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THE ROLE OF ORGANIZATIONAL CULTURE IN AN OPEN INNOVATION MODEL

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Research on innovation indicates that due to the turbulent environment innovative processes may no longer be limited only to the use of internal knowledge developed through R&D processes. Enterprise should also focus on searching for exogenous sources of information in order to maximise their efficiency. This approach is referred to as open innovation. The aim of the article is to reduce the knowledge gap about the impact of organizational culture on open innovation practices. Many studies indicate, that opening the innovative processes requires a specific organizational culture that is also one of the key determinants of a company's response to changes in its environment. Organizational culture can also be one of the major barriers to the ability to implement open innovation in the company.

Keywords: Innovation, open innovation, organizational culture, innovative organizational culture

1. INTRODUCTION

Since 1990, the issue of innovation and business innovation has been a constant element of numerous scientific considerations on the subject of achieving and sustaining a lasting competitive advantage (Chesbrough, 2003a, p. 167; Chesbrough, Crowther, 2006, p. 229; Gassmann, Enkel, 2004, p. 5). This is due to the dynamic changes in the business environment, significant technical and technological ad-

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vances, and increased customer demand. Innovative research shows that innovation processes can no longer focus only on internal research and development (Celadon, 2014, p. 35; Chesbrough, 2003a, p. 21). They should also include the exploration of knowledge, technology, ideas from the environment and the commercialization of technologies that are not part of the company's strategy. To accomplish this, companies must "open up" their own innovation processes to collaborate with the environment. The issue of "openness" of innovative processes emerged in 2003 in a research field called *open innovation*. According to this trend, companies should open up their innovation processes, which, by integrating internal resources and capabilities with outsiders, intensify their ability to generate and implement innovation and increase their competitiveness. Lack of innovation often causes brands to lose their uniqueness, and products stop fulfilling their expectations. This innovation approach is the opposite of the traditional way of managing innovation, in which they are generated inside companies, in research and development department, without or with little cooperation with outside parties. Opening the innovative processes requires a specific organizational culture that is one of the key determinants of a company's response to changes in its environment (Schein, 1985).

Organizational culture can also be one of the major barriers to the ability to implement open innovation in the company (Mazur, Zaborek, 2016, p. 107). However, in the literature, the subject still lacks research on the impact of organizational culture on the ability to implement open innovation in the company. In the context of these shortcomings, the aim of the article is to reduce the knowledge gap about the impact of organizational culture on open innovation practices.

2. ORGANIZATIONAL CULTURE – THEORETICAL INTRODUCTION

Despite a number of studies on organizational culture, there is no uniform definition and typology of the subject in the literature. The concept itself is derived from anthropology, meaning, in general terms, the values and beliefs shared by the members of society (Daher, 2016, p. 2). In the management studies, communities have been replaced by businesses, which are considered as culture communities (Steinmann, Schreyogg, 2001).

E. Schein (1985) defines organizational culture as *a set of rules of conduct, discovered, established and developed by the group, to tackle the problem of internal integration and external adaptation, which, through good enough action, delineate the way in which new members think and feel in terms of problems* (Zbiegień-Maciąg, 1999, s. 16). The culture defined in this way is based on two basic dimensions:

- Internal integration of the company around common standards and values;

- External adaptation to conditions of the environment.

Organizational culture is a way of thinking and acting that new employees need to know because it characterizes collaborative methods in the organization and a respected system of values, norms and beliefs. (Zbiegień-Maciąg, 1999, s. 16). Corporate rules also include a symbolic sphere, such as language, ideology, myths, beliefs, rituals, and unconscious assumptions.

The organizational culture is influenced by many factors, for example (Serafin, 2015, s. 89):

- the influence of leaders,
- company history and traditions,
- applied technologies, products and services offered,
- clients,
- company expectations,
- used information and control system,
- legislation and business environment,
- the system of penalties and rewards,
- organization and resources,
- goals, values and beliefs of employees.

Sources that comprise the corporate culture cover three areas: the organization itself, its employees, and the environment. In addition, a well-structured organizational culture should ensure convergence of individuals' goals with the goals of the organization without the need of underlining the unity of aspirations (Serafin, 2015, s. 90).

3. OPEN INNOVATION IN LITERATURE

The concept of open innovation has emerged in the literature in 2003 in publications by Professor Chesbrough from Berkley University in California. The author of the concept defines open innovation as *the deliberate use of influences and outflows of knowledge to properly accelerate the internal innovation of the organization and to expand the market for the external application of the innovation process* (Chesbrough, 2003a, p. 36-37). Dynamic changes in the environment are the primary cause for proposing a new concept of corporate innovation. Growing competition, rapid technical and technological development, social networking, and the increasing mobility of knowledge workers are just some of the factors that necessitate a change in innovation processes.

The idea of open innovation is based on the use of streams of inflows and outflow of knowledge, ideas, technology to/from the company, implemented by means of monetary and non-monetary mechanisms (strategic alliances, agreements, etc.). Companies benefit from knowledge sharing at virtually every stage of the innova-

tion process, not just at its initial stage (knowledge as a source of inspiration for developing new innovations). Innovative processes continue to be pursued by internal research and development department, which can propose own ideas available on the market (for a fee or not). Therefore, the new approach to innovation is different from the traditional, closed model (Tab. 1).

Table 1. Comparison of the closed and open innovation process in the organization

Category	Closed innovations	Open innovations
Approach to hiring specialists	Employing the best specialists in the field	Cooperation with specialists from outside of the company
Approach to the process of innovation	The process of creating innovation (from idea to diffusion) takes place inside the organization so that the company benefits from the research. In addition, there is a control of the process of innovation (closing it) so that competition cannot gain the advantage	The process of creating innovation in an organization results from the acquisition of know-how from outside of the company. The organization gives additional value to the outside ideas and solutions. In addition, the organization benefits from open access to ideas
Approach to market priority	Priority race – every invention and idea should be presented as the first on the market	Organization does not have to be on the market first to invent something in order to benefit from it
Approach to competitive advantage	Only the organization which releases the innovation as a first one has a chance of winning with the competition	More important than being the first on the market is building a better business model
Implication of gaining advantage	Most of the best ideas in the industry = victory	The best use of ideas (internal and more important – external) = victory

Source: H. Chesbrough (2003b). The era of open innovation. *MIT Sloan Management Review*, 44 (3), 35-41.

In the closed model of innovation development, the whole innovation process is subjected to strong internal control. It is implemented primarily by internal research and development departments and requires high investment and protection of intellectual property. Companies using this type of innovation process management also benefit from external knowledge, and technology, but only at an early stage of research and development, or at the time of commercialization of ready-made ideas. Possible co-operation during the work is strongly controlled and regulated by appropriate agreements. Open innovation enables collaboration with many actors, such as research and development organizations, individual scientists or the internet community. It is related to the necessity to make a significant change in the organizational culture as well as in the company itself (Dodgson et al. 2006, p. 334). This approach is illustrated by the model proposed by Chiaroni (Chiaroni, I in., 2011, p. 36) (Tab. 2).

Table 2. Open innovation model by Chiaroni

Innovation dimension	Adaptation process	Implementation mechanism
Incoming – from outside	Unfreeze	Network
Outgoing – to outside	Transformation	Organization structure
	Institutionalization	Evaluation process
		Knowledge management system

Source: Chiaroni D., Chiesa V., & Frattini F. (2011). The Open Innovation Journey: How firms dynamically implement the emerging innovation management paradigm. *Technovation*, 31, 34-43.

Innovation dimension in the D. Chiaroni (2011) model corresponds to the approach proposed by H. Chesbrough 'a (2003b), according to which companies seek know-how in their environment and cooperate with the goal of commercialization of technology and innovation. Research in this area shows that companies often focus only on one dimension of innovation – incoming or outgoing. Mature companies and those operating in low-tech industries focus firstly on sharing new ideas, while secondly, on their acquisition from the market. Moreover, companies involved in high-tech industries place far more emphasis on acquiring outside knowledge than on sharing it. (Chesbrough, Crowther, 2006, p. 232-233)

As has already been mentioned, the transition from a closed traditional innovation model to open innovation requires organizational and cultural change of the company. It should be emphasized that these issues, due to their significance and their multidimensionality, have not yet been thoroughly investigated. The course of change in the company was based on a three-step sequential model of change in the organization developed by K. Lewina (1947), who visualizes it in three stages:

- Unfreeze – the moment when the current patterns and solutions have no effect. It is a moment of developing a new vision that will be presented to all stakeholders (employees, customers, suppliers, affiliates). Thawing of fossilized organizational structures,
- Transformation – implementing a new vision, adopting new attitudes, norms, values and patterns of behavior, often on an experimental basis,
- Re-freeze – Accentuate and consolidate new rules by reward and positive reinforcement. (Chiaroni, i in. 2011, p. 357).

The implementation of open innovation is based on the construction of a network of inter-organizational links, among others between research and development departments, suppliers (Chiaroni, i in., 2011, p. 35-36) and customers (Von Hippel, 2005, p. 19; West, Lakhani, 2008, p. 230). What, in turn, is related to the construction of an appropriate organizational culture, the so-called network culture, open to the organizational learning and supporting creative and innovative attitudes (Niemczyk, i in. 2013, pp. 75-77). It is also important to have an organizational structure that enables the exploration and exploitation of external knowledge, for example by means of an innovation broker. The structure should also enable the

management of relational potential, which many authors point to as an important factor influencing company's innovation. (Zakrzewska-Bielawska, 2016, p. 5). Using open innovation requires the company to develop a new system for evaluating incoming ideas / technologies / projects. This is primarily due to the large uncertainty of the solutions connected with market and technology (Chesbrough, 2003b, p. 38). However, one of the most important determinants of successful implementation of open innovation in the company is the adoption of a knowledge management concept *that is based on processes that enable the creation, dissemination and exploitation of knowledge to meet organizational goals* (Grudzewski, Hejduk, 200). It will also foster flow of knowledge streams between the company and the environment.

4. ORGANIZATIONAL CULTURE SUPPORTING THE OPEN INNOVATIONS

The first references to the influence of culture on the functioning of the company has emerged in the field of research known as *corporate culture* (Smircich, 1983, p. 334). According to this trend, culture was considered to be a key factor supporting the formulation and implementation of corporate strategy (Smircich, 1983, p. 334). Contemporary, the problem of the influence of culture on functioning and the innovativeness of the company has been analyzed by many researchers. E. Schein (1994) noted that organizational culture enables the development of processes and structures conducive to the implementation of innovation and rapid adaptation of the company to the changing environment (Schein, 1994, p. 43).

Andriopoulos (2001) has formulated five elements of an organizational culture that support innovation and creativity (Andriopoulos, 2001, p.835):

- Ability to stimulate employees while maintaining a safe working environment,
- Ability to take risks,
- Ability to provide open communication,
- Ability to self-motivate employees,
- Ability to provide confidence and respect for the individual.

Organizational culture should enable the implementation of innovative solutions to problems and the adoption of creativity as normal and desirable phenomena (Daher, 2016 p. 7).

H. Chesbrough (2003a), stresses that the implementation of open innovation requires changes in organizational culture (Chesbrough, 2003a, p. 149). *Organizational culture should foster knowledge, flexibility, creativity and openness* (Szymańska, 2014, p. 529). The openness of the culture was already analyzed in 1994 by S. Boerner, who in his research identified a model of closed and open culture based on three dimensions: anthropological, social and cognitive (Fig. 1).

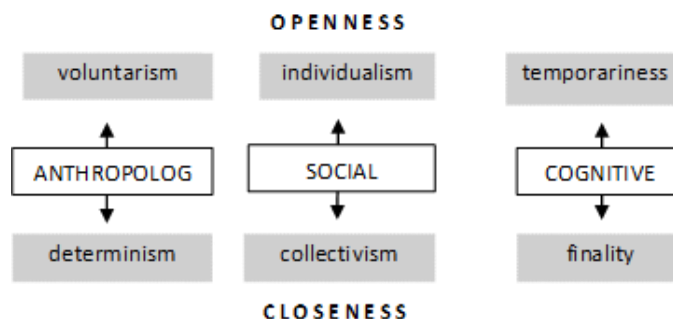


Fig. 1. Dimensions of corporate culture

Source: Walecka-Jankowska K., & Zimmer J. (2015). Corporate culture in support of the strategy: the key to organizational innovation. *Przegląd Organizacji*, 10, 43-48

The anthropological dimension of culture makes it possible to foster innovation as a consequence of the fact that open culture is focused on continuous development and knowledge sharing. Discovering new knowledge is happening through experimentation and open-mindedness to risk and errors. In the social dimension, open culture underlines the equality of all employees in accessing information, expressing their views, promoting and developing. The cognitive dimension refers to the temporality of knowledge, which requires constant verification and complements, also on the basis of external sources of knowledge (Walecka-Jankowska, Zimmer, 2015, pp. 44-45). Therefore, the adoption of an open organizational culture enables the acceptance of external concepts, technologies and ideas, and overcoming the barriers and prejudices associated with their use. (West, Gallagher, 2006, p. 21). Open culture is also the ability to innovate and be willing to risk, as well as the ability to cooperate with external entities. Innovative culture is characterized by the ability to exchange ideas freely and reward success without stigmatizing or criticizing failure. Hauser (1998) suggests that innovative cultures are characterized by a number of values that support innovation, among others: autonomy, risk taking and freedom. Innovative culture is oriented to outside of the company, especially in terms of supporting employees in acquiring know-how and cooperation. (Szymańska, 2014, p. 529)

An open organizational culture or an innovative culture will allow to open up innovation processes in the company, with a strong commitment of the employees (Tab. 3).

Implementing changes in the company often encounters resistance among employees. The sources of resistance to change fall into four categories: uncertainty, fear of new things, anxiety about business, and a different outlook on business problems. (Griffin, 1998, p. 398-399). The biggest challenges are faced by research and development staff who often think that working with external entities is demanding. Due to the high degree of difficulty in establishing and maintaining co-

operation, an external partner is sought only if there is no alternative source of knowledge (Katz, Allen, 1982, p. 7-19). It is also difficult to adapt external knowledge to the company's capabilities, strategies, and goals. The incentive system used by companies is often a barrier for establishing and maintaining interorganizational contacts. This system is often adapted to a traditional, closed innovation model based on rewarding physical work effects (number of inventions, implementations) (Salter, et. al., 2014, p. 90-92). The opening up of innovative processes in the company should be related to the construction of a flexible incentive system, which will encourage the research and development staff to start working with the external environment (e.g. rewarding cooperation initiatives) (Salter, et. al., 2014, p. 90-92).

Table 3. Stages of employee involvement in the implementation of open innovation

Stages of employee involvement	Organization attitude	Individual employee solicitation
<i>The idea of implementing open innovation</i>	Encourage employees to engage in the implementation of open innovation	Observe the need to work with specialists from outside
<i>Building partnership</i>	Develop procedures for establishing contacts with the company environment	Choose partners, with whom cooperation has been established in the past
<i>Conducting conversations</i>	Protect of internal know-how	Overcome the difficulty of transmitting classified information
<i>Using the advantage</i>	Emphasize on the implementation of new projects by the R & D department through cooperation with external entities	Skillful use of external knowledge and adapting it to the capabilities of the company

Source: Berthon P. R., Pitt L.F., McCarthy I., & Kates S.M. (2007). When Customers Get Clever: Managerial Approaches to Dealing with Creative Consumers. *Business Horizons*, 50, (1), 39-47.

Companies implementing open innovations often build partnerships based on past experience, narrowing the list of potential partners to the organizations / individuals they know. This may result in less innovative knowledge. However, establishing cooperation with new, previously unknown entities is seen as a time- and cost-consuming process requiring complex legal contracts (Salter, Criscuolo, Ter Wal, 2013).

It is also problematic to protect the company's know-how, which often represents its competitive position. Establishing effective collaboration with external entities requires the availability of classified information and the acquisition of valuable external expertise, while recognizing the need for confidentiality of know-how before signing the confidentiality agreement. (Kahneman, Lovallo, 1993, p. 17-31). The open organizational culture complemented by a set of rules and procedures for cooperation with the environment is the solution to this problem.

The acquired external knowledge can scarcely be immediately applied directly to the company's innovative processes (Lane, Salk, Lyles, 2001, p. 1139-1161). It is not compatible with its capabilities, objectives or business model. The external ideas adaptation stage is the activity merits of an open innovation model. An effective analysis of the usefulness of external concepts, technologies or ideas requires an appropriate system for assessing the flowing knowledge.

5. CONCLUSION

Open or innovative organizational culture is conducive to practices related to the use of open innovation, even at the implementation stage. The ability to open innovation processes is primarily a result of the standards and behaviors of the company. Exploring and exploiting external ideas, knowledge and technology requires from the company the ability to bear risks, accept mistakes, experiment, seek individual employee initiatives, and open communication (Szymańska, 2014, p. 533). Open organizational culture allows for effective management of knowledge from the environment through internal support of the company's research and development and integration of knowledge flows (Walecka-Jankowska, Zimmer, 2015, p.47). First and foremost, employees are the key to creating the conditions for a free exchange of ideas and engaging with external parties. These conditions include the creation of incentive schemes that reward the initiatives taken to seek outside knowledge, an effective communication system, the support of legal departments, and the development of internal regulations for the disclosure of classified knowledge (Salter, et. al., 2014, p. 90-92, Kahneman, Lovallo, 1993, p. 17, Szymańska, 2014, p. 529). Innovative organizational culture leads to more innovation being developed. However, these are often not product innovations (rather organizational or technological ones) (Mazur, Zaborek, 2016, p. 130). In addition, it is also conducive to the creation of knowledge and organizational diffusion (Mazur, Zaborek, 2016, p. 130). This helps to unlock the innovation processes in the company.

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ROLA KULTURY ORGANIZACYJNEJ W MODELU INNOWACJI OTWARTYCH

Summary

Badania nad innowacjami wskazują, że turbulencja i zmienność otoczenia przedsiębiorstw powoduje, iż procesy innowacyjne nie mogą już być ograniczone jedynie do wykorzystania wiedzy wewnętrznej generowanej w ramach procesów badawczo-rozwojowych. Przedsiębiorstwo powinno również skoncentrować się na poszukiwaniu egzogenicznych źródeł inspiracji, wiedzy, informacji w celu zmaksymalizowania ich efektywności. Takie podejście jest określane mianem innowacje otwarte. Celem artykułu jest zmniejszenie luki w wiedzy dotyczącej wpływu kultury organizacyjnej na otwarte praktyki innowacyjne. Wiele badań wskazuje, że otwarcie innowacyjnych procesów wymaga specyficznej kultury naczników reakcji przedsiębiorstwa na zmiany w otoczeniu. Kultura organizacyjna może być również jedną z głównych przeszkód utrudniających wdrażanie innowacji otwartych w przedsiębiorstwach.

Słowa kluczowe: innowacje, innowacje otwarte, kultura organizacyjna, innowacyjna kultura organizacyjna

