FACTORS AND MECHANISMS OF CREATING AN INNOVATIVE CULTURE IN AN ORGANIZATION

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Purpose: The aim of the article is to study the category of innovative culture if the organization, to establish its relationship with the organizational culture as well as the factors, dimensions and mechanism of its creation.

Design/methodology/approach: Desk research and critical analysis methods were used in the research. The methods used are based on a review of the literature, documentary and theoretical, in order to find publications related to the categories of "innovation culture", "organizational culture". The databases studied are Semantic Scholar, Science Direct and Research Gate. The selected period is 1990-2022.

Findings: During the research, on the basis of the analysis of the existing concepts of creating an innovative culture, its original character in relation to the organizational culture was justified, factors, dimensions and the mechanism of creating an innovative culture in the organization were identified.

Practical implications: The results of the research make it possible to identify the key factors of an innovative organizational culture, to understand the principles and mechanism of its creation. The results can be useful for companies and organizations actively involved in innovative activities to develop strategic planning documents.

Social implications: The research results make it possible to understand the place and role of innovation in building a knowledge-based economy and to make people aware of the need to create pro-innovative attitudes of society.

Originality/value: The proprietary concept of an innovative organizational culture was presented, its dimensions were proposed to be classified, and a mechanism for its creation was developed. The article is addressed to the managers of enterprises, organizations and institutions dealing with innovative activities.

Key words: innovative culture, innovation, organizational culture.

Category of the paper: Research paper.

1. Introduction

The creation of a knowledge-based economy is based on the growth of its innovativeness as the ability to quickly and effectively introduce new solutions in the field of technology, products and services, organization and marketing into the practice of business activities of enterprises. The source of innovation is the original idea. But before this idea is put into practice and brings the expected results in the form of increased profits, strengthening the competitive position, expansion on the market, a lot of effort should be devoted to the implementation of individual stages of the innovative cycle. Creating innovative products is characterized by tendencies to shorten the life cycle, increase costs and risks. Solving this problem requires changing the very philosophy of conducting innovative activity and perceiving it in terms of the organizational culture of enterprises. Therefore, in scientific publications, organizational culture and innovative culture are more and more often the subject of research. The aim of the article is to study the category of innovative organizational culture, to establish its relationship with the organizational culture as well as the factors, dimensions and mechanism of its creation. Desk research and critical analysis methods were used in the research. The methods used are based on a review of the literature, documentary and theoretical, in order to find publications related to the categories of "innovation culture", "organizational culture". The databases studied are Semantic Scholar, Science Direct and Research Gate. The selected period is 1990-2022.

2. Determinants, structure and dimensions of an innovative culture

The growing importance of innovation in the development of the modern economy manifests itself in the increased interest of researchers and practitioners in scientific issues related to various aspects of conducting innovative activities. Scientific publications increasingly emphasize the need to perceive this activity as a philosophy of doing business in general. Each innovation begins with the emergence of a certain idea to introduce changes in these or other spheres of the company's economic activity in order to increase the efficiency of their operation. Since the source of every idea is a human being, the issue of the growth of innovation should be considered through the prism of the functioning of the entire enterprise, and not only focus on the processes that take place strictly within the stages of the innovative cycle. An idea transforms into an innovative product only under certain conditions, which can be briefly presented using the "know – can – want" model (Oksanych, 2021). This means that the implementation of the entire innovation cycle – from the emergence of an idea to the commercialization of an innovative product – requires appropriate knowledge, resources and employee motivation. Creating these conditions must be systemic and concern all functional spheres of the organization. This determined the emergence of the category of innovative culture. It is very often analyzed in the context of organizational culture.

Organizational culture or "Corporate Culture" interpreted as a set of values and norms that has been accepted and complied on by members. Culture creates a sense belonging for organization members. Organizational culture also applicable as a framework which set guidelines for member behavior, thus lead to a particular decision for members and directs their actions to achieve organizational goals (Tama, 2019).

Organizational culture can be defined as "a pattern of basic assumptions that a group has invented, discovered, or developed when confronted with environmental problems and internal coordination problems that functioned well enough to be considered proven and valid by the group, and that are communicated through the process. socialization to new members of the group as a proper way of perception, interpretation and action in the face of the above problems of external adaptation and internal integration" (Schein, 2004).

A. Poskien interprets organizational culture as "a complex set of ideologies, commitments, traditions and values that are common to the entire organization and that influence the way the organization manages its overall performance, becoming a potential source of advantage, progress and innovation" (Poskien, 2006).

A similar definition is presented by W. French, who describes the organizational structure as "values, beliefs, assumptions, myths, norms and goals that are commonly accepted in organizations" (French, 1990).

Many researchers pay attention to the close links between organizational culture and innovation activities (Aboramadan et al., 2020; Azeem et al., 2021; Chen et al., 2018; Farley, Hoenig, Ismail, 2008, Harel, Schwartz, Kaufmann, 2021; Hartmann, 2006; Guerlek, Tuna, 2018; Leal-Rodriguez et al., 2018; Palmen, 2012; Szczepanska, Dacko-Pikiewicz, 2015; Zieliński, 2011; Zołnierski, 2017).

According to the report of the National Center for Research and Development, the components of organizational culture are:

- patterns of thinking, i.e. values and norms allowing employees to adopt common, uniform criteria for assessing phenomena,
- patterns of behaviour defining ways of responding to various types of stimuli,
- symbols, including: physical (clothes, badges), linguistic (professional jargon, communication style, used anecdotes), behavioural (rituals, ceremonies), personal (authorities, mentors) (Żołnierski, 2017).

The review of the presented definitions of organizational culture and its connections with innovative activities lead to the conclusion that the company's innovation depends on a "set" of standards, rules, principles commonly accepted by employees, etc. It follows that narrowing down the scope of using organizational culture elements to the area of innovative activity determine the concept of innovative culture as an organizational part of culture. According to the source (Prokopowicz, Pawlak-Michułka, Rudnicki, 2018), "the culture of innovation is the values, beliefs and methods of action shared in an organization or society that favor the creation and implementation of new ideas and solutions".

It seems obvious that in its innovative activity an organization relies on formal and informal rules, norms, principles and models of conduct which are appropriate for it. In this context, "an innovation culture is the values, beliefs and ways of action shared in an organization or society that foster the creation and implementation of new ideas and solutions" (Prokopowicz, Pawlak-Michułka, Rudnicki, 2018).

However, this approach only works in the short term. In the long term, it is the innovative culture that determines the general culture of the organization, because the development based on innovation requires the application of its elements (the aforementioned rules, norms, etc.) on the scale of all functional spheres of the organization, which allow to create and effectively use its innovative potential. In the long term, an organization that bases its development on innovation will spread the elements of an innovative culture that prove effective in innovative activities into other functional spheres. In other words, in the long run, the innovative culture will be primary in relation to the organizational culture. According to Davies M, Buisine S. "culture of innovation" is a particular configuration that makes innovative thinking natural in the organization and encourages innovative activities at the level of all employees" (Davies, Buisine, 2018). According to L. Morris, "the innovation culture (…) is likewise an expression of people, their past, and their current beliefs, ideas, and behaviours. They make innovation happen, and they do so consistently over time" (Morris, 2007).

Innovative culture – it is a certain philosophy of its functioning, based on the use of mutually related formal ('hard' and informal 'soft' rules, norms, algorithms, principles, models of behaviour and conduct that relate to all aspects of its functioning and aimed at creating such attitudes) , beliefs and intentions of employees, which to the maximum extent ensure constant development based on innovation.

Among the factors for the development of an innovative culture, most sources indicate the pro-innovative attitude of the management (Macin, 2018; Czerska, Rudka, 2014; Ramos-Garza, Ramoz-Garza, 2019; Villaluz, Hechanova, 2018). A manager must be a leader, initiator of pro-innovative changes and provide support for initiatives aimed at the growth of an innovative culture. The quality of management is a very important factor in creating an innovative culture. The quality of human capital and the nature of communication within the organization are no less important.

In the scientific literature, the issue of human capital is presented quite broadly. One definition of this category is that the human capital is "the human factor in the organization; the combined intelligence, skills and expertise that gives the organization its distinctive character. The human elements of the organization are those that are capable of learning, changing, innovating and providing the creative thrust which if properly motivated can ensure the long-run survival of the organization" (Bontis et al., 1999). Human capital, on the one hand, is an object of management, and its functioning is subordinated to certain rules, principles, norms, etc., which are set "from above", on the other – human capital not only verifies them, reacting in one way or another to their impact, but also the source of rules, principles, norms and other elements of an innovative culture. The explanation of how effectively these elements

work is based on communication – both vertical and horizontal. It is in the communication process that the effectiveness of capital use and the effectiveness of the applied elements of innovative culture are verified. Experts point out that communication is one of the key problems in the use of human capital (Ployhart et al., 2014).

The innovative culture is multidimensional, therefore its structure can be analyzed in various planes.

According to C.B. Dobni, an innovative culture consists of:

- innovative intentions: propensity to innovate, acceptance of innovative orientation,
- -innovation infrastructure – learning, creativity and employee involvement,
- the impact of innovation – market orientation, value orientation,
- conditions for implementing innovations – implementation context (Dobni, 2008).

Experts of The Institute for Research and Innovation in Social Services distinguish three areas (internal factors) of the innovation culture, which are referred to as ABC:

A. Attitudes are tangible and refer to individual and organisational attitudes to innovation and improvement.
B. Bechaviours are intangible and refer to an individual's and an organisation's behaviours that can encourage or block innovation and improvement.
C. Capabilities are tangible and refer to an individual's and organisation's capacity for innovation and improvement through knowledge (knowledge, understanding and access to information and training on innovation and improvement). (Creating..., 2012).

According to M. Davies i S. Buisine, the innovation culture in organizations can be presented by ETOILe model, which contains:

- Environment/Links to the external environment/ Easy and speed collaboration/ Multiplicity and diversity contact points.
- -Team/Presence and recognition innovative teams/Promotion-oriented regulatory focus/ ---Excellence in complementary discovery skills.
- Organization / Shared attitudes in the organization / Product and consumer involvement / Processes that promote the use and recognition of discovery skills / Acceptance of error / Social representation of innovation.
- Individuals / Presence and recognition of innovative individuals / Emotional engagement / recognition of discovery skills.
- Leaders: Innovative leaders and managers / Mastery of discovery skills (Davies, Buisine, 2018).

Denison Consulting has developed a fairly detailed model of an innovative culture as a component of an organizational culture, which consists of the following elements:

- adaptability – creating change, customer focus, organizational learning,
- mission – strategic direction and intent, goals and objectives, vision,
- consistency – core values, agreement, coordination and integration,
- involvement – empowerment, team orientation, capability.

These elements are analyzed in the "external – internal" and "stable – flexible" coordinates (Introduction..., 2006).

Based on these assumptions, the state and development trends of the company's innovative culture should be assessed and analyzed on the basis of a three-dimensional model (Figure 1).

According to the proposed model, all elements of the innovative culture should be considered in terms of their division into:

- explicit (formal) and hidden (informal),
- stable & controlled and flexible & discreet,
- centralized and decentralized.

The division into overt and hidden makes it possible to determine the source of the elements of innovative culture and the spheres they relate to.
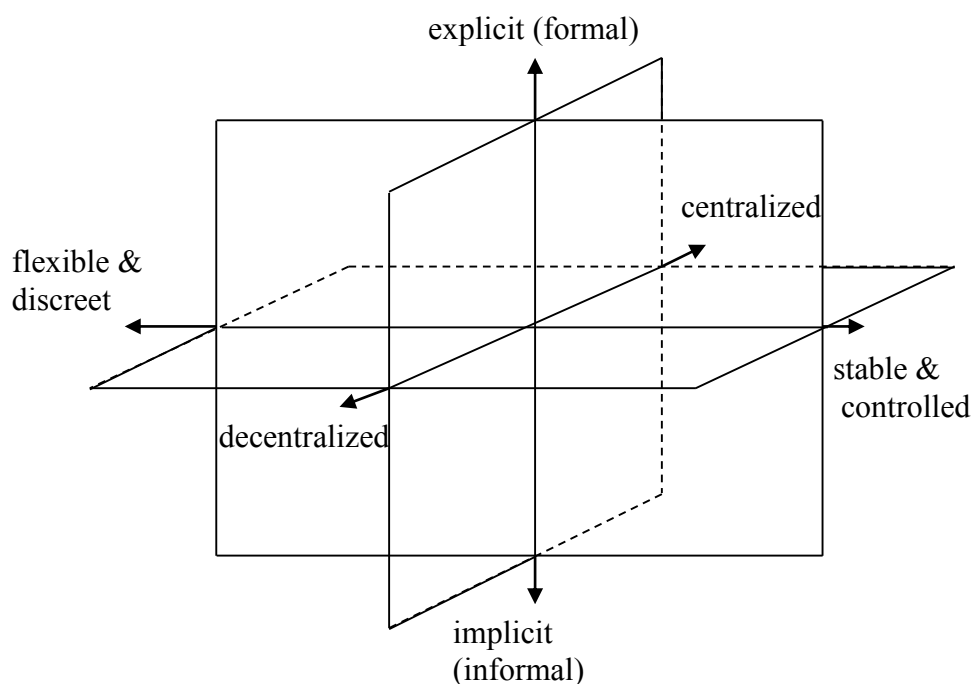
Figure 1. Model of innovative Culture Dimensions.

Source: Own study based on (Introduction..., 2006).

The division into fixed (rigid) and flexible allows taking into account the nature of the organization's response to the implementation of these elements.

The division into centralized and decentralized determines, on the one hand – the sphere of application of this or that element, on the other – the level of independence of organizational units in terms of their use.

3. The mechanism of creating an innovative culture in an organization

An innovative culture cannot be implemented like a specific management model. Culture is deeply rooted in the company's history, values and beliefs shared by employees, and so complex that it is difficult to change (Denison, 1996).

Creating an innovative culture in no case has to be associated with the implementation of a certain project or program. It is a continuous, consistent process of creating a model of human resources functioning based on the perception of such formal and informal rules, attitudes, principles and algorithms that would, to the greatest extent, ensure the pro-innovative development of the organization. The basis of this process is understanding, acceptance and commitment of all groups of employees to their creation and perception.

"The driving force" of the mechanism of creating an innovative culture is the appropriate attitude of the management and their assertiveness in striving to implement activities in accordance with the vision of the pro-innovative future of the organization.

The vision of how an organization must function is a necessary but insufficient factor in the functioning of the mechanism of creating an innovative culture. Top-down implementation of the management board's decision must be approved by teams of structural units and departments of the organization. Therefore, it is important to involve employees (primarily middle-level managers and front-line managers as well as opinion leaders) in the process of creating elements of an innovative culture, and this requires that most employees overcome the distance from perceiving and understanding the problems of the organization's development to the willingness to engage in solving them, according to known algorithm "perception – knowledge acquisition – assessment – perception – belief – acceptance – commitment" (Cameron, Quinn, 2011).

The key elements of an innovative culture – rules, attitudes, principles, algorithms, protocols, behaviour models, norms and traditions – are created over a long time horizon, which allows to verify their effectiveness through the mechanism of multiple iterations until their optimal composition and parameters are established. Final verification is done by the market. High innovative culture means ensuring high innovativeness of the enterprise, which means its strong competitive position. This thesis works well also at the macro level – the KEI (Knowledge Economy Index), SII (Summary Innovation Index) and GDP per capita indicators are characterized by a high level of correlation.

The diagram of the functioning of the mechanism of creating and developing an innovative culture in a company is presented in Figure 2.

The starting point for the mechanism of creating an innovative culture is the awareness by the management of the organization of the need for innovation, its acceptance and readiness to engage in innovative activities. On the one hand, this awareness results from the assessment of the external operating conditions and resources of the organization, and on the other – from the knowledge, qualifications, skills and talent of top managers. Top managers must have certain features: creativity, teamwork, tolerance to alternative points of view, ability to learn, flexibility, assertiveness, empathy. Of course, it is difficult to count on the fact that each of the

heads of the organization has all these features at a sufficiently high level. Therefore, the level of innovative culture is largely determined by the pace of development of these traits by higher-level managers, which is based on the ability to objectively assess their own advantages and disadvantages and the will to personal development (Cameron et al., 2006).

The environment has a great influence on persuading the management of the organization to create a vision of its future. The more innovative the external environment is, the more the management board of the organization will be convinced of the non-alternative nature of pro-innovative development and the greater the effort will be made to create appropriate attitudes of employees and their involvement in innovative activities. However, the process is based on the development and implementation of what is defined as elements of an innovation culture. These elements include formal (explicit) and informal (hidden) rules, principles, algorithms, protocols, norms, models of behaviour and conduct.
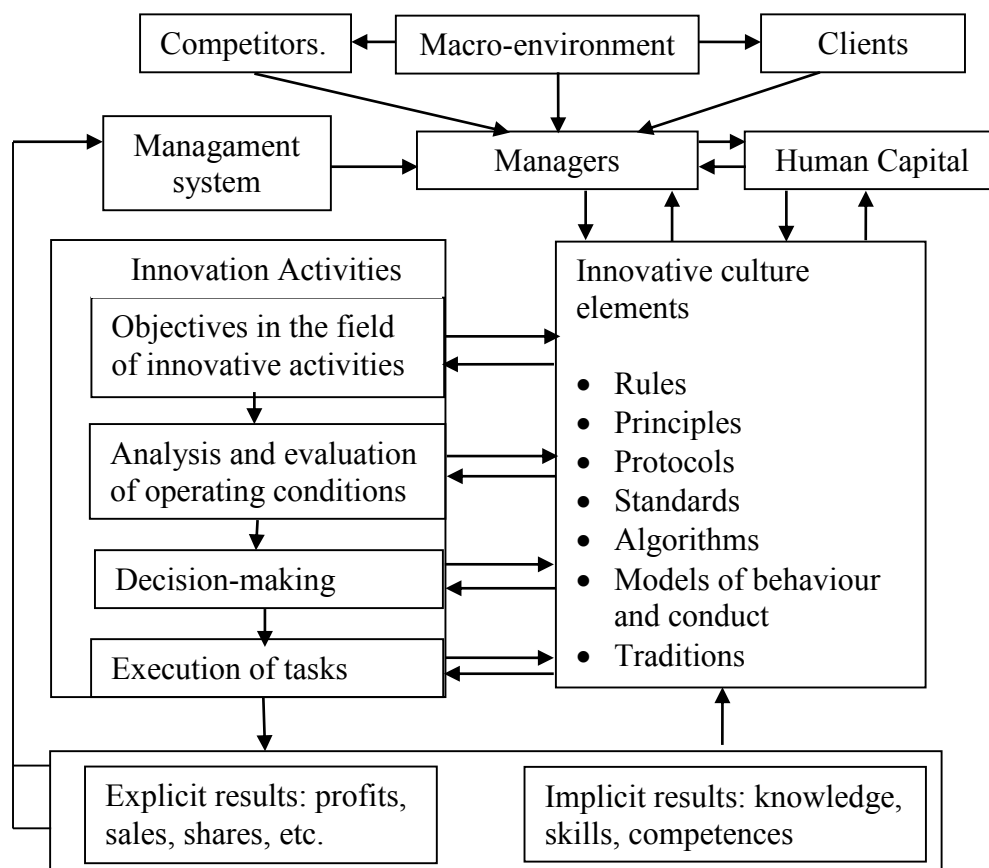
Figure 2. The diagram of the functioning of the mechanism of creating and developing an innovative culture in the company.

Source: Own study.

The process of creating an innovative culture is iterative and continuous, which results from the specific nature of the introduced changes. This specificity results from the following assumptions.

1. Apart from the formal (explicit) elements, the innovative culture also consists of informal (implicit) elements. Changes in them cannot be made "from the top", because the informal elements themselves are created "from the bottom", usually through informal communication between employees. Therefore, carrying out these changes is based on changing beliefs, attitudes and points of view. This requires a lot of effort on the part of the organization's managers in terms of explaining the necessity of changes, the expected effects, presenting the necessary information, and conducting formal and informal meetings with employees. This process also takes a long time.

2. The transformation of the informal (implicit) elements of an innovative culture is gradual and slow as it requires acceptance by the staff. It cannot be managed directly, but is the result of a change in employees' attitudes (above all, the attitudes of "opinion leaders").

3. The effectiveness of innovative activities largely depends on the effectiveness of creating and using human capital. Since the changes introduced in the cross-section of individual elements of innovative culture have a large impact on this process, the consequences of wrong decisions in the change process can be serious. Therefore, managing the process of creating an innovative culture must be very flexible and have an evolutionary character.

Each activity as part of innovative activity – from the formulation of goals to the practical implementation of projects (task implementation) – is based on the application of the above-mentioned elements of the innovative culture of the organization. Therefore, the results of innovative activity verify the effectiveness of the applied "set" of these elements, thus allowing the assessment of the model of innovative culture existing in the organization as a whole. The effects of activities in the implementation of individual innovative projects from the point of view of creating an innovative culture should be assessed not so much through the prism of direct (explicit) results of their implementation - cash flows, profits, competitive position, etc. – but by the effectiveness of the formal and informal principles, rules, algorithms, the protocols on which the innovation activity is based, and the communication systems. These effects of innovative activity are "implicit", informal, but they are the ones that allow to define the problem areas and barriers in the development of an organization's innovative culture, to determine which of the applied elements of the innovative culture are effective and which should be changed. Problematic areas and elements of innovative culture must be thoroughly analyzed, which allows to identify areas and scope of changes. "Understanding culture… can therefore be useful for two reasons. First, knowledge of the culture makes it possible to assess the extent to which members of the organization are willing to accept changes; secondly, it helps to identify the cause of the problems that hinder the development of the organization" (Szczepańska-Woszczyna, Dacko-Pikiewicz, 2015).

Striving to increase the level of innovative culture, the management of the organization and the team of employees directly dealing with this issue should find answers to the next question, according to a Kipling method „5W1H" (Table 1).

Changes in the each elements of an innovative culture make it possible to increase its level only with their acceptation by the employees of the organization and their involvement in their implementation. It should be remembered that some elements of innovative culture have "bottom-up" roots, ie. they are created by teams of employees. Therefore, it seems logical that the process of making changes to these or other elements of the innovative culture, or the implementation of a new element of it, should follow the scheme presented in Figure 3.

Table 1.
Key questions in the process of change in framework of creating an innovative culture

	Questions	Issues
1	Who?	Determining managers responsible for appropriate areas of innovation culture.
2	What needs to be changed?	Which of the elements of an innovative culture needs to be changed.
3	Where should the changes made	Identification of the area and scope of changes.
4	When?	Estimating deadlines and time horizons of changes.
5	Why should this be changed?	Building cause-effect relationships between the "defective" element of innovative culture and the results of innovative activity, justifying the need for changes.
6	How it should be changed?	Determining the activities necessary to achieve the goals and the sequence of their implementation.

Source: Own study.
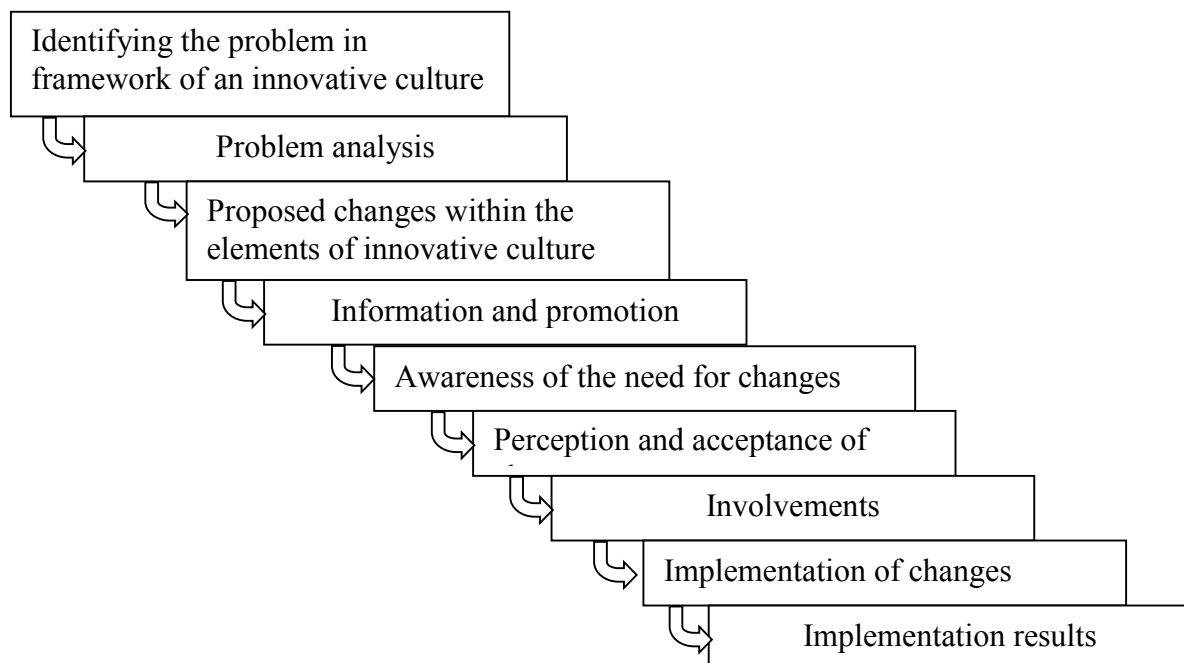
Figure 3. Diagram of the process of making changes to the elements of innovative culture.
Source: Own study.

The presented diagram applies not only to formalized activities (eg, the introduction of a new algorithm for financing innovative projects), but also activities in the field of informal ("implicit") elements of an innovative culture (eg, the principle of informal acceptance by the new manager's team of employees).

Feedback is essential as errors and shortcomings in each step can have a multiplier effect and hide the true state of the solution to the problem.

The effectiveness of the mechanism of creating an innovative organizational culture largely depends on the principles on which it is based. Their perception is crucial for the configuration of its structure and the relationship between its components.

Assuming that an innovative culture is based on the application of certain behavioural models, the following principles should be considered:

- balance of interests – ensuring a compromise of interests of various groups of employees, allowing for adequate motivation,
- flexibility – quick reaction to the change of the external and internal environment,
- systemic – taking into account the cause and effect relationships between all components of an innovative culture,
- tolerance – the ability to express each point of view, ensuring the most objective assessment of it,
- communication – development of formal and informal relations within the organization,
- involvement – what counts is the involvement of each employee in innovative activities,
- access to information – every employee must have access to information that concerns him to a certain extent,
- knowledge supplementation – each employee must constantly supplement his knowledge, and the organization must ensure access to its sources,
- continuity and consistency – creating an innovative culture is a permanent and continuous process,
- initiatives – supporting any idea to improve the efficiency of the organization's functioning.

4. Strategic aspects of creating an innovative culture

The increase in the level of innovative organizational culture is determined by the existing strategy of overall development and its component – the innovation strategy of the company This process is shown in Figure 4. However, attention should take into account the relationship between the choice of these strategies and the parameters (elements) of the innovative culture. On the one hand, the guidelines of the overall organizational development strategy and innovation strategy determine the "profile" of an innovative culture. For example, depending on the assumptions of the innovation strategy, the organization establishes a specific system of acquiring and disseminating knowledge or sets the rules of internal communication in. On the other hand, the innovative culture verifies the effectiveness of the innovation strategy and, through it, the effectiveness of the overall development strategy of the organization. For example, the effectiveness of the actions taken depends on the decision-making algorithm that is part of the innovative culture.
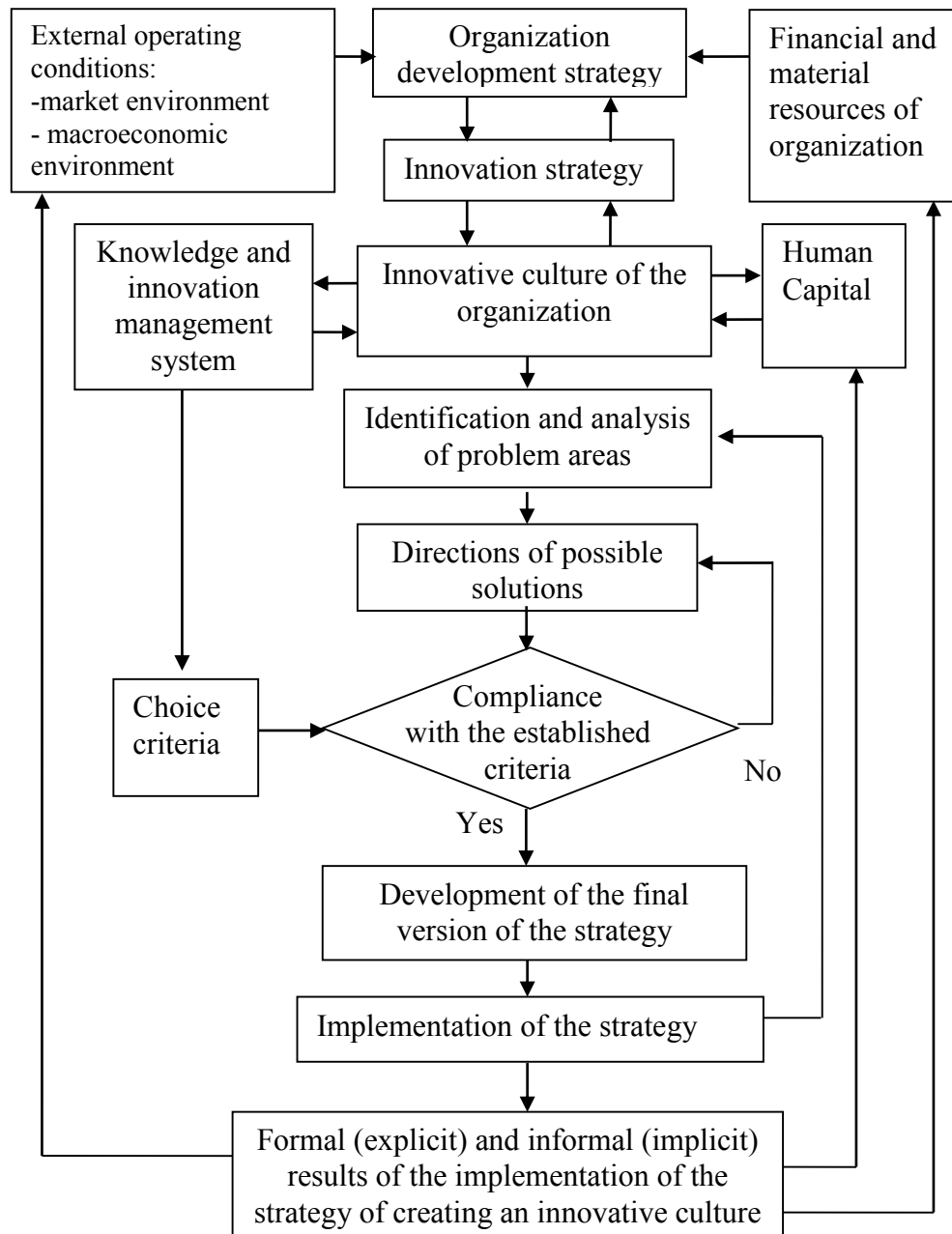
Figure 4. A diagram of a strategy for creating an innovative culture in the organization.
Source: Own study.

An important stage in developing a strategy for creating an innovative culture is the identification and analysis of its problem areas. In practice, this means an assessment of the cause-effect relationships between the elements of innovative culture and the results of innovative activities, determining the "weight" of individual elements, their state of development trends. At this stage, it is important to choose the methods of assessing the elements of the innovative culture and the reference base (e.g., the average level in the branch of the economy, the level of the leader or the level of prior measurement in the organization itself).

The assessment of the elements of an organization's innovation culture should be closely related to the parameters of the external environment, especially the market environment. These parameters characterize the state and development trends of the market, the behaviour of competitors, consumers and suppliers, and allow for the creation of specific requirements for individual areas of the organization's innovative culture as they serve as a basis for comparison in the process of establishing strategy goals and ways to achieve them.

The conducted analysis and performed assessments allow to determine the directions, spheres and time horizons of possible solutions. At this stage, it is important to keep the list of these solutions as long as possible. Those which, in the present conditions, will be considered the most effective and compliant with the applied selection criteria, become the basis of the strategy of creating an innovative culture. On the other hand, the remaining solutions should not be rejected, as they are the result of the efforts of employees and managers, and therefore elements of the intellectual capital of the organization and may be useful in other conditions.

In the process of developing and implementing the strategy of creating an innovative culture, the key role is played by the managers of the organization. Their task is to develop a general concept of an innovative culture, a vision of its optimal model. This vision translates directly into the scope, methods, strategy and tactics of innovative activity. The effects of this activity from the point of view of creating an innovative culture should be assessed not so much through the prism of the results of the implementation of individual innovative projects – cash flows, profits, competitive position etc., but by the effectiveness of the formal and informal principles, rules, algorithms and protocols on which it is based. innovative activities, and communication systems.

The assessment of the effects of innovative activity from this point of view allows to identify the problem areas and barriers to the development of an organization's innovative culture, to determine which of the applied elements of the innovative culture are effective and which should be changed.

In the process of implementing the strategy of creating an innovative culture, it is necessary to conduct an ongoing analysis of problem areas in order to correct the priorities, scope and directions of activities.

Formal (open) and informal (implicit) results of the implementation of the strategy of creating an innovative organizational culture have an impact on changes within:

- intellectual capital (new knowledge and experiences appear),
- financial and material resources of the organization (the level of income, profits changes, the quantitative and qualitative development of production systems, fixed assets, etc. is achieved),
- knowledge and innovation management system.

5. Summary

The mechanism of creating an innovative culture is based on the organization's management realizing the need for innovation, its acceptance and readiness to engage in innovative activities.

Each activity as part of innovative activity – from the formulation of goals to the practical implementation of projects (task implementation) – must be based on the application of individual elements of the innovative culture of the organization. Therefore, the results of innovative activity verify the effectiveness of the applied "set" of these elements, thus allowing the assessment of the model of innovative culture existing in the organization as a whole.

The effects of activities in the implementation of individual innovative projects from the point of view of creating an innovative culture should be assessed not so much through the prism of direct (explicit) results of their implementation – cash flows, profits, competitive position, etc. – but by the effectiveness of the formal and informal principles, rules, algorithms, the protocols on which the innovation activity is based, and the communication systems.

The effectiveness of the mechanism of creating an innovative organizational culture largely depends on the principles on which it is based. These are the principles of the balance of interests, flexibility, systemicity, tolerance, communication, commitment, access to information, supplementing knowledge, continuity and consistency, initiative.

Creating an innovative organizational culture requires the development of an appropriate strategy that is closely related to the overall development strategy of the organization and the innovation strategy. On the one hand, they determine the "profile" of an innovative culture, on the other – it is the innovative culture that verifies the effectiveness of the innovation strategy and, through it, the overall development strategy of the organization.

The presented result of research leads to the conclusion that creating a knowledge-based economy requires the development of a national innovation system that takes into account the behavioral aspects of the economy innovativeness, as the effectiveness of innovation policy will increasingly depend on pro-innovative attitudes of the society. Hence – the necessity to conduct research on the cause-and-effect relations between the creation of pro-innovative attitudes within the education and higher education system and the increase of the economy innovativeness. It seems that the practical needs of the knowledge-based economy will determine the timeliness of research on the impact of innovative culture on the creation of management systems at the enterprise level, the development of algorithms for the assessment of innovative culture and models for its creation.

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