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THE IMPACT OF DESIGN THINKING ON INNOVATIVENESS OF AN ORGANIZATION AND PERSONAL CREATIVITY OF ITS EMPLOYEES

WPŁYW *DESIGN THINKING* NA INNOWACYJNOŚĆ WŁASNĄ I ORGANIZACJI

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Abstract: The article present the impact of Design Thinking on current management theory and practice in the area of innovations in organization, personal and organisational innovativeness and their impact on organisational culture. The use of Design Thinking method to build, maintain, manage, improve and develop an organisation in the area of its innovation and the employees' own creativity, offers the opportunity to enrich the existing scientific research by broadening the knowledge in this area. Design Thinking is also a holistic approach to cooperation with the organization's stakeholders. Skilful listening to feedback (comments and what they have to say about products/services) and using this information as a contribution to further development and improvement of both the organisation's product offer, and one's expertise (know-how), is the key to success today.

Keywords: Design Thinking, personal innovativeness, organizational innovation, creative method, iterative process, innovations.

Streszczenie: W artykule przedstawiono wpływ *Design Thinking* na aktualną teorię i praktykę zarządzania w zakresie innowacji w organizacji, innowacyjności osobistej i organizacyjnej oraz ich wpływu na kulturę organizacyjną. Wykorzystanie metody *Design Thinking* do budowy, utrzymania, zarządzania, doskonalenia i rozwoju organizacji w obszarze jej innowacyjności oraz kreatywności własnej pracowników daje możliwość wzbogacenia dotychczasowych

badań naukowych poprzez poszerzenie wiedzy w tym zakresie. *Design Thinking* to także holistyczne podejście do współpracy z interesariuszami organizacji. Umiejętne słuchanie informacji zwrotnych i wykorzystywanie tych informacji jako wkładu w dalszy rozwój i doskonalenie – zarówno oferty produktowej organizacji, jak i własnej wiedzy fachowej (*know-how*) – jest dziś kluczem do sukcesu.

Słowa kluczowe: *Design Thinking*, innowacyjność własna, innowacyjność organizacji, twórcza metoda, proces iteracyjny, innowacje.

1. Introduction

The aim of the article is to present how Design Thinking can influence the innovation of an organisation and the employees' own creativity. It discusses how this method can be used in order to create innovation within an organisation, and then manage the creative process, also to improve and develop it. For the purpose of the article, a process model for the practical application of the Design Thinking method was chosen as it is in fact an iterative process, aimed to redefine and identify a well-known problem.

The following research methods were used in the article: critical analysis of literature, creative thinking and interpretive philosophy.

2. Design Thinking – definition

The definition of Design Thinking concept in this paper is based on an innovative process that focuses on the human being, draws attention to observation, learning, collaboration, idea visualisation, rapidly emerging prototype concept and simultaneous analysis, ultimately affecting the adopted business strategy and innovation in general (Lockwood, 2010, p. 28).

Moreover, the author's own understanding of the definition of Design Thinking is presented as an iterative creation of new and original solutions, based on information acquired by means of a holistic approach to the organisation, the specificity of its operation, context, environment, and customers through the application of prosumption, in order to process and employ the acquired data in the direction of creation, unique knowledge, thinking patterns and mechanisms of operation, as well as achieved results.

Design Thinking is currently used in various areas of human activity, from education to production. Wherever new solutions and original approaches are required, Design Thinking is becoming increasingly popular. Therefore, it is assumed that Design Thinking will have an increasing impact on an organization's innovation and the employees' own creativity, which will make the creation of innovations even more intense.

3. Innovations versus personal and organizational innovation – definitions

After the analysis of the available literature, a multitude of innovation definitions were found, from which the following were selected and included in Table 1.

Table 1. Definition of innovation

No.	Definition [Author, year of publication, page number]
1	Innovations, as a term, created as early as in 1912 – was introduced to economic literature by J. A. Schumpeter (Schumpeter, 1960, p. 131). According to Schumpeter, innovation is an implementation of a new solution into practice. Nevertheless, in his work Schumpeter focused on technological innovations and their impact on the economic development (Dolińska, 2010, p. 16).
2	Innovations are very widely used in many fields of science and areas of life, from management sciences to psychology (Janasz and Koziol, 2007, p. 11).
3	Innovations are thoughts, behaviours or things that are new, i.e. qualitatively different from the previous form (Hejduk and Grudzewski, 2000, pp. 138-139).
4	Innovation (Latin ‘innovatio’ means renewal) stands for something new, modern, with the aim of refreshing thinking towards progress and development (Pomykalski, 2001, p. 17).
5	Innovations in enterprises depend on such factors as: equity, assets held, the industry in which they operate and management staff (Kłopotek, 2002, p. 30).
6	Innovations refer to any change in the way of thinking, acting, potential, methods of production, economic development factors (Boguski, 2007, p. 5).
7	Innovations represent the creation of something new and the enrichment of knowledge that is required (Dolińska, 2010, p. 16).
8	Innovations are the main creative forces of any organization (Wściubiak, 2015, p. 155).

Source: own elaboration based on (Dolińska, 2010, p. 16).

Modern trends in research on the matter of innovation are described in Table 2.

It should also be kept in mind that at the macro scale, i.e. from the perspective of economic growth, innovations can only be successful if there is potential stemming from the attitude, according to which the example is always drawn ‘from the top’. Thus, on the one hand, it is taken at the level of the style of state governance and thus of shaping civic attitudes and influencing the way of thinking and acting. On the other hand, it concerns legal regulations and policies (fiscal, monetary and credit, ecological and innovative) (Kłopotek, 2002, p. 30).

Many authors are in agreement with this very idea that, on a micro scale, the organization’s growth and, on a macro scale, the development of entire economies depends on the policy conducted and the level of investment in science and new technologies (Olszak, 2018, p. 99).

Table 2. Modern trends in research on innovation

No.	Definition [author, year of publication, page number]
1	Open innovation 2.0, i.e. activity targeted at cooperation that blurs the boundaries between science, business and local government. The entire process uses breakthrough technologies (Curley, 2016, p. 314).
2	Innovations encompass value and experience that are currently focused on a non-material aspect and global utility. All these would not have been possible without IT support, thanks to such platforms for exchanging and sharing information as: Facebook, LinkedIn, Twitter, YouTube and Second Life. Other innovations in the field related to intangibles have focused on the advancement of new processes and user experience in well-established industries such as Apple (mobile phones), Amazon-Kindle (books), Netflix (movie streaming) and cloud computing, as well as software as a service (enterprise IT). For all these innovations, IT has a central function, and in many cases enabled the technical and economic feasibility of the innovations and made them profitable. Some of these innovations can be called digital or digitally unlocked, resulting in new digital combinations and sets of physical components to create new market offers (Lusch and Nambisan, 2015, p. 156).
3	Innovations in the convention of proximity frameworks: geographical and organizational, together with a cognitive, social and institutional character as additional factors that support inter-organizational cooperation and thus increase the level of enterprises' innovation (Boschma, 2005, pp. 61-74, cit. after: Davids, Frenken, 2017) are closely related to knowledge, its collection, sharing and management (Asheim, 2007, pp. 223-241; Asheim, Coenen, and Vang, 2007, pp. 655-670; Mattes, 2012, pp. 1085-1099, cit. after: Davids, Frenken, 2017).

Source: own elaboration based on Curley (2016), Lusch, Nambisan (2015), Boschma (2005), Asheim (2007), Asheim, Coenen and Vang (2007), Mattes (2012), Davids, Frenken (2017).

On the micro scale, addressing innovations related to the business operation, it is necessary to adjust the activity in this area to the current strategy or to set a new direction of thinking about the solutions that would meet the market's expectations, being a fresh and original proposal that would be desired and find many supporters (Pelszyński, 2015, pp. 225-227).

The fields of innovative activity of enterprises are also important, among which one can distinguish the following areas: (Roszkowska, 2015, p. 124):

- 1) product (goods, services, ideas);
- 2) process (technology, infrastructure);
- 3) organisation (personnel policy, marketing, management, procurement and sales, administration);
- 4) marketing (exploitation of new territorial areas, penetration of new market segments).

Product innovations: introducing new services or products characterised by improved structure (components, materials) and parameters (enhanced technical specification), with state-of-the-art software built in, easy to use and with other functional features (Baran, Ostrowska, and Pander, 2012, p. 18).

Process innovations: implementation of a new method of creation, production, delivery of goods or provision of services (Baran, Ostrowska, and Pander, 2012, p. 18).

Organisational innovations: the application of a modern organizational method which has not been previously used within a functioning management system, and which results from the strategy and objectives established by the top management (Baran, Ostrowska, and Pander, 2012, p. 19).

Marketing innovations: modern marketing methods that are closely related to significant changes in product construction or design, its packaging, promotion and distribution, as well as the adopted pricing strategy (Baran, Ostrowska, and Pander, 2012, p. 18), bearing in mind how such activities are carried out by competitors, because the competition, as well as implementation costs and customer awareness undoubtedly influence the enterprise's innovative character (Kłopotek, 2002, p. 30).

A new direction in research on the matter of innovation was the implementation of the term of **social innovations** by I. Roberts. Social innovations are regarded as social and technical change (Roberts, 2008).

In turn, Agarwal and Prasad (1998) introduced the **notion of personal innovation** in the context of IT environment functioning as a symbol of taking risks, courage and challenges for shaping this environment (Personal Innovativeness Information Technology, PIIT). The area of personal innovation in the context of the use of Internet services and mobile technology was also studied by Lu, Yao and Yu (2005).

Therefore, an inspiration emerged to examine how the issue of the own innovativeness is shaped in various industries, as well as whether and what innovations using the Design Thinking method appear in practice, and how it all translates into an organization's innovation.

Organization's innovation: the ability to create innovation. It is a condition of long-term development and continuous improvement for the organization, a factor influencing the level of technological advancement, and therefore, a source of creation of various changes, whether technological or organizational. This all influences flexibility and the capacity to cope with the modern market economy and changing conditions (Repetowski, 2008, pp. 177-178; Żuchowski, 2016, pp. 139-140).

To conclude, every organization, in order to develop dynamically and effectively, needs not only changes, but innovations in thinking and acting, in order to be ahead of its competitors and conquer the consumer market. It should be borne in mind that only new products, technologies, organization and management systems, as well as marketing (Penc, 1999, p. 141), lead to this very goal, together with care for the creative process and a working atmosphere that enhances the creative potential of the employees.

Moreover, a separate definition of an organization's innovation was introduced, defined as the continuous ability to improve, grow and develop in order to create a unique value which is desired on the market and shapes modern trends against the background of competition.

Additionally, the author's own definition of personal innovation was established, defined as a continuous ability to improve, grow and develop in order to create competences in the field of knowledge, skills and experience, with the aim of acquiring unique competences, resulting in the creation of solutions that will determine trends for improvement and development for others.

4. Related works

One cannot agree with the opinion of Helman and Rosienkiewicz (2015, pp. 62-72) that Design Thinking is a concept of stimulating innovation, since innovations are the result of personal and organizational innovation. Thus Design Thinking can be a concept of stimulating individual and organizational innovation which may result in the creation of innovations.

However, one should accept the thinking presented by Sobota and Szewczykowski (2014, pp. 91-113), that Design Thinking is a creation method, as well as the approach of Starostek (2015, pp. 1070-1076), suggesting that Design Thinking is a method of creating innovations, since both science and the approach can bring about new organizational, marketing, process and product solutions. A similar idea was presented by Owen (2006, pp. 1-5) in the context of the correlation between Design Thinking and an organization's innovation as a key factor in business competition. Similarly, one should agree with the view that Design Thinking supports the emergence of innovations and guarantees original solutions, presented in relation to the methods of using marketing research by Caban-Piaskowska (2019, pp. 287-400).

An interesting approach to the application of design thinking was described by Brodnicki (2015, pp. 42-45) based on the example of the functioning of the international IT company – SAP, which has been operating on the market since 1972, with its registered office in Walldorf in Germany. The company uses Design Thinking in relations with its customers who are prosumers, in order to co-create such IT systems that fully meet their needs and will create the value they desire, while taking into account the possibility of the further development of these systems according to the established vision, and taking into account current trends, technologies, specificity of operation, products of competitors and market demand.

5. Design Thinking process and its influence on shaping personal and organizational innovation – prospects for future research

It was planned to carry out a research process involving the evaluation of the number of innovations created using Design Thinking, in relation to the number of all innovations and in order to answer the following research questions of whether and to what extent Design Thinking influences the employees' own creativity and organization's innovation.

The research was carried out among employees of various industrial companies in Poland using the Indicator of own innovativeness created for the purpose of this research. The indicator is calculated using a formula being the ratio of different numbers of all the innovations created and the number of innovations reported by

$$IOI = \frac{\text{the number of all the innovations created} - \text{all the innovations created and the number of innovations reported by creative entities that apply the Design Thinking method}}{\text{the number of all the innovations created}} \times 100\%$$

Fig. 1. Indicator of Personal Innovativeness

Source: own elaboration.

creative entities that apply the Design Thinking method, to the number of all the innovations created, multiplied by 100%.

The topic of personal innovativeness is still little researched, and this is the reason why a thesis was built that there is a relationship between the personal innovativeness of employees and the innovativeness of the organization which should be tested and described. The thesis states that Design Thinking is a more popular method of working for employees with strong own innovativeness. Next element of the thesis is connected with organizational culture and the impact on organizational innovativeness.

All the above were combined into the following research model:

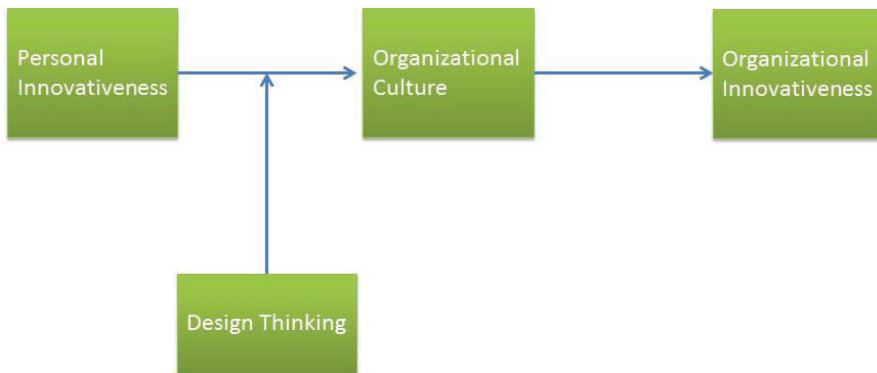


Fig. 2. Draft of research model

Source: own elaboration.

The study of the relationship between the elements of the proposed research model provides new knowledge and will be inspiring for further research.

6. Conclusion

The results of the research will be an introduction to further considerations concerning the personal and organizational innovation in the context of applying the Design Thinking method, aimed at collecting information and obtaining knowledge on the current state of the personal and organizational innovation in the context of the Design Thinking method and showing a perspective for further improvement and development in this area. Design Thinking began its important role at the moment when start-ups were given the 'green light' to act on the global market. At present this very method is part of a dynamic, agile action on the world stage and in various sectors, from teaching to building IT systems, which makes this research area worth exploring and measuring the scale of its occurrence.

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