Janusz Ziarko[1]
ORCID:0000-0002-9100-2807
Monika Ostrowska[2]
ORCID: 0000-0002-0397-1131

Design Thinking Employed by Local Authorities in Solving Public Order and Safety Problems

Introduction

The participation of citizens in drawing up policies and designing services in the field of public order and safety (POS), which address the needs of particular communities, and are adapted to the circumstances, is increasingly becoming a focus of interest for local authorities. Citizens, their needs, values, and beliefs are becoming constituent elements in the concept of the collective development of POS through the systematic pursuit of regular cooperation between local authorities, non-governmental organisations, communities, and citizens. Of growing importance are the skills of local government office employees in the field of design thinking, and their ability to engage various entities in cooperation. As a result, it is necessary to cultivate contacts with people, who are now better educated, are aware of their civil rights, and have easy access to relevant information and the opinions of leaders, experts, and attorneys. This requires citizens to be orientated towards public welfare, ready for active involvement, and to possess the skills necessary for efficient participation and reasonable action on the part of the citizens. These are demanding requirements, especially if the local social capital is low and some groups in the population are marginalised.

Design thinking provides sets of approaches, methods, and tools which can be used by the public leaders who undertake projects in complex, volatile,

---

[1] Dr hab. Janusz Ziarko - prof. KAAFM, deputy dean of the Faculty of Security Sciences Andrzej Frycz Modrzewski Krakow Academy.
    Correspondence address: januszziarko@interi.pl
[2] Monika Ostrowska, PhD - Professor at the KAAFM, Deputy Dean of the Faculty of Security Sciences at the Andrzej Frycz Modrzewski Krakow Academy of Andrzej Frycz Modrzewski Krakow Academy.
    Correspondence address: m.ostrowska@onet.pl

unclear, and ambiguous social environments, oriented towards improving POS. It allows one to deal with very-complex POS problems which are difficult to identify and which cannot be solved by relying on standard methods and attitudes. It supports a user-orientation, creativity, and innovation, as well as out-of-the-box thinking and behaviour, all of which stimulate change. The research problem was formulated in the form of the question *What opportunities does design thinking create for entities which undertake projects, such as local governments and citizens, intending to shape communities, enabling them to handle threats to POS?* The study featured a qualitative approach in a form which made it possible to analyse codified information concerning, on the one hand, the conditions which influence the work of design teams engaging local communities in activities oriented towards POS, and, on the other hand, relating to the learning of opinions and ideas shared by community members with first-hand experience in activities oriented towards POS at the local level.

Challenges for local government leaders connected with POS projects

Thesis: In a stable social environment, effectiveness in the field of POS is achieved by overcoming the diversity of actions and promoting the implementation of adopted safety strategies. By comparison, in an unstable environment, diversity becomes a friend for those whose actions are oriented towards POS, because it opens up new opportunities for success.

Local leaders need a methodology and social technology which will allow them to surmount the obstacles which impede action, thus achieving favourable results for people by raising their sense of security. Design thinking is an approach to innovation which, by being human-centred, and by putting emphasis on observing and learning humans' diverse needs, facilitates progress in creating and implementing innovative solutions to problems in the field of POS. Referring to the definition of design thinking formulated by Tim Brown for the needs of POS, we may say that 1) design thinking is a field of study which, by relying on a designer's sensitivity and methods, consolidates a local POS strategy with the needs of people, and with what is socially workable, which can be transformed into value for citizens, and which opens up new opportunities in the field of POS, or that 2) design thinking is a human-centred approach to innovation in the field of POS which draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements which determine success in improving and modernising activities oriented towards POS (Brown, 2020).

The reason for applying design thinking to POS projects is the fact that this approach is an effective way to solve difficult POS problems, and that the needs of people always remain, regardless of the scale of the problem, the focus of interest. Together with the growing competence of local leaders in the field of design thinking, the voices and needs of citizens are increasingly often becoming factors affecting the design process and shaping its outcome. By applying design thinking to activities oriented towards POS, it is much

more probable that the solutions one comes up with will have a greater and long-lasting influence on the levels of POS, since those for whom the solutions are designed are more likely to identify with them. By paraphrasing the words of many design thinking researchers, it can be assumed that the local leaders who rely on design thinking in their activities oriented towards POS:

— are characterised by readiness to constantly re-design their solutions to achieve, with each subsequent proposal, progress in the field of innovation and productivity, contributing to the reduction of threats and the enhancement of POS (Martin 2009);

— think that design thinking provides local leaders with a framework for undertaking complex human-centred challenges, and making the best-possible decisions as regards the control and elimination of threats to POS;

— know that design thinking in the field of POS effectively combines a diversity of outlooks and narratives in an emphatic environment, which is an indispensable condition and tool for promoting interdisciplinary cooperation, and creating measurable advantages in activities oriented towards POS;

— expect project participants to change their attitudes: from solving problems to identifying problems, and the leaders to set up an internal culture which encourages thinking, creation, and improvements, as well as the building of strategic partnerships in order to put forward new proposals of value (SAP);

— aim at drawing conclusions from the world of design and using them to become visionary leaders: cooperative, creative, aware, and responsible;

— consider design thinking a social technology which is potentially capable of doing for innovation exactly the same thing that TQM did for production – release the full creative human energy, gain people's engagement, and improve processes dramatically.

As results from the foregoing, design thinking in relation to POS requires one to apply various ways of thinking, including holistic, divergent, convergent, and analytical thinking; see Figure 1.
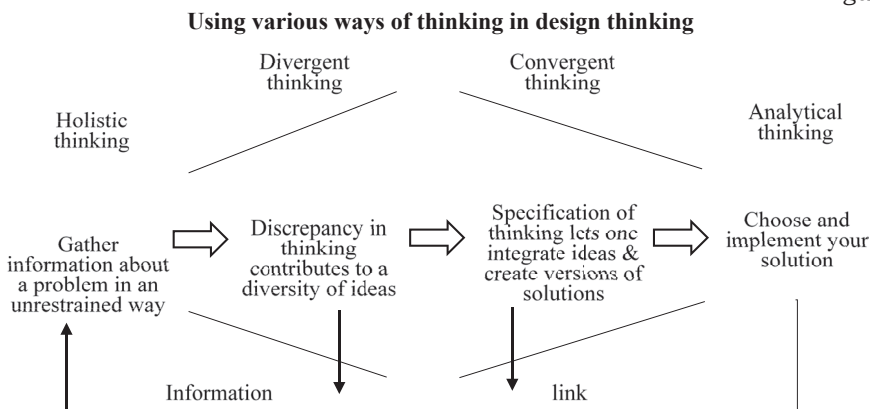
Figure 1

Using various ways of thinking in design thinking

Source: Brown T, Design thinking defined. Electronic source: https://design-thinking.ideo.com/, accessed: 14.05.2020.

It can be seen that design thinking combines various ways of thinking, and draws on logic, imagination, and intuition, thereby aiming at understanding people in a situation and identifying the relevant threats. As a result, it makes it possible to define original solutions, and tactics for implementing them, which will enhance people's safety. Design thinking reduces the uncertainty and risks connected with innovation, and, through a series of prototypes, tests and improvements of ideas, enhances the solutions. Specificities of POS projects that require design thinking

A project is an undertaking carried out within an organisation which is new, atypical, and different from routine activities, with which a given organisation has never dealt before. The novelty, atypicality, and complexity of POS projects suggest that the resources necessary to implement them involve various forms of knowledge. Knowledge can be either codified (e.g. in the form of project management standards) or take the form of 'best practices', which contribute to finding pertinent solutions to specific problems. That knowledge, created and shared in local communities involved in the implementation of POS projects, helps improve communication and share experiences, develop cooperation strategies that take cultural differences into account, and demonstrate how to develop individual and local competence in the field of safety. POS projects implemented in a social environment which is complex, ambiguous, changeable, and full of uncertainty, are unique. By implementing them, one finds it not very useful to copy experiences in the form of the same sets of mental and physical activities, which can only serve as support in design works and decision-making. The uniqueness of such projects requires a creative and innovative model of action.

The challenge faced by POS projects is to work out 'what to create', and to propose a satisfactory 'functional principle' which could ensure the achievement of the desirable value. This means that we have to simultaneously create a 'thing' (a facility, service, system) and a 'functional principle', which is commensurate with the problem. The need to identify two 'unknowns' in an equation leads to design practices which are completely different from other conventional problem-solving practices; see Figure 2. This requires a designer to immerse himself or herself in the world of the citizens, since it will allow him or her to better understand their needs, expectations, fears, and anxieties. It makes it necessary for the designer to use relevant methodological paradigms, ensuring methodological correctness in information gathering and processing on the one hand, and effectiveness in pursing project aims on the other. This brings us to the question *How can we address the challenge connected with the selection of the most important data to be collected during the discovery process?* By answering it, we will assume that the arsenal of the methodologies of design approaches features well-thought-out (and efficient) strategies, and by applying one, we will be able to meet the creative challenge of developing both the 'thing' and the 'functional principle', related to achieving some desired value. The strategies include approaches implemented in the paradigm of design thinking centred on the human – the client – see Figure 2.

Figure 2

Concept of the human-centred design approach
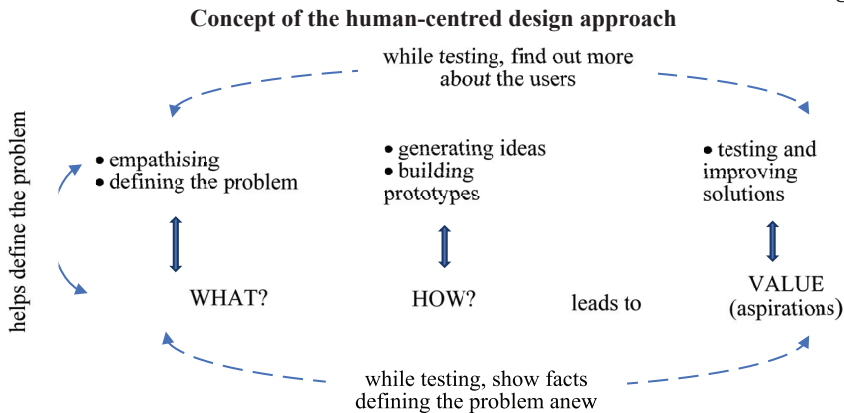
Source: Dorst K, The core of 'design thinking' and its application, *Design Studies* 2011, November, Vol. 32(6), p. 523; Elmansy R, Design Thinking in Schools: Building a Generation of Innovators. *Electronic source*: https://www.designorate.com/design-thinking-in-schools/, *accessed*: 20.03.2020.

The challenge posed for the participants of a POS project is connected with design, which represents open and complex problems, addressed in dynamic environments, in the case of which design teams have to look for new, non-trivial approaches. That obliges designers to produce and to refer to the results of empirical research which particularises a problem, in order to identify, in an objective way, the threat, and the factors which condition it, or an event which has some relation to activities in the field of safety.

We will assume, based on the analysis of the relevant literature, and our own observations, that design thinking is a three-step analytical and creative process, an interlocking cycle of actions: 1) inspiration (empathising, defining the problem), 2) ideation (generating ideas, building prototypes), 3) implementation (testing, implementing, and improving solutions) – see Figure 3. On the one hand, it results in an exhaustive description and explanation of the key factors in the subject matter of a project, taking account the needs, desires, and values which are significant for the client, and, on the other hand, opens up perspectives for creating socially expected, technologically viable, and innovative solutions, which makes it possible to achieve project aims of future importance. This is a design approach centred on the user, oriented towards an in-depth understanding of his or her needs, allowing one to see a problem from multiple angles, and seek solutions by following unbeaten tracks, materialise solutions, and constantly improve them, based on feedback obtained from the users.

Figure 3

Interlocking cycles of design thinking: inspiration, ideation, implementation

3) Implementation   1) Inspiration

2) Ideation
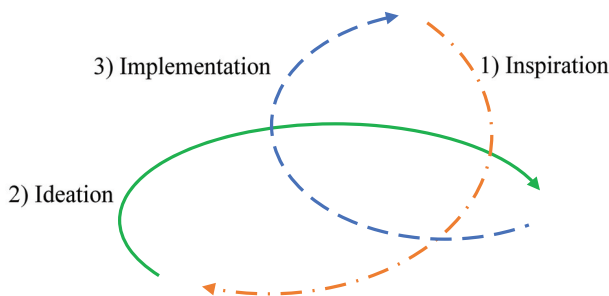
Source: Brown T, Design thinking defined. Electronic source: https://design-thinking.ideo.com/, accessed: 14.05.2021.

Design thinking is best considered a system of converging activity cycles: inspiration, ideation, and implementation, and not as a sequence of well-ordered steps. Inspiration is thinking about a problem and the opportunities it creates. It makes one think about a problem as if it were a challenge, and about the opportunities it affords, which motivate one to seek and discover new perspectives, and suggest solutions for a given perspective. Ideation is the process of generating, developing, and trying out ideas, creating models of solutions, and making them clear, tangible, verifiable. The implementation is arriving at solutions perceived as a path going from a stage in a project to the users, to the people for whom and with whom those solutions are worked out and implemented.[3] The design approach assumes an uninterrupted cycle of observing, analysing, defining, creating, and constantly improving solutions, approximating the values appreciated by the client, combining analysis and practice in a creative way. The most important thing is that the cycle has no end, since we are constantly one step behind an even better solution. This allows one to introduce as many improvements as are necessary, and which apply to the way of solving both the primary problem and the problems which arise during the implementation, as well as the product or service created as a result.[4]

Design thinking as a human-centred approach

Design thinking, the essence of which is expressed by the triad inspiration (thinking about a problem and the factors making one seek solutions

---

[3] Dam R.F, Siang Yu T, Stage 2 in the Design Thinking Process: Define the Problem and Interpret the Results. *Electronic source*: https://www.interaction-design.org/literature/article/stage-2-in-the-design-thinking-process-define-the-problem-and-interpret-the-results, *accessed*: 15.01.2022.

[4] Duncan W.R, A Guide to the Project Management Body of Knowledge. Pennsylvania, 1996, p. 4.

to it), ideation (the process of generating, developing, and testing ideas), and implementation (the way leading from a stage in a project to the satisfaction of people's needs), is an approach to, and a way of seeing, the world. One might find it useful in undertakings organised by local governments and local communities which need open minds, draw from cultural diversity, the experiences and knowledge of people who cooperate with one another, which are based on the creative ideas of others, leaving aside traditional ways of doing things. Undertakings oriented towards the development of functional principles centre on the creation of products and services for POS which are human-centred and adapted to current problems and their conditions in a given time and place. Design thinking combines our capabilities, such as intuition, pattern recognition, and formulation of ideas of emotional and functional significance, employing rational and analytical thinking. Such an integrated approach lets one identify difficult problems and create and implement socially needed products and services which will eliminate those problems, as well as to constantly improve the products and services.[5] What is required, and what should design thinking be?

Design thinking should involve learning in action, which is both exploratory and experimental. All phenomena which take place in a local environment affect its local community. Design thinking, by relying on a wide range of local stakeholders, allows one to acquire knowledge of those phenomena. Designers are recommended to study the social environment, observe the real experiences of various groups of citizens, for example students and teachers or healthcare workers, during their daily routines. It is also important that they cooperate with local partners who explain to them the observable phenomena by setting them in different contexts, as it helps one build credibility and ensures understanding. The reflection which accompanies design thinking and acting stimulates the generation and analysis of ideas, and the visualisation and transformation of the ideas into tangible representations so as to stimulate further learning through reflection and discovery.[6] This is facilitated by the exploratory and experimental character of design thinking, its tolerance of ambiguity, and orientation towards the future. The optimistic iterative character of design thinking, in turn, makes it particularly effective in handling the dynamics of local communities. Studying the phenomena taking place in a complex and changeable local environment, considered to be pro-active learning, is indispensable to understanding the various situations and cause-and-effect relationships which threaten POS.

---

[5] Brown T, Wyatt J, op. cit.; Cousins B, Design Thinking: Organizational Learning in VUCA Environments, Research Article 2018, Vol. 17(2). *Electronic source*: https://www.abacademies.org/articles/design-thinking-organizational-learning-in-vuca-environments-7117.html, *accessed*: 29.03.2022.

[6] Boland R.J, Collopy F, Lyytinen K, Yoo Y, Managing as designing: Lessons for organization leaders from the design practice of Frank Gehry, *Design Issues* 2007, No. 24, pp. 10–25.

Design thinking should be direct and concentrated, with due frequency, on the absorption of knowledge from the key areas of an environment. This is important, as creating value requires the skills of quickly and aptly collecting knowledge coming from fields which are key to certain projects, as well as effectively using this knowledge, especially as feedback, as an important factor in delivering and enhancing value.

This requires synthetic thinking, which distils information, and transforms it into ideas which, in turn, can lead to solutions or opportunities for change. By testing competitive ideas and contraposing them, we increase the likelihood that the outcome will be bolder and more convincing. Such an approach in thinking helps one multiply solutions and facilitates choosing the right one.[7] It is important that one be aware of the fact that there is a great disparity in skills between the way in which we gather information in design thinking and the way in which it is shared within a team, and how we share it with people who, based on it, are supposed to devise a solution, since many people do not share it and instead keep it for their own purposes. The directness of design thinking is the key advantage in promptly reacting to the changeable, uncertain, complex, and ambiguous environment of POS. It requires one to invest in the absorptive capacity of the design team and the beneficiaries of a project, since the absorptive capacity can ensure the quick identification of the sources of threat in an environment, and also facilitates learning, thereby increasing openness to innovative actions. In dynamic environments, design thinking supports an organisation's capacity to revise its understanding of the situation of an environment, thereby reducing the effects of changeability, and overtakes complexity, and, by staying close to the external environment, can accelerate and lend credence to decisions.[8]

Design thinking needs interdisciplinary, well-organised, and culturally diverse teams which are capable of ensuring its effectiveness. It needs a strong team which will drive the thinking. A strong team is one based on knowledge, being able to absorb and develop that knowledge by learning within a team and outside it, and use the knowledge effectively. The point here is not merely to acquire knowledge within a team; the way in which this knowledge is shared between members of that team is the issue. The exchange of knowledge supports the creation of value, so one needs the team skills of seeing and explaining different relationships between the knowledge and the way in which the knowledge that is accumulated can refer to the different areas of operation, and how to share this knowledge and use it to create value. The role of design teams is to discern the key factors and relationships between them, and which factors have an

---

[7]   Brown T, Wyatt J, *op.cit.*

[8]   Adams T, Stewart L, Chaos theory and organizational practice: A theoretical analysis of the challenges faced by the New Orleans police department during hurricane Katrina, *Public Organization Review* 2015, No. 15(3), pp. 415–431; Bartscht J, Why systems must explore the unknown to survive in VUCA environments, *Kybernetes* 2015, No. 44(2), pp. 253–270.

impact on the development of threats for POS, and to make a critical assessment of them, and present the results of the assessment to project participants, taking account of the current circumstances in which the project will be implemented. On the other hand, a team is a collection of people and the relationships that coordinate their actions, who acquire, develop, and share knowledge, people who operate in a specific organisational culture and the context of that culture. It is therefore worth gaining insight into the organisation of a design team, looking for an answer to the question *What is the team supposed to be, what should be its structure, qualifications and culture, so that it will be able to show its absorptive capacity and capability to learn?* The organisation of a team and the demands made on design teams should be looked into in the context of the abundance of subject matter and participants in POS projects. After all, they have an influence on the choice and working out effective models and methods for shared activities, and therefore decide on the specificity of the design work. The models and methodologies worked out by the teams should specify the rules, techniques, and tools which standardise the analysis of the current situation threatening POS, taking into account the environmental results and leading indicators, which makes it possible to prioritise and evaluate the factors and activities having influence on the current and future state of POS.

One can formulate the thesis that in local government bodies, there are not many design teams which have developed the capability of design thinking. Some of them intuitively use certain aspects of design thinking, but most of them, as of today, do not adopt this approach as a way of going beyond conventional problem-solving. Experience tells us that one of the main obstacles to adopting design thinking is the fear of failure. The view that experimenting and the failure that might come with it are nothing bad insofar as they occur at an early stage of a project and are a source of knowledge might be difficult to accept. The culture of design thinking encourages one to create prototypes – in a quick, cheap, and easy way – as part of the creative process which seeks the best solutions. It depends on the design team whether the activities oriented towards POS, initially experimental, will be, over the course of time, verified by people favourably or not. The activity received favourably gains appreciation, and is accepted by a local community, becoming a model functional principle of universal use. However, the low effectiveness of the practised forms of preventive activity oriented towards POS makes people fail to understand the concept behind the enterprises, which results in indifference or dissatisfaction, and lowers people's sense of security; such projects get rejected. Such a situation demands that managers – designers – keep in touch with the local social and cultural reality and use the knowledge and experience of the residents with regard to POS. Thanks to the mutual interaction of theory and practice in the field of POS, the functional principles for POS can be constantly improved. The point of constantly updating the functional principles for POS is that it constitutes the basis for working out detailed plans and programmes for POS.

Conclusions

Design thinking is not a widespread discipline, especially in Poland, which does not mean that it is easy to apply, especially in the case of solutions engaging entities in local communities into activities oriented towards POS. It is a discipline which requires local entities to take greater interest in it, as it creates opportunities for taking account of the dynamics of the object of design, which is POS in the current circumstances of place and time. As a result, design thinking as a prolific discipline broadens the design opportunities, thereby becoming interesting. The significant factors of POS design models are time and space, which is why there are no universal models which are always applicable and can be adopted in any local environment. Social and economic changes and social and technological growth require the constant updating of functional principles for the POS used in different local environments, to which design thinking is conducive.

The methodological design approach to enterprises in the field of POS is not a concept which has been brought to perfection. Hence, this is an ideal setting to put forward new propositions for methodological solutions, or ideas which improve the former methods of design activity. The current requirements are those which call for design that is better adapted to local needs, so the functional principles for POS can broaden the range of the forms, methods, and measures that enhance the sense of security among residents. The activities oriented towards POS, drawing from design thinking, better integrate various entities, individuals, and institutions, which increase the possibility of the effective control of threats and of keeping them at an accepted level, despite dynamic changes in the social, cultural, technical, and technological spheres.

References

1. Adams T, Stewart L, Chaos theory and organizational practice: A theoretical analysis of the challenges faced by the New Orleans police department during hurricane Katrina, *Public Organization Review* 2015, No. 15(3).
2. Bartscht J, Why systems must explore the unknown to survive in VUCA environments, *Kybernetes* 2015, No. 44(2).
3. Boland R.J, Collopy F, Lyytinen K, Yoo Y, Managing as designing: Lessons for organization leaders from the design practice of Frank Gehry, *Design Issues* 2007, No. 24.
4. Brown T, Definitions of design thinking. *Electronic source*: https://designthinking.ideo.com/blog/definitions-of-design-thinking.
5. Brown T, Design thinking defined. *Electronic source*: https://designthinking.ideo.com/.
6. Brown T, Wyatt J, Design Thinking for Social Innovation, *Stanford Social Innovation Review* 2010, Winter. *Electronic source*: https://ssir.org/articles/entry/design_thinking_for_social_innovation.
7. Cousins B, Design Thinking: Organizational Learning in VUCA Environments, *Research Article* 2018, Vol. 17(2). *Electronic source*: https://www.abacademies.org/articles/design-thinking-organizational-learning-in-vuca-environments-7117.html.
8. Dam R.F, Siang Yu T, Stage 2 in the Design Thinking Process: Define the Problem and Interpret the Results. *Electronic source*: https://www.interaction-design.org/literature/article/stage-2-in-the-design-thinking-process-define-the-problem-and-interpret-the-results.

9. Dorst K, The core of 'design thinking' and its application, *Design Studies* 2011, November, Vol. 32(6).
10. Duncan W.R, A Guide to the Project Management Body of Knowledge. Pennsylvania, 1996.
11. Elmansy R, Design Thinking in Schools: Building a Generation of Innovators. *Electronic source*: https://www.designorate.com/design-thinking-in-schools/.
12. Gasik S, Model zarządzania projektami publicznymi, Kwartalnik Naukowy Uczelni Vistula 2014, No. 2(40).
13. Holmes B, Citizens engagement in policymaking and the design of public services, Parliament of Australia, Department of Parliamentary Services, *Research Paper*, No. 1, 2011–12. *Electronic source*: https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1112/12rp01.
14. Introduction to Design Thinking. *Electronic source*: https://experience.sap.com/skillup/introduction-to-design-thinking/.
15. Liedtka J, Exploring the Impact of Design Thinking in Action. Virginia, 2018.
16. Liedtka J, Why Design Thinking Works, *Harvard Business Review* 2018, September–October.
17. Martin R, The Design of Business. Boston, 2009.
18. Naiman L, How Design Thinking Adds Value to Innovation. *Electronic source*: https://www.creativityatwork.com/2016/07/18/how-design-thinking-adds-value-to-innovation/.
19. Naiman L, Research that illustrates the impact of design thinking for organizations. *Electronic source*: https://www.innovationtraining.org/design-thinking-research-impact-outcomes-results/.
20. Pawlak M, Zarządzanie projektami. Warszawa, 2006.
21. Quayle M, Designed Leadership. New York, 2017.
22. SAP, Design Thinking and Digital Transformation, 2016. *Electronic source*: https://www.sap.com/documents/2016/12/4086 a5d3-9d7c-00 10-82c7-eda71af511fa.html.

Summary: The main purpose of this article is to provide a theoretical synthesis of the results of research into design thinking published in the literature in order to (a) better understand its principles, characteristics, and accompanying processes, and (b) propose ways of using the conclusions regarding design thinking in activities focused on public order and safety (POS) in local environments.

Resumen: El objetivo principal del presente artículo es hacer una síntesis teórica de los hallazgos sobre el pensamiento de diseño en la literatura para a) comprender mejor sus principios así como sus características y los procesos que lo acompañan, y b) proponer formas de utilizar los hallazgos obtenidos en materia de pensamiento de diseño en las actividades de seguridad comunitaria y orden público.