can support organizational innovation and show which knowledge processes are the most important for innovation compared to other organizational factors stemming from the Leavitt's model (there were detailed 26 hypotheses examined) and there were three dimensions taken into account: strategic, tool and process. In this article, first of all, innovation is described (as a dependent variable), then independent variables are mentioned (determinants of innovation), whereas the last fragment of the theoretical part is dedicated to knowledge management. Secondly, the results of empirical research are described and concluded.

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Abstract

Introduction



In today's world the saying by Francis Bacon that 'knowledge is power' has a true meaning. Rapid access to information is a critical factor of success for many organizations (Shu-hsien 2003) and enables innovation, so knowledge management is an important field of studies.

Innovation

There is a widespread agreement among authors, researchers, consultants and thinkers in the field of management that innovation is the central capability for all organisations interested in maximizing the opportunities for success in the 21st century. However, as de Cagna said, while the pursuit of innovation cannot absolutely guarantee meaningful growth, it is the best strategy most enterprises have for achieving it in a way can become sustainable over time (Cagna, 2007). There are different approaches to innovation, related to different scientific disciplines in which this term originated (in organisation theory, economics, sociology, technology). Most authors emphasise the aspects of the organisation's search for new solutions in response to changes in the environment (both changes in customer needs and changes in organisational environment elements such as technology). Innovation is commonly interpreted as the introduction of a new product and is associated with the production process, especially technology. The differences in the definition of this concept are also determined by the understanding of innovation as a process or as a result/outcome of a process. However, most definitions emphasise innovation novelty understood objectively (the macroeconomic view: innovation is something absolutely new, pioneering work) and subjectively (the microeconomic view: it is new to the organisation, developed and implemented regardless of whether such a solution exists in other organisations). Another common element is that innovation has to lead to the success of the organisation by improving the use of resources or generating socio-economic benefits, and thereby to improve the competitive position of the organisation. The word 'introduced' is also key here since an important aspect is the implementation of innovation, not just theoretical assumptions or a new idea (Walecka-Jankowska, 2011). Innovative activity in organisations should also be reflected in economic profit, personal development of employees, higher job satisfaction, better communication within the organization, higher group consistency, the increase of knowledge. Therefore the expected role of innovation is to provide for generating innovation enterprise – as well as avoiding of losing position on market (especially if this position is based on technological innovation) or finding new unexplored area (i.e. Kim et al, 2015). For the research, it was assumed that innovation is a change in the subjective sense (change is new only for the organisation) leading to an improved product, production process or organisation itself, which was developed to achieve economic or social benefits. Innovation is also the process, in which the final step is to implement new ideas. Thus, innovation is not only the ability of the organisation to create the idea but it should also lead to economic and/or social benefits. It must be completed by the emergence of innovations on the market. The activities related to innovation include changes in both the incremental and radical transformation of the existing solutions. However, the adoption of the subjective understanding allows to achieve a high level of innovation even if the organisation implements the changes that exist in other entities, especially when they contribute to the improvement of the organisation (Walecka-Jankowska, 2011).

Determinants of innovation

A research on the determinants of innovation as well as the relationship between knowledge management and innovation firstly had to draw on the literature review. It was assumed that in order to measure the impact of knowledge management on innovation, KM should be measured compared to the elements of organizational model. Leavitt's organization model was used, developed of elements of management.

The following variables were taken into account: future-oriented strategy, structure (formalization, standardization, specialization, centralization, hierarchy), non-routine technology,

environment, professionalism: (qualifications and trainings, education, work experience, evaluation – the factors taken into account in the assessment, evaluation – frequency of providing feedback to employees), an open corporate culture, trust based on: (calculation, knowledge, identification), distributed leadership (features, relationships between employees), core values, motivation, information system (reporting, measurement), processes of knowledge: the development and acquisition, codification, transfer, utilization.

Non-routine technology means high variability and low analysability of tasks, the emerging high number of problem and lack of recognised methods of their solution, which makes the employees need to look for new methods of their activity (Hatch, 2002). The structural solutions demonstrate the organic properties: low formalisation and centralisation, small directing scope, great experience and high employees' qualifications, lateral communication, coordination and control through group discussions as well as social norms (Steinmann and Schreyögg, 2001). Non-routine technologies require independent employees, professionals, knowledge employees who are able to find solutions to constantly changing problems in a flexible way. They are characterised by willingness to acquire new knowledge and to have high competences, an innovative approach (perceiving the opportunities of creating new knowledge, being the agent of ground-breaking changes, manifesting innovative entrepreneurship, encouraging others to think creatively and cooperating with others in this respect) (Morawski, 2009), as well as by seeking diversity just thanks to cooperation (Srikantaih and Koenig 2001). Morawski (2009) points the fact that they are capable of fulfilling at least four organisations functions in the organisation, among which there is the role of an innovator who implements ground-breaking changes on his own or in cooperation with other creative employees (Morawski, 2009, p. 46). In order to offer unconventional solutions, the knowledge employees require great freedom in their actions, independence and freedom. Organic-type structures are characterised by the low level of specialisation, standardisation, centralisation, formalisation – those features are conducive to innovation. Supporting innovation requires creating organisational structures and processes which contribute to the development of technological changes. Stiff hierarchical structures, in which there is little integration between functions and in which the communication channels are unidirectional of the top-down type, do not support the smooth information flow (the features of the mechanistic system) (Tidd, Bessant and Pavitt, 2005). The strict control of the employees decreases their initiative, brings about their lack of independence and detachment from the organisation's goals. The high level of standardisation and the frequently accompanying high level of formalisation make the organisation's activities less flexible and limit the employees' creativity. Some author suggest that the high level of formalisation may lead to innovation in the second half of the innovative process (implementing ideas to production and market). The level of formalisation, like in the case of the remaining dimensions, should reach the optimal level in order not to allow for too great formalisation (excessive stiffening of activities and structure) or for too low formalisation (difficulties in coordination).

Drawing on the literature analysis (i.e., Hamel and Prahalad, 1994), it was assumed that the innovation of contemporary organizations requires developing and implementing strategies to build the future organization rather than prolonging the existence of the current one. A strategy oriented to building the future organization begins with what could happen, what is the desired future of the organization, in order to get back to what needs to happen to make this future exist. Only such an approach requires from the organization – its managers and all employees – a radical redefinition of their practices, and more importantly, the redefinition of environment perception – markets, customers, technology. The key features of the present- and future-oriented strategy are outlined in Table 1. It is assumed that the process

of formulating and implementing a strategy always places the individual organizations between the poles (Walecka-Jankowska and Zgrzywa-Ziemak, 2013). The effectiveness of the strategy, which has to lead to the increase of innovation must be supported by organizational culture (Linkner 2011; Jaruzelski, Loehr and Holman 2011; Govindarjan and Trimble, 2009; Shapiro, 2012; Kester et al. 2009). The organisational strategy should direct the employees, giving them clear guidelines which of the innovation's directions are desirable (Lafley, 2008; Shapiro, 2012). At the same time the organisational culture must provide opportunities for the development of the innovation by the acceptance of failure, experimentation and openness to external sources of information and cooperation (Kester et al., 2009; Dyer, et. al, 2009). Innovation thrives in a culture driven by diversity, dialogue and discipline (Stephenson, 2007). Moreover, there are special procedures which explicate the construct of innovation culture and offer a multi-item measure of innovation culture resting on an exploratory factor analysis (i.e. Dobni, 2006). Researchers also indicate an open culture (or characteristic of open culture) as a determinant of open innovation (Kirschbaum, 2005; Remneland-Wikhamn and Wikhamn, 2011; West et al. 2014). Supporting innovation is a consequence of the fact that open culture is focusing on constant development and knowledge sharing as well as discovering new knowledge thanks to experimentation and the open attitude towards risks and support of the activities of an individual person (Walecka-Jankowska and Zimmer, 2015). On the other hand, an open culture in principle will support experimentation and showing the readiness for taking the risk, which is essential for the development and creation of new ideas (i.e., Leonard-Barton, 1995; Marquardt, 1995; Rose, 1995; Pedler et al., 1997). An open culture also supports the information system and a free flow of information. Furthermore, drawing on knowledge management assumptions, a motivation system should be concentrated on the transfer of knowledge.

The majority of organisations are designed just as the systems with the minimum of interaction with the environment, with a developed system of monitoring and control of economic activities. In the open systems, there is a complete exchange of information, energy and materials with the environment. The properties of the modern environment make this increasingly more demanding and difficult. It issues new and often totally unexpected challenges to the organisations and they have to react fast to survive. Organisation's survival is its essential objective and only those systems can guarantee this, making the adaptation of the occurring changes possible. The factors which have their origins in the environment indicated in the literature will have a greater impact on innovation when the environment is more turbulent and uncertain. As Avery (2009) noted, the organisations which want to develop in a dynamically changing environment have to be flexible and innovative. Thus, they are under pressure in order to move in the direction of the organic leadership paradigm which would consider a greater number of leaders distributed in various parts of the organisation. The changes taking place in the organisation's environment and their pace require re-defining the role of a leader.

The organisation no longer need a single great leader who possesses the knowledge in all areas (has to perceive the employees' potential and make use of it). The leader's role is to support changes, thanks to which the organisations can survive and develop in a turbulent and changeable environment (Birkinshaw et al., 2008; Selman, 2012). At the same time, when confronted with those frequent changes, the leaders should provide organisational continuity and the feeling of identity thanks to spreading the common vision and common values among the employees. What should be added is that after the vision is determined, the core values should become the tool of the organisation's strategy (Devero, 2003). Hence, what is also of key importance here is the very process of formulating the organisation's vision. The core values should

then promote innovation, as claimed by Peters and Waterman. Giving people the feeling of achieving some more profound objective, which quite often gives people not only a new sense of their actions but also a sense of their life at large (thanks to the leader, they identify themselves with the company's objectives) (i.e., Collins and Porras, 2003). From the perspective of innovation, the most important tasks of the leader is to support the development of systems of the communities of practitioners which translate the knowledge into precise activities (Avery, 2009) as well as to undermine the organisation's status quo. Distributed leadership will thus be related to trust (far from naivety), respect for otherness and the acceptance of changeability in place of control, order and hierarchy (Avery, 2009; Parks, 2007). Mega values are influencing many of organizational elements, i.e.: corporate culture, leadership, strategy, organizational structure. Furthermore, an appropriate system of values distinguishes an organization from the competitors in a great way, it creates its identity, and, as T. Watson has already pointed out, it joins employees (Devero, 2003; Lencioni, 2004). Core values should express the importance of innovation in long-term approach. The last elements which complete the innovation determinants are the ones related to knowledge management in the organisation.

Knowledge management does not have a clear definition which would be widely accepted by both practitioners and theorists. Definitions of knowledge management presented in the literature often focus on the areas of knowledge management in organizations – the process approach – based on consulting company experience; the main emphasis is on KM processes like acquisition, transfer, codification (for this approach characteristic is logic and ordering, but knowledge is identified as an information). However, the emphasis in the process approach is not always located on all processes – some are focused on the processes of transfer and sharing, whereas some on the possibility of acquiring knowledge. There are two more: resource approach and 'Japanese'. The resource approach shows how organizations generate and use knowledge; it is based on the strategic approach and knowledge is identified as most important resource, which should be managed to be competitive advantage. The Japanese approach concentrates on creating and breeding knowledge in social interaction process between tacit and explicit knowledge. Thus the most important thing in this approach is the definition of tacit and explicit knowledge. But the practical side of the model is very poor, so it cannot be used in an organization; instead, it is implemented as a part of the model. The synthesis of the three approaches to KM was used in the research (according to the resource approach, the model shows how organizations generate and use knowledge; simultaneously, knowledge is treated as a specific and distinctive resource that demands a different treatment; the process approach does not equate knowledge with information; from the Japanese approach two kinds of knowledge were taken: tacit and explicit. The model contains actions directed to sharing of tacit knowledge and codification of explicit knowledge) (Tworek et al., 2015).

Bhatti et al. (2001), Akram et al. (2011) emphasize that knowledge management integrates capability of IT to process data and information and the ability of innovation. This gives the opportunity to receive appropriate funding, developing and controlling the use of the conditions, methods and techniques to the processes related to knowledge in order to generate value from intellectual assets or other resources based on knowledge. Practitioners of knowledge management represented by the consulting firms focused chiefly on its processes: development, transfer, codification and utilization, creation of formal systems supported by IT, emphasizing benefits from conducting knowledge management: enhancement of the organization value in the eyes of customers and employees (among them: GarnerGroup, McKinsey, Deloitte & Touche, KPMG, APQC, Unilever, Ernst & Young, PWC) (Walecka-Jankowska 2011).

Knowledge Management

The knowledge management processes follow one another in the order and form a 'megaprocesses' with input and output. The processes that add up to the megaprocess are the following: acquisition (creation and location outside the organization), codification, transfer, utilization and storage knowledge in an organization (Kowalczyk and Nogalski, 2007, p. 81). They form a logical sequence of events: the acquisition or development of knowledge followed by recording and codification of good practice. Codification provides access to knowledge, thereby increasing the degree of dissemination of knowledge by transferring it. The last element is the use of knowledge that occurs as a result of increasing competence of employees and the organization as a whole. This leads to the closing of the cycle, as an organization with the new knowledge can see new possibilities of its creation and development. New knowledge is the first step in the cycle of knowledge management, which is oriented towards creation of mechanisms driving the cycle of creating knowledge, which is valuable to the organization, employees and customers. The sources of knowledge, which constitute the beginning of a cycle are the following: the output of using the knowledge in an organization (i.e. improvements of procedures and organizational structure) or the use of knowledge from customers, from other organizations (that were not available and can significantly affect viability and competitiveness of the organization), from the structural level (necessary to ensure the continuity of knowledge management in all its stages) and from the integration level (visions and strategies for knowledge management and knowledge culture in organization). A business continuity is ensured by this cycle, due to the fact that it is directly related to the creation of customer value and determines the growth of strategic competences of organization and its employees. The cycle must focus on effective use of organizations tools and resources.

The research has adopted the following definition of knowledge management: a structured set of activities aimed at acquisition (creation and location outside the organization), codification, transfer, utilization and storage knowledge in organization taking into account both knowledge workers and the organization, and leading to a competitive advantage.

Research results

The general aim of the research was to define the determinants of the organisational innovation, with a particular emphasis on the knowledge management processes (acquisition and development, codification, transfer and utilization) characterized in the theoretical part of the article. These studies were conducted in Poland and 105 organisations operating in Poland were examined (they were different in terms of size, industry and ownership structure). One questionnaire was sent to each surveyed organisation with the request that a person with a broad view of the whole organisation (i.e. CEO, management team, quality specialist, etc.) fill it in. The results should be regarded as a kind of pilot study because the sample of the surveyed organisations was not representative.

To investigate the results of the relation between innovation and other variables (among them knowledge management), 26 key variables were defined. The knowledge processes were divided into acquisition and development, codification, transfer and utilization of knowledge in the scale measuring the knowledge management (4 variables). Cronbach's α were high than 0.8, which indicates a very high internal reliability of scales and measurement

Secondly, the innovation was measured by the subjective indicator: degree of innovation, which is the degree to which innovation in organizations is higher than in the most important competitors; in the organization there are many ideas to improve organizational procedures; in the organization there are many ideas to improve the technological process; in the organization there are many ideas to improve products/services; ideas which emerge in organization are often implemented. Cronbach's α was 0.861, which indicates a very high internal reliability of the scale and measurement.

A stepwise regression analysis was performed and 15 variables were significant ($p < 0,001$): future oriented strategy, specialization and centralization, professionalism – qualifications and trainings, evaluation – factors and frequency, open culture, trust based on identification, distributed leadership, core values, motivation, information system and acquisition and development of knowledge. Subsequently a fitting model was obtained in three steps ($F(1,104) = 51.969$, $p < 0,001$). The obtained predictors can explain almost 70(69,7)% of the variance of the variable innovation. Table 1 contains the structural parameters of the constructed model: innovation = F (future-oriented strategy, acquisition and development of knowledge, distributed leadership). The most important variable is future oriented strategy¹ (beta = 0,373) but on the second place the knowledge management process are acquisition and development of knowledge (beta = 0,294) and on third position leadership is distributed² (beta = 0,224).

Model B	Non-standardized coefficients		Standardized coefficients	T	Significance
	Standard error	Beta			
3 (Constant)	.112	.287		.390	.697
Future oriented strategy	.438	.107	.373	4.110	.000
Acquisition and development of knowledge	.328	.094	.294	3.493	.001
Distributed leadership	.263	.110	.224	2.384	.019

Table 1

The regression analysis results

Source: Walecka-Jankowska (2011)

As is emphasized in many organizations, there is formed a kind of pressure to innovate, leading to build internal corporate culture oriented towards innovation and creativity to support employees and their risk taking (Davila, Epstein and Shelton, 2006; Griffin, 1996). This is confirmed in the present research, which indicates as the most important factors: future oriented strategy, distributed leadership and knowledge acquisition and development.

The results of the research have shown that one of the most significant factors determining organisation's innovation is the future-oriented strategy. It corroborates the initial hypothesis. The strategy constitutes the basis for all organisation's activities and it is on its basis that tactic and operational plans are prepared. Welch (2010, p. 194) states that the strategy involves finding a great idea and determining a widely understood direction, assigning appropriate people to activities and later performing those activities, with the focus on their continuous improvement. It means that the future-oriented strategy makes the organisations which want to be competitive look for new organisational, process and product solutions. The research corroborates that in the context of the progress of business globalisation, the spread of computer networks and the increasing concern and risks related to the changes in the world market, innovation strategies, those strictly related to technology or product

1 The scale measuring future-oriented strategy initially consisted of 10 items. Four items were excluded from the scale (Cronbach's α statistics were used as a measure of the internal consistency). Finally, the scale consists of 6 items and Cronbach's α is 0.827, which indicates very high internal consistency and reliability of the measurement scale

2 The distributed leadership was measured by 2 variables: one measured leadership, whereas the second one measured relations between leaders and employees. The analysis based on Cronbach's coefficient was carried out. For all positions was 0,928. From the first scale 1 item was excluded (low level of discrimination coefficient) and finally the scale consisted of 12 items and Cronbach's $\alpha = 0,898$. In the second scale (leadership-relationships) entered 7 items, and Cronbach's α coefficient is 0.881, indicating high internal consistency and reliability of measurement scales.

Discussion

development as well as those related to creating new solutions in management systems or marketing, become of greater and greater significance to the value of the organisations and its possibilities of achieving the competitive advantage (i.e. Kim et al., 2015). Thus, what is essential is not only the fact that the strategy makes it possible to make changes in a fast way and to adjust but also the fact that it directs the managers' attention not only to the survival but also to the development and vision of what the organisation might look like and how it can function in the future. Moreover, in terms of the organisation's development strategy, it is important to consider the innovative approach to all activities, starting from everyday activities, through the mutual cooperation of all employees, to taking the strategy of innovative development into account. This is made possible by determining real objectives and manners of achieving them which have to be included in the organisation's mission statement and routine mechanisms of its functioning. To put it differently, innovation has to become an everyday manner of organisation's functioning, a value, of which all employees are convinced. Thus, the general conclusion that can be drawn in relation to the organisation's strategy is that the strategy should be future-oriented and should include the activities related to knowledge management.

The analysis of the research results has also shown that the only process of knowledge management which is statistically significant is knowledge development and acquisition. This is indicated by both the subjective as well as objective analysis. It seems that what may be of key importance is building the organisation, in which power does not result from an individual person's knowledge and in which group's success is more important than an individual person's success. This can function as the greatest incentive to information exchange. What is the most important is creating new knowledge and acquiring it from various sources. Thus, the motivation system should focus on those elements and use various motivators. The organisation should give its employees free access to various information sources both inside and outside of the organisation (it also means allowing free contact with other employees, co-operators etc.). Due to the fact that developing knowledge is both conscious and unconscious and encompasses the activities aiming at increasing the knowledge resources, the organisation should provide a consistent problem solution with the use of creative thinking. At the same time, the process of knowledge development should proceed in such a way so as not to disturb the everyday activities of all employees. Furthermore, from the perspective of management, a key role in knowledge development is played by the selection of appropriate employees. The level of employees' qualifications and training is one of the variables which is significant. However, the results of the analysis also show that what is very important for innovation is the process of employees' evaluation. It is of far greater importance than seniority or education which were not indicated as essential in any of the analyses. An essential aspect is evaluating employees from various perspectives, which means that various factors are taken into consideration. What is also of essence is the frequency of providing the employees with feedback. This is in a sense an incentive to act. However, the variable of evaluation was not included in the final model.

The results of the research have also supported the assumption made by Avery (2009), who is of the opinion that the organisations which want to develop in a dynamically changing environment have to be flexible and innovative. Hence, they are under pressure to move in the direction of the organic leadership paradigm. However, the results point to the smaller importance of the relationship between leaders and employees. The concept of organic leadership shows that the evolution proceeds in the direction which would encompass a greater number of leaders distributed in various parts of the organisation. Thus, it seems that fostering innovation by knowledge management should rather lead to the activities performed by a greater number of employees. Moreover, the concept of distributed leadership correlated with open culture

because, according to the assumption presented by Avery (2009), in place of control, order and hierarchy, what is offered is trust (far from naivety), respect and acceptance of otherness. From the perspective of innovation, the leaders' most important tasks include, apart from activity coordination, activating employees' creativity thanks to supporting, for example, free information flow and providing access to many sources of knowledge or rewarding innovators. As Drucker (...) claims, the purpose of business is to create a customer, the business enterprise has two basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are costs. However, today customers are different: active, aware of their needs, demanding, seeking for continuous dialogue with organisations but they are also critical and, what is very important, less loyal – changeable. This means that organisations must face the challenge. These challenges are not only continuous 'tracking' the customers (where they are, what they do, what they like) but, above all, constantly surprising them in both form and content. In the world rank innovation is on the top of the list core values. It is for the first time that innovations are more important than quality (Rek, 2013). This shows that the direction is changing – the wind of change is blowing into a new direction, quality is not sufficient to provide competitiveness. Organisations must be creative, because this can ensure the distinction and possibility to attract those, who are willing to pay for having a novelty. Moreover, organisations must be innovative constantly, as Craig Wynett from Procter & Gamble said: *'What we've done to encourage innovation is make it ordinary'*.

As results of the research have shown, the most important factor determining organisation's innovation is a strategy which is based on future vision of organization (including its innovation) more than on adapting to reality. The successful management of innovation requires constant mobilizing employees to build a new strategy capital, focusing on the value of a personalized experience, co-creation of value. Employees have to concentrate on future market position, on the vision of this position as one of core values. It is connected with distributed leadership, which is part of the developed model.

The main conclusion concerning knowledge management as one of determinants of innovation that only one of the knowledge processes is statistically significant. What is more interesting, is acquisition and development of knowledge. The role of knowledge transfer is underlined more often than the other processes. Other processes of knowledge did not enter the model moreover and did not prove to be statistically significant.

It seems that expanding knowledge on each knowledge process, tools and supporting their relationship with innovation organization is a very interesting direction. In addition, further research could also involve a detailed analysis between the processes of knowledge and various types of innovations (i.e. proposed by Oslo Manual: product, process, technology and marketing).

Conclusions

Akram, K., Siddiqui, S. H., Nawaz, M. A., Ghauri, T. A., & Cheema, A. K. H., (2011), Role of knowledge management to bring innovation: an integrated approach. *Cell*, 92(333), 6183035.

Avery G.C., *Przywództwo w organizacji. Paradygmaty i studia przypadków*, PWE Warszawa 2009. [Avery, G. C. (2004). *Understanding leadership: Paradigms and cases*. Sage.]

Bhatti, W. A., Zaheer, A., & Rehman, K. U. (2011). The effect of knowledge management practices on orga-

nizational performance: A conceptual study. *African Journal of business management*, 5(7), 2847-2853.

Birkinshaw, J., Hamel, G. & Mol, M. J. (2008) Management innovation. *Academy of Management Review*, 33, 825-45. <http://dx.doi.org/10.5465/AMR.2008.34421969>

de Cagna J., (2007), The Six Core Values of Innovation, [www. http://changethis.com/manifesto/41.03.SixCoreValues/pdf/41.03.SixCoreValues.pdf](http://changethis.com/manifesto/41.03.SixCoreValues/pdf/41.03.SixCoreValues.pdf) (access 03.2014).

References

- Collins, J., & Porras, J. I. (2003). *Wizjonerskie organizacje. Skuteczne praktyki najlepszych z najlepszych*. [Collins, J. C., & Porras, J. I. (2005). *Built to last: Successful habits of visionary companies*. Random House.]
- Chesbrough H. (2003), *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Boston Massachusetts.
- Collins J.C., Porras J.I., (2003), *Wizjonerskie organizacje*, SPM Project, Wrocław.
- Davila T., Epstein M.J. & Shelton R. (2006), *Making innovation work: How to manage it, measure it, and profit from it?*, Upper Saddle River, NJ: Pearson Education
- Devero A., (2003), Corporate values: Stimulus for bottom line, *Financial Executive*, nr 19 (3), s. 21-23.
- Dobni C.B., 2006, The innovation blueprint. *Business Horizons*, vol. 49, no. 4.
- Dobni C.B. (2010), Achieving synergy between strategy and innovation: The key to value creation, *Int. Journal of Business Science and Applied Management*, vol. 5, no. 1.
- Dyer J.H., Gregersen H.B. & Christenstein C.M. (2009), The Innovator's DNA, *Harvard Business Review*, December, (online access January 2014).
- Govindarajan, V., & Trimble, C. (2009). Is reverse innovation like disruptive innovation, Harvard Business Review Blog Network, <http://blogs.hbr.org/hbr/hbr-now/2009/09/is-reverse-innovation-like-dis.html> (accessed on 14 May 2013).
- Granstrand O., Håkanson L. & Sjölander S. (1993), Internationalization of R&D – a survey of some recent research, *Research Policy*, vol. 22, no. 5–6. [http://dx.doi.org/10.1016/0048-7333\(93\)90010-f](http://dx.doi.org/10.1016/0048-7333(93)90010-f)
- Griffin R.W. (1996), *Podstawy zarządzania organizacjami*, PWN, Warszawa. [Griffin, R. W. (2002). *Fundamentals of organizational management*. PWN, Warsaw, 39-44.]
- Hamel G., Prahalad C.K., *Competing for Future*, Harvard Business School Press, Boston 1994.
- Hatch M. J. (2002) The Dynamics of Organizational Identity, *Human Relations*, vol. 55, no8. <http://dx.doi.org/10.1177/0018726702055008181>
- Jaruzelski B. & Dehoff K., (2010) The Global Innovation 1000. How the Top Innovators Keep Winning, *strategy+business magazine*, Iss. 61, Winter, pp. 1-14.
- Kester D. (2009), Interview, HBR, <https://www.youtube.com/watch?v=KyqHGdIM> (access: 09.2014)
- Kim, W. C., & Mauborgne, R. (2015). *Blue Ocean Strategy, Expanded Edition: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Harvard Business Review Press.
- Kirschbaum R. (2005), Open innovation in practice, *Research Technology Management*, Jul/Aug, Vol. 48 Issue 4.
- Kowalczyk A. & Nogalski B., *Zarządzanie wiedzą. Koncepcja i narzędzia*, Difin, Warszawa, 2007
- Lafley, A. G., & Charan, R. (2008). *The game-changer: How you can drive revenue and profit growth with innovation*. Crown Business.
- Lencioni P.M., (2004), *Niech wartości naprawdę coś znaczą*, HBR Polska. [Lencioni, P. M. (2002). *Make your values mean something*. *Harvard business review*, 80(7), 113-117.]
- Leonard-Barton D. (1995), *Wellsprings of Knowledge. Building and Sustaining the Sources of Innovation*, Harvard Business School Press, Boston.
- Linkner, J. (2011), 7 Steps to a Culture of Innovation, *Innovation Generation*, August.
- Marquardt M.J., (1995) Building a global learning organisation, E.C.L.O Proceedings, International Conference.
- Morawski M., (2009), *Zarządzanie profesjonalistami*, PWE, Warszawa, 2009.
- Parks Sh., D., (2007), *Przywództwa można się nauczyć*, Helion, Warszawa. [Parks, S. D. (2005). *Leadership can be taught: A bold approach for a complex world*. Harvard Business Review Press.]
- Peters T. & Waterman R. (1984), *In search of excellence*, Harper and Row, New York.
- Prahalad C.K. & Krishnan M.S. (2010), *Nowa era innowacji*, PWE, Warszawa. [Prahalad, C. K., & Krishnan, M. S. (2008). *The new age of innovation: Driving cocreated value through global networks* (Vol. 1). New York: McGraw-Hill.]
- Rek K., (2013), Co się liczy dla firm?, *Harvard Business Review Polska*, nr 122/04.
- Remneland-Wikhamn, B. & Wikhamn, W., (2011), Open Innovation Climate Measure: The Introduction Of A Validated Scale, *Creativity And Innovation Management*, vol.20Rose 1995;
- Pedler M., Burgoyne J. & Boydell T. (1997), *The learning company. A strategy for sustainable development*, McGraw-Hill, London.
- Selman J., (2012), *Leadership and Innovation: Relating to Circumstances and Change*; <http://>

www.innovation.cc/ discussion-papers/selman.pdf (access 04.09.2012)

Shapiro, S. P., (1987), The social control of impersonal trust. *American Journal of Sociology*, 93, pp.623- 658, <http://dx.doi.org/10.1086/228791>

Shu-Hsien L., (2003), Knowledge Management technologies and applications – literature review from 1995-2002, *Expert Systems with Applications* 25, pp. 155-164. [http://dx.doi.org/10.1016/S0957-4174\(03\)00043-5](http://dx.doi.org/10.1016/S0957-4174(03)00043-5)

Srikantiah K. & Koenig M., (2001), Knowledge management for the information professional, Medford, NJ: Information Today, Inc

Steinmann H. & Schreyögg G. (1998), Zarządzanie: podstawy kierowania przedsiębiorstwem: koncepcje, funkcje, przykłady, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław. [Steinmann, H., & Schreyögg, G. (1991). *Management: Grundlagen der Unternehmensführung: Konzepte, Funktionen und Praxisfälle*. Wiesbaden: Gabler.]

Stephenson, K. (2007). The Quantum Theory of Trust: The Secret of Mapping and Managing Human Relationships.

Tidd J, Bessant J. & Pavit K., (2005), Managing innovation. Integrating technological, market and

organizational change, John Wiley & Sons, Ltd, Great Britain.

Tworek K., Walecka-Jankowska K. & Martan J., (in press), Structure reorganization due to IT information functions support for knowledge management, *China-USA Business Review* (ISSN 153701514)

Walecka-Jankowska K. (2011), Wpływ zarządzania wiedzą na innowacyjność przedsiębiorstw, Rozpr. doktor. PWr, Wydział Informatyki i Zarządzania, Wrocław. [Knowledge management influence on innovation, phd dissertation, Wrocław University of Technology]

Walecka-Jankowska K. & Zgrzywa-Ziemak A. (2013), Strategy and innovation relationships. *Przedsiębiorstwo Przyszłości*, nr 1.

Welch J. & Welch S., (2010), *Winning. Odpowiedzi, Studio EMKA.* [Welch, J., & Welch, S. (2009). *Winning: The Answers: Confirming 75 of the Toughest Questions*. Harper Collins.]

West J. (2010), Contrasting Innovation Creation and Commercialization within Open, User and Cumulative Innovation, Academy of Management conference, Technology and Innovation Management division, Montréal.

Katarzyna Walecka-Jankowska. Ryšys tarp žinių valdymo ir inovacijų

Šio straipsnio tikslas – atskleisti, kaip žinių valdymas gali padėti inovacijoms organizacijoje ir kurie procesai yra svarbiausi inovacijoms, lyginant su kitais Levitt'o modelio organizacijos veiksniais. Straipsnis struktūruojamas tokiu būdu: pirmiausiai apibūdinamos inovacijos (kaip priklausomas kintamasis), tada vardinami nepriklausomi kintamieji (lemiantys inovacijas) ir aptariamas žinių valdymas; pristatomi ir aptariami empirinio tyrimo rezultatai, pateikiamos išvados.

Įvadinėje dalyje autorė pagrindžia pasirinkto tyrimo aktualumą. Taip pat atskleidžiamas inovacijas lemiančių veiksnių akcentavimo būtinumas. Inovacijos laikomos lemiamu aspektu siekiant konkurencinio organizacijos pranašumo ir jį išlaikant. Be to, sėkmingas ir efektyvus inovacijų valdymas reikalauja nuolatinio inovacijų apmąstymo ir organizacijos mobilizavimo naujo strateginio kapitalo kūrimui, akcentuojant asmeninės patirties ir bendrai kuriamos vertės svarbą (Pralhad, Krishnan, 2010).

Pirmiausiai straipsnyje dėmesys skiriamas priklausomam kintamajam – pateikiama inovacijų apibrėžtis. Inovacijos traktuojamos skirtingai, priklausomai nuo disciplinos, kurioje yra kontekstualizuotos (organizacijų teorijoje, ekonomikoje, sociologijoje, technologijų moksle). Dauguma autorių akcentuoja tai, kad organizacijos ieško naujų sprendimų, kurie yra kaip atsakas į aplinkos pokyčius (tiek vartotojų poreikių, tiek organizacijos aplinkos elementų, tokių kaip technologija, pokyčius). Tarp vadybos srities tyrėjų ir praktikų paplitusi nuostata, kad inovacijos sudaro esminį organizacijų pajėgumą padidinti sėkmes galimybes XXI amžiuje. Tačiau, kaip teigė de Cagna, nors inovacijų siekis negali garantuoti prasmingo augimo, tai yra geriausiai daugeliui organizacijų prieinama strategija laikui bėgant pasiekti tvaraus augimo (de Cagna 2007). Be abejo, inovatyvių organizacijų vykdomą veiklą turėtų atspindėti ekonominis pelnas, asmeninis darbuotojų tobulėjimas, didesnis pasitenkinimas darbu, geresnė komunikacija organizacijos viduje, didesnis grupės pastovumas, žinių augimas. Dėl šios priežasties tikimasi, kad inovacijos sukurs inovacijų įmonę, tuo pačiu metu neleisdamos prarasti padėties rinkoje (ypač jei ji pagrįsta technologinėmis inovacijomis) ar atirasdamos naujas sritis.

Santrauka

Siekiant iširti inovacijas lemiančius veiksnius ir ryšį tarp žinių valdymo ir inovacijų, pirmiausiai buvo atlikta mokslinės literatūros analizė. Buvo daroma prielaida, kad norint išmatuoti žinių valdymo poveikį inovacijoms, žinių valdymas turi būti vertinamas atsižvelgiant į organizacijos modelio elementus. Buvo pasitelktas Leavitt'o organizacijos modelis. Buvo atsižvelgta į šiuos kintamuosius: į ateitį orientuotą strategiją, struktūrą (formalizaciją, standartizaciją, specializaciją, centralizaciją, hierarchiją), nerutinę technologiją, aplinką, profesionalumą, atvirą organizacijos kultūrą, pasitikėjimą, pasidalintą lyderystę, esmines vertybes, motyvacijos sistemą, informacijos sistemą, žinių procesus: vystymą ir įsisavinimą, kodavimą, perdavimą, naudojimą.

Žinių procesai vyksta nuosekliai: įsisavinimas (kūrimas ir dislokacija už organizacijos ribų), kodavimas, perdavimas, naudojimas ir saugojimas organizacijoje. Jie sudaro logišką įvykių grandinę: žinių įsisavinimą ar vystymą seka užfiksavimas ir gerosios praktikos kodavimas. Kodavimas suteikia priegią prie žinių, tokiu būdu padidindamas sklaidą žinias perduodant. Paskutinis elementas yra žinių panaudojimas, kuris yra darbuotojų ir visos organizacijos kompetencijos vystymo rezultatas. Šiame etape ciklas užsidaro, nes naujomis žiniomis disponuojanti organizacija gali matyti naujų žinių kūrimo ir vystymo galimybes. Naujos žinios yra pirmas žingsnis žinių valdymo cikle, orientuotame į mechanizmų, palaikančių žinių kūrimo ciklą organizacijoje, plėtojimą.

Toliau straipsnyje pristatomi empirinio tyrimo rezultatai, prieš tai pateikiant tyrimo metodologiją. Aptariami esminių kintamųjų skalių vidinio patikimumo testai ir matavimai, apibūdinama regresinė analizė naudojant žingsnio metodą. Svarbiausias kintamasis yra į ateitį orientuota strategija, bet antrąją vietą žinių valdymo procese užima žinių įsisavinimas ir kūrimas, o trečią – pasidalinta lyderystė. Tyrimo rezultatai aptariami remiantis mokslinės literatūros šaltiniais. Kaip pabrėžiama daugelyje organizacijų, egzistuoja tam tikras spaudimas būti inovatyviems, kuris veda prie vidinės organizacijos kultūros, orientuotos į darbuotojų inovacijų ir kūrybiškumo bei rizikos prisiėmimo skatinimą, palaikymą (i.e. Davila, Epstein, Shelton, 2006). Tai patvirtina gauti tyrimo rezultatai, kurie rodo, kad svarbiausi veiksniai yra į ateitį orientuota strategija, pasidalinta lyderystė, žinių įsisavinimas ir vystymas. Strategija sudaro visos organizacijos veiklos pagrindą, kuriuo remiantis sudaromi taktiniai ir operaciniai planai. Welch (2010, p. 194) teigia, kad strategija numato iškilios idėjos radimą ir plačiai suprantamos krypties numatymą, numatant tinkamus veiklas vykdyti žmones bei jų nuolatinį tobulėjimą. Tai reiškia, kad į ateitį orientuota strategija skatina konkurencingumo siekiančias organizacijas ieškoti naujų organizacinių, procesų ir produktų sprendimų. Antrasis svarbus kintamasis – žinių procesai (žinių įsisavinimas ir jų vystymas naudojantis įvairiais ištekliais). Todėl motyvacinė sistema turėtų susitelkti ties šiais elementais. Organizacijos turėtų užtikrinti laisvą darbuotojų priegią prie įvairių informacijos išteklių tiek organizacijos viduje, tiek išorėje (tai taip pat reiškia kontaktus su kitais darbuotojais ir pan.). Kadangi žinių kūrimas yra ir sąmoningas ir pasąmoningas bei apima veiklas, nukreiptas į žinių išteklių didinimą, organizacijos turėtų teikti nuolatinius problemų sprendimo variantus, pagrįstus kūrybiniu mąstymu. Tuo pačiu metu žinių kūrimo procesas turėtų vystytis taip, kad netrukdytų kasdieninėms visų darbuotojų veikloms. Be to, remiantis vadybine perspektyva, esminis žinių kūrimo vaidmuo tenka tinkamų darbuotojų parinkimui, kuris susijęs su trečiuoju kintamuoju – pasidalinta lyderyste. Tyrimo rezultatai taip pat patvirtino Avery (2009) prielaidą, kad organizacijos, kurios nori vystytis dinamiškai besikeičiančioje aplinkoje, turi būti lanksčios ir inovatyvios. Tokiu būdu joms tenka identifikuotis su organinės lyderystės paradigma, nors rezultatai rodo, kad ryšys tarp lyderių ir darbuotojų yra mažiau svarbus.

REIKŠMINIAI ŽODŽIAI: žinių valdymas, inovacijos, moksliniai tyrimai.

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