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Enhancing Innovation Through Implementation of the Comprehensive Approach to Nurturing the Compliance Culture of the Worldwide Innovation Ecosystem

ABSTRACT

Objective: The innovative ecosystems consist of a large number of complementary elements, and their effectiveness depends on how well the elements interact with each other. Corruption erodes public trust, which is necessary to enable the cooperation of entities. The aim of the

research is to formulate the comprehensive approach to nurturing the compliance culture of the innovation ecosystem.

Methodology: This research study was realized with non-empirical (theoretical) research, which seeks solutions to problems using existing knowledge as its source. Prototyping of a new anti-corruption approach was based on usage of application of existing knowledge and existing experience resulting from the implementation of Norton Kaplan balanced scorecard and Kotter's process for leading change.

Findings: It was found that the balanced scorecard of compliance culture in innovation ecosystem might enhance anti-corruption outcome. Identification of nine anti-corruption variables and using them to plan and realize corruption prevention might influence the anti-corruption effectiveness.

Value Added: Model of acceleration of anti-corruption changes in the organization was proposed.

Recommendations: Proposed original, unique comprehensive approach to anti-corruption within organizations will help to achieve the positive effects faster, which will enhance positive anti-corruption trends within and outside the innovation ecosystem.

Key words: innovation, ecosystem, trust, corruption

JEL codes: M0, M2

Introduction

In the global innovation ranking, the gap between leading innovative economies and less innovative economies is growing year by year. This situation does not depend only on the amount of expenditure on innovation but also stability of economies and public trust (Porter, 1996; Fukuyama, 1996; Mitchell, 2012; Brakman Reiser & Dean, 2017).

Innovative enterprises are driven mainly by profit. Their operations tend to be rational, which is also manifested in the fact that they can take illegal actions in order to gain an innovation advantage. In the short term, such an operation can bring economic benefits from the point of view of an individual enterprise. In the long run, it erodes the whole arena of innovation and leads to weak economic outcomes. It is not the intention of this article to question the existence of economic opportunism within innovative sector. This phenomenon exists

and intellectual theft became a serious challenge for many companies and countries. It is also not the intention of this article to prove the negative influence of corruption to innovation. There is a lot of scientific research pointing the disastrous effects of corruption on the economy and society (Rose-Ackerman & Palifka, 2016; Chayes, 2016; Fisman & Golden, 2017; Dobrowolski, 2017).

Taking into accounts that corruption destabilizes the functioning of economy and in the same time the innovation ecosystem, the research has focused on establishing and introduction of innovative anti-corruption solutions, the implementation of which will allow the functioning of ecosystems in a compliance environment. In such an environment, the development of innovation is enhanced and at the same time protected by an umbrella of trust covering the entire ecosystem.

The paper is organized into four sections. Section 1 of this paper presents the research methods. Section 2 reviews scientific positions on conditions of innovation ecosystem existence. Section 3 presents original, unique approach to anti-corruption within organizations. Balanced Compliance Culture Model for Innovation Ecosystem and Balanced Scorecard Compliance Culture Model for Innovation Ecosystem have been shown. Nine variables that create the anti-corruption effectiveness matrix have been identified. Finally, the acceleration of anti-corruption changes in the organization has been proposed and described. Section 4 concludes the paper.

Materials & Methods

While reviewing the worldwide literature it was found that there is lack of research study on anti-corruption initiatives considered from the three-level approach to organization and the concept of balanced scorecard. Therefore, research efforts were focused on the development of the concept of a new worldwide approach to combating corruption in organizations.

This research study was realized with non-empirical (theoretical) research, which seeks solutions to problems using existing knowledge as its

source. It was assumed that future empirical research will provide data on the results of implementation of the proposed anti-corruption models and approaches. Prototyping of a new anti-corruption approach was based on usage of application of existing knowledge and existing experience resulting from implementation of Norton Kaplan balanced scorecard and Kotter's process for leading change.

Current state of knowledge

Innovation can be described as the result of the creative process of turning an idea into an outcome that creates value for people. Innovation tends to be customer-focused, providing a new product or a new way of doing things that adds value to our lives. The innovation process is the term used to describe the steps involved in taking an idea to adoption or market (New Zealand Government, 2019). Innovation ecosystem is the term used to describe the large number and diverse nature of participants and resources that are necessary for innovation. These include entrepreneurs, investors, individual researchers, university faculty, as well as service providers such as accountants, designers and providers of skills training and professional development (Jackson, 2011). It also includes local-government and government agencies, as well as, supreme audit institutions. They are crucial to successful ecosystem existence due to their role in implementing and maintaining compliance environment, which is necessary to the functioning of open and flexible ecosystem. All elements of innovation ecosystem affect each other in such way that they enhance innovative activities through the culture of innovation.

Successful innovative business activity is significantly influenced by the compliance culture of the macro and micro business environment. When stasis of economic partners is replaced by flexibility, which is required by turbulent and unpredictable environment, compliance culture shapes a sense of security, by building public trust in the individuals starting their business activity and the entrepreneurs already operating on the market. All

market participants are then convinced that the existing formal and informal institutions guarantee the responsible conduct of other entities, and due to possible sanctions to be imposed for breaking rules, they feel protected from the negative consequences of the actions of others (Pretty, Ward, 2001).

A high degree of public trust is beneficial to the economic sphere: it reduces transaction costs related to contract monitoring and enforcement, it facilitates cooperation and has a positive impact on enterprise innovativeness (Fukuyama, 1996; Knack & Keefer, 1997; de Clercq & Dakhli, 2003; Kaasa, 2007; Keeley, 2007; Dobrowolski, 2017). It facilitates the coordination of group activities, as well as the popularization and implementation of new technologies (Wallis, Killerby, & Dollery, 2004).

According to the research results on the European Union countries, there is a strong positive correlation between an average level of public trust and a summary innovation index. High public trust in Denmark, Sweden, Finland, and Switzerland favours greater innovation in those countries as compared to other European states. An opposite situation, confirming the above-mentioned correlations, exists in Central and Eastern Europe, and in particular in Bulgaria, Slovakia and Poland, as well as in Portugal, where a low degree of social trust accompanies a relatively low level of innovation (Młokosiewicz & Misiak-Kwit, 2017).

According to the United Nations, there is no single, universally accepted definition of corruption. For example, the United Nations Convention Against Corruption does not contain a single definition of corruption, but lists several specific types or acts of corruption (UNODC, 2004). There are, however, several co-called "working definitions" of corruption. For example, the definition used by Transparency of International is: the abuse of entrusted power for private gain. The working definition of corruption adopted by the World Bank Group is more oriented to the public sector. That definition is: the abuse of public funds and/or office for private or political gain. In terms of etymology, the meaning of corruption is significantly different from its Latin origin. The Latin word corruption means seducing or perverting

(Rose-Ackerman & Palifka, 2016; Chayes, 2016; Fisman & Golden, 2017; Dobrowolski, 2017).

The Civil Law Convention on Corruption, concluded at Strasbourg on 4 November 1999, defines corruption as requesting, offering, giving or accepting, directly or indirectly, a bribe or any other undue advantage or prospect thereof, which distorts the proper performance of any duty or behaviour required of the recipient of the bribe, the undue advantage or the prospect thereof. Taking into consideration that corruption can have a major negative impact on economy one can define corruption, as the abuse of public trust for private gain (Dobrowolski, 2017).

The innovation ecosystem comprises two distinct, but largely separated economies: the research economy, which is driven by fundamental research, and the commercial economy, which is driven by the marketplace. By design, the two economies are weakly coupled. The innovation ecosystem links those two economies creating some connections between them. An innovation ecosystem is efficient when the resources invested in the research economy (either through private, government, or direct business investment) are subsequently replenished by innovation induced profit increases in the commercial economy. At that point, the two economies (research and commercial) exist in balanced equilibrium and the innovation ecosystem is deemed to be healthy. This is expressed by the following equation (Jackson, 2011):

$P = P_0 (IR\&D) + \Delta P = P_0 (1-a) + \Delta P$, where P_0 is defined as the initial profit before the investments in fundamental research are made, P is defined as profits corrected for investment, $P_0 (IR\&D) = P_0 (1-a)$, $IR\&D = aP_0$, is defined as the commercial economy's research investment in the research economy, and ΔP is the innovation induced growth in the economy. Thus, a small amount of the profit, $IR\&D$, is reinvested in order to finance fundamental research (Jackson, 2011).

When the innovation induced growth in profits exceeds the initial government research and development investment (R&D), instead of being balanced, the innovation ecosystem is defined as growing. Clearly the goal of most of

today's government entities that fund innovation is to put their economies into a growth phase with increasing revenues taxable. One might naively assume that there are no serious constraints in ecosystems growth. The reality is different. First, the challenge to creating growth in an innovation ecosystem is the constant need for stable connections between research and market place. Different goals in research and commercial sector are challenging to link discoveries derived from research with innovative products that can translate into profits in the market place. Another challenge is the scarcity of implementation resources. The actors engaged in moving innovations from discovery through commercialization are academia, small businesses, the investor community, and commercial industry. A wide diversity of these actors, their otherness, results in the situation where many potential innovative concepts are not continued for lack of sufficient resources to develop them to a stage where industry or the investor community can recognize their commercial potential and assess the risk associated with bringing them to market (Jackson, 2011).

The question arises as to why these resources are insufficient. The need for banks to take into accounts operational risk limits their ability to provide loans. Another reason results from the communities of interests - the groups of entrepreneurs who prefer cooperation with well-known partners and are not too trusting in entering into new transactions. Finally, the limitation is the phenomenon of corruption that occurs in the private sector, and manifests itself in the preference for transactions with entities that give bribes. This situation applies to those business entities in which managers act on behalf of business owners (Dobrowolski, 2017).

One might assume that the most effective way of helping the ecosystem to thrive is by substantially increasing available R&D resources. Though this may successfully move more innovations into the commercial sphere, it does not guarantee a thriving innovation ecosystem because the assumption fails to account for resource limitations and other uncertainties that could limit growth and profits in the marketplace. For example, government

research and development investments are derived from tax revenues. This source is limited by other social needs and programs and international commitments (Jackson, 2011).

Data presented by OECD about new-to-market product innovators, manufacturing and services as a percentage of all businesses in each sector in most developed countries in the World has shown some tendency of entrepreneurs to innovation. Entrepreneurs from Belgium, Finland, Norway or Australia are more likely to innovate than entrepreneurs from Spain, Poland, Russia or Brazil (OECD, 2019).

There are many variables affecting this tendency, such as state policy in the field of innovation support, market development, and the education system that influences the innovative culture. The comparison of OECD and Transparency International data, however, indicates the relationship between the willingness of entrepreneurs to innovate and the level of trust resulting from the level of corruption in the state (OECD, 2019; Transparency International, 2019).

Regardless of countries, budget revenues are obtained mainly from various taxes, including indirect taxes (for example from VAT tax well known in the European Union). Governments must limit their fiscal policies, taking into accounts the tax systems in force in other countries and their impact on investors. Therefore, the possibilities of obtaining budget revenues are significant but limited. Reduction of budget revenues as a source of financing of innovations has objective premises, for example the necessity to eliminate excessive social differences resulting from the infrastructural underdevelopment of the State. Such situation has occurred in all post-communist countries in Central and Eastern Europe. Another reason is the insufficiency of tax revenues resulting from the weakness of the tax enforcement system (gaps in the VAT tax system resulting from tax fraud, which are not identified by the state tax institutions). Taxes are the main sources of revenue for governments to fund public services and projects. Detecting tax evasion is thus important for authorities to ensure sufficient revenue collection. Corruption, like tax evasion, leads to erosion of government revenue and, in addition, to

lowering morale, fostering distrust in the government, and creating efficiency losses associated with rent-seeking (Asian Development Bank, 2019).

There is a variety of factors that contribute to corruption in tax administration. These include the complexity of tax laws and procedures, the monopoly power and degree of discretion of tax officials, the lack of adequate monitoring and supervision, the commitment of political leadership, and the overall environment in the public sector. Corruption drastically reduces tax revenues, forcing governments to find other avenues for financing government expenditure, including borrowing. Future fiscal flexibility is reduced, because servicing of debt has to be given priority over other expenditures. This creates a vicious circle endangering fiscal sustainability (Purohit, 2007) and negatively affects the innovation through reduction of government purchases. But even with the extensive financial and human resources only some of investments are considered to be commercial successes. The reason that one cannot guarantee the success of the innovative enterprises is many uncontrollable factors in the marketplace that may cause enterprises to fail. Common reasons for failure are misjudging the marketplace, government policy, bad luck; unexpected government changes to laws or regulations (Jackson, 2011). Opportunism identified by Oliver Williamson is not the only reason why firms have problems. There is also another reason of weak outcomes. Significant sources of weak business outcomes are contract non-compliances resulting from misinterpreting or misunderstanding contracts (Hodgson, 2004).

Results

I. Anti-Corruption Design in Innovation Ecosystem

Innovation induced growth in the economy depends on level of public trust in business, academia and governments. Therefore, nurturing the culture of the innovation ecosystem based on ethical values is crucial for the ecosys-

tem stability. The principles that underpin the role and value of interactions and relationships within the innovation ecosystem are usually depicted as follows (UK Department for Business Innovation and Skill, 2011):

Figure 1. Characteristics of the innovation ecosystem



Source: UK Department for Business Innovation and Skill, 2011.

Successful innovation systems are typically characterized by an active knowledge economy, comprising academic, public sector and business R&D and innovation activities with effective commercialization and all supported by flexible public policy mechanisms. Successful innovation ecosystems need a culture of innovation based on interaction, and openness to international opportunities and change (Thomas, 2019). Openness to experience and change, creativeness, innovation, ethical behavior are crucial drivers of balanced innovation ecosystem.

Taking into accounts drivers of successful ecosystem Dobrowolski and Szejner have modified Norton and Kaplan balanced scorecard (Table 1), and they have proposed comprehensive anti-corruption approach to individual organizations forming the ecosystem and to the whole ecosystem as well. Simultaneous analysis of four variables of successful ecosystem mentioned above enables balanced approach to nurturing the compliance culture of

the innovation ecosystem, where a mechanism for building relationships and other intangibles between the entities of ecosystem are just as important as the ability to innovative thinking and conceptualization of innovative ideas.

Figure 2. Balanced Compliance Culture Model for Innovation Ecosystem



Source: own elaboration.

In balanced Compliance Culture Model for Innovation Ecosystem, the balanced scorecard needs to be prepared (Table 1).

An effective innovation ecosystem based on assumption from balanced Compliance Culture Model for Innovation Ecosystem scorecard enables entrepreneurs, universities, research organizations and government agencies to interact effectively to maximize the potential of their research and innovation and creating environment based on public trust, where contract opportunism is replaced by generally accepted and implemented ecosystem ethical standards. In such an environment, the development of innovation is protected by an umbrella of trust covering the entire ecosystem. All of them, openness, creativeness, flexibility are fuelled by ethical behaviour of individuals building ecosystem. In those ethical requirements anti-corruption plays key role.

Table 1. Balanced Scorecard of Compliance Culture Model for Innovation Ecosystem

To succeed in commercial market how will we sustain and develop our ability to changes and improvements	Creativeness			
	Objectives	Measures	Targets	Initiatives

To achieve our vision how will we sustain and develop our ability to flexible acting	Flexibility			
	Objectives	Measures	Targets	Initiatives

To satisfy our ethical clients which business processes must we excel at	Ethics			
	Objectives	Measures	Targets	Initiatives

To achieve our vision how should we communicate to our clients	Openness			
	Objectives	Measures	Targets	Initiatives

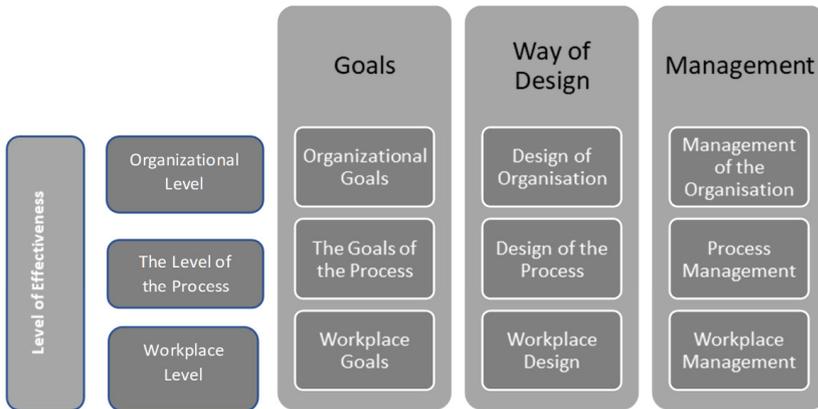
Source: own elaboration based on Kaplan Norton Balanced Scorecard.

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of individuals building the ecosystem. Anti-corruption plays the key role in those ethical requirements.

One can specify nine variables that create the anti-corruption effectiveness matrix. Three variables affect the organization's anti-corruption performance in each of its areas. They show the way in which the organization's goals are achieved, the way of designing the activities and the way of managing the organization and may influence three levels of efficiency: the level of organization, the level of the process and the level of the workplace. This approach created by Dobrowolski is similar to proposed by Rummler and Brache to achieving organizational effectiveness (Rummler & Brache, 1995).

Figure 3. Nine Variables of Anti-corruption Effectiveness



Source: own elaboration based on: Rummler & Brache, 1995.

These goals must be precisely defined (according to the well-known SMART concept) and reflect not only the organization's intentions, but also the expectations of its clients. The organization's goals must follow from the adopted strategy of operation. Therefore, the question should be answered: does the organization being the part of ecosystem have specific and understandable organizational goals that relate to counteracting corruption? Does the organization differ in this respect (positively) from other organizations?

The way of designing the organizational structure, process and workplace is to effectively achieve the goals. In the case of organization design, one should answer the question: does the organizational structure allow the effective implementation of the anti-corruption strategy? What should be changed in this structure and why?

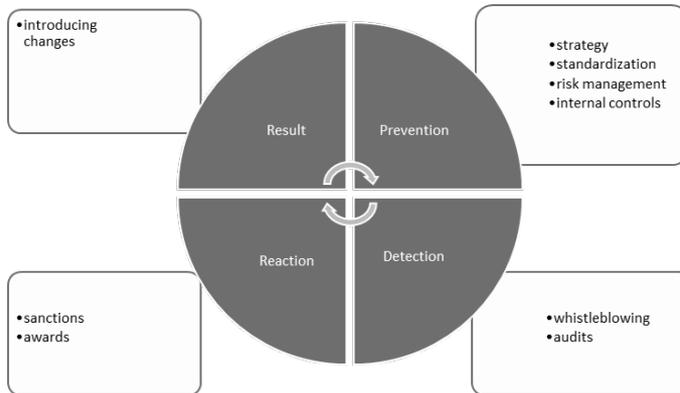
Even if the organization has anti-corruption goals and the right structure, it can achieve poor results due to improper management. One should therefore distinguish: 1) management of anti-corruption goals of the organization. Each department should have defined goals that will help achieve the goals of the entire organization; 2) management of performance indicators, which should be understood as acquiring information, how the entities from external environment assesses the organization, and how this assessment relates to the previously established assessment criteria. This should be also understood as taking corrective actions according to the concept of continuous improvement; 3) resource management. Resources should be so separated as to enable each department of the organization to implement anti-corruption goals; 4) management of interactions between organizational entities, and solving intra-organizational problems, providing adequate support for joint activities of various parts of organization, through adequate exchange of information.

The implementation of tasks by an organization is the result of processes taking place inside the organization. Therefore, each of the processes must have set goals. This also applies to inter-entities processes that may affect the implementation of the organization's strategy. The objectives of processes must be related to the requirements of customers. They must promote the compliance culture, if one can assume that compliance is basic requirement of all transactions. Next, it should be determined whether the method of designing the process allows effective implementation of the objectives. As part of process management, it should be determined whether sub-objectives have been set for each relevant activity in each process. One needs to establish whether customer information was obtained about the results of the process, whether the results achieved were compared with

the adopted criteria, whether the activity was regulated as a result of the adjustment, or the process objectives were changed to reflect the expectations of clients and the organizational possibilities. Resource management involves providing resources necessary to carry out individual activities in the process. Therefore, if one of the activities is the technical selection of the works ordered, there must be adequate financial means provided for this purpose, allowing to check the quality of performed tasks with the use of specialist knowledge and equipment. Intra-organizational management should ensure effective execution of tasks by several departments of the organization (Rummler & Brache, 1995).

At the workplace level, goals should also be set. The workplace should be designed so as to allow effective implementation of the anti-corruption objectives. As part of job management, one should look for the answers to the following questions: Do the employees know what work results are expected of them and what standards apply to them? Do the employees have adequate resources, receive clear-cut priorities for action, understandable and enforceable responsibilities? Are the employees rewarded for achieving the goals of their positions? Do they know how their work is evaluated? Do they have skills and knowledge necessary for the implementation of the tasks set? Do their attitudes ensure that goals are achieved? (Rummler & Brache, 1995). This consideration leads to a holistic approach to the anti-corruption effectiveness of organization. Effective management of anti-corruption requires appropriate formulation of objectives, design and management of each of the three levels: organization, process and workplace. Next, the three levels mentioned above (organization, process and workplace) should be included in the model of four-element anti-corruption proceedings in the organization. In other words, each stage of proceedings must be analysed from the level of organization, process and workplace.

Figure 4. A four-element Model of Anticorruption Proceedings in Organizations



Source: own elaboration based on Dobrowolski, 2017.

The management of organization is responsible for defining an anti-corruption strategy, as well as a policy for counteracting and detecting frauds, corruption and other pathological phenomena. The preparation of an anti-corruption strategy should be preceded by the SWOT and PEST analysis. The organization should have documentation describing the anti-corruption principles (policies) adopted by it, in particular regarding: 1) methods of protection of assets and liabilities against intentional distortion and corruption; 2) the manner of keeping anti-corruption documentation, including whistleblower notifications; 3) adopted rules for the classification of events; 4) description of the data processing system, methods of securing access to data and the system of their processing. The organization should introduce in its operation requirements of ISO 37001 - Systems for managing anti-corruption activities. Organization should determine the tasks of internal controls in the field of counteracting and detecting corruption and also manage the risk of corruption.

As part of the detection, the organization introduces a system of notifying about irregularities and defines which protection measures should be taken against whistleblowers. Appointment of the representative of the top-management of the organization for counteracting corruption enables, among

others: 1) contact with whistleblowers; 2) protection of whistleblowers; 3) undertaking explanatory actions, including the use of the internal audit unit, and if necessary preparing a draft notification of law enforcement authorities with a justified suspicion of committing a crime. Such a representative would respond in a situation of intentional use of his/her function to discredit management or employees. He/she would also be responsible if, as a result of improper performance of his/her duties, he/she would allow persons to be wrongly accused of corruption, fraud or other illegal acts. The introduction of solutions sanctioning the liability of the representative is fully justified. Research has shown that employees use the opportunity to formulate objections against their boss in order to remove him/her from the position held.

Detection of corruption cases should be accompanied by two activities. First, one should draw disciplinary consequences and prepare materials for law enforcement agencies. Second, person(s) who revealed corruption in the organization should be rewarded. The last, fourth stage of the anti-corruption cycle in an organization is also the basis for preventive activities.

It is worth noting here that introducing changes in the organization may be accompanied by such phenomena as: negation of changes, fear, resistance. Therefore, it should be clarified which (and why) activities are being undertaken. It is important to remember that everybody should provide the same information and not create a situation in which groups of "more" and "less" informed employees are created. Employees should be able to express their opinions about the scope of changes planned for implementation. Managers should consistently explain the scope of introduced changes and their purpose. Anti-corruption changes introduced in the organization may be of a reactive nature, and therefore are a consequence of the weaknesses of the organization recognized, or proactive, where the search for the optimal solution is preceded by constructing a model, which does not reflect any specific hitherto object.

Kotter model of change, after its modification, can be used to introduce organizational changes to better counteract corruption. The classical Kotter

model of process for leading change consists of 8 stages (Kotter, 2019): 1) Create a sense of urgency; 2) Create a guiding coalition; 3) Form a strategic vision and initiatives; 4) Enlist a volunteer army; 5) Enable action by removing barriers; 6) Generate short-term wins; 7) Sustain acceleration; 8) Institute change.

The first step means that one needs to help others see the need for change through a bold, aspirational opportunity statement that communicates the importance of acting immediately. Next, a volunteer army needs a coalition of effective people – born of its own ranks – to guide it, coordinate it, and communicate its activities. The third step means that large-scale change can only occur when massive numbers of people rally around a common opportunity. They must be bought-in and urgent to drive change – moving in the same direction. Next, removing barriers such as inefficient processes and hierarchies are necessary. It provides the freedom necessary to work across silos and generate real impact. Sixth step is described by Kotter in the following manner. Wins are the molecules of results. They must be recognized, collected and communicated – early and often – to track progress and energize. Seventh step is as follows - press harder after the first successes. Increasing credibility can improve systems, structures and policies. Be relentless with initiating change after change until the vision is the reality. Finally, the eighth step is the following. Articulate the connections between the new behaviours and organizational success, making sure they continue until they become strong enough to replace old habits (Kotter, 2019).

In general, the Kotter model of process for leading change can be used to combat corruption in an organization. It should be noted, however, that in the classic Kotter model introduced changes usually concern the improvement of the organization's functioning in order to increase profits, improve the quality of tasks performed, improve working conditions. For the most part, after explaining the justification of the changes to the employees, they are ready to introduce them. In the case of corruption, the demand-supply model must be used to analyse the scope of changes in the organization. The organization may have contact with other entities that recognize cor-

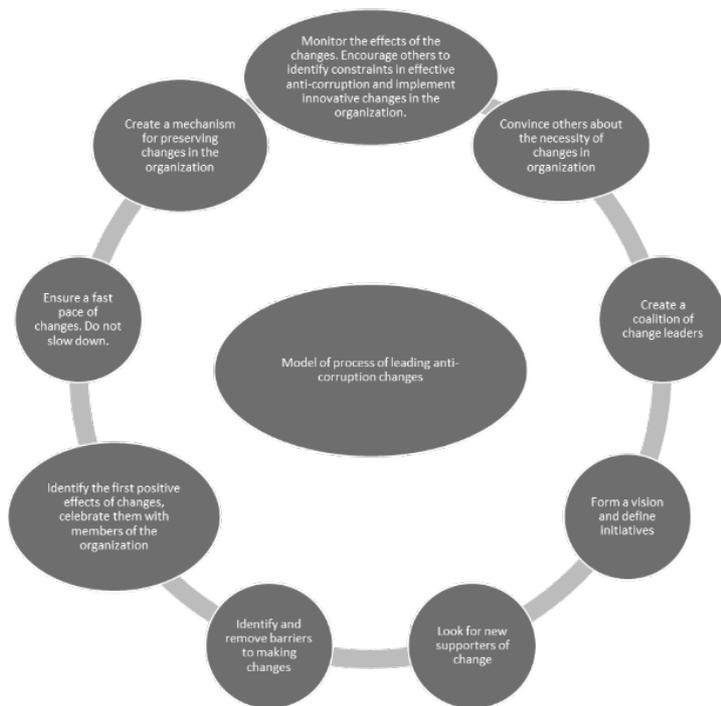
ruption as one of the solutions facilitating business. In such a situation, the corruption pressure of the environment will be very high, and the benefits of bribes may significantly exceed the income obtained from employment in the organization. In addition, corruption is usually characterized by a conspiracy of silence between the recipient of bribes and their giver. In other words, there are favourable conditions for corruption. In such a situation, the model of anti-corruption change must include two additional stages: first, rewarding individuals for revealing corruption cases and these rewards should be significant. Second, continuous monitoring of the effectiveness of anti-corruption, since perpetrators of corruption aware of anti-corruption mechanisms are constantly modifying ways of corrupting representatives of the organization.

This means that the employees should be aware of why changes must be made. Then one needs to set up a team that implements the changes and to define the organization's vision in anti-corruption. The employees must be informed about the scope of changes and accept them. The pace of achieving success as a result of the introduced changes legitimizes them from the perspective of management and employees. It should be planned what perceived successes in introducing changes in the organization should be presented to the employees. Considering the demand-supply model of corruption, it is not enough to just inform the employees that the organization is complying with the code of ethics and/or performs tasks in accordance with ISO standards. Such information, although important, is too general from the perspective of the employees. They should therefore be complemented with concrete, measurable and tangible examples of successes for organizations and particular employees.

The will to return to the previous state, existing and resulting from human character, must be eliminated. An example of such an attempt to return to old ways of work is to award contracts for the supply of goods or services without the required rule of "many eyes", and thus without the need to coordinate the procurement process by many employees. Such an attempt to return to old ways of work does not have to result from the willingness of

employees to bypass new regulations due to corruption. They may desire to reduce working time, and put less effort into the procurement task. Taking into accounts that an employee rarely realizes that such bypassing procedures can catalyse favourable conditions for corruption, an effort should be focused on ongoing anti-corruption training. Constantly repetition of required procedures will help in their faster diffusion within organization. Therefore, the required changes will persist in the organizational culture. The concept of Kotter stages in the case of large entities may not bring the expected results due to the separation of "ordinary" employees from the change team and as a result of treating the change process as imposed from the "top" and/or imposed by foreign advisors. Therefore, a better solution to introduce anti-corruption changes is the concept of nine stages of Dobrowolski anti-corruption accelerator (also referred to as the 9SAC Model) based on the concept of Kotter's accelerator.

Figure 5. Acceleration of Anti-corruption Changes in the Organization



Source: Dobrowolski elaboration based on Kotter, 2019.

According to the assumption, the largest groups of managers and employees from various departments of the organization are involved in introducing changes. The involvement of these people is rewarded. Such a procedure accelerates the acceptance of changes by the employees, allows them to link the achievement of the goal with the gratification of the effort put in and increases the number of employees involved in implementing the changes.

The basis for effective functioning of anti-corruption accelerator is reliable communication and unquestionable involvement of the chief management in the scope of changes. Any discrepancies among the members top management regarding the need to introduce changes in the organization and the scope of these changes, disclosed and presented to subordinates, will inhibit initiatives to implement changes and even lead to their regression.

Final remarks

During research study it was intended to determine how to effectively prevent innovation ecosystem against corruption threat. The scale of this threat is not decreasing globally. Taking into account that the bounded rationality is the appropriate cognitive assumption for describing economic organizations and the self-interestedness of economic entities exists, it was found that there is the correlation between the scale of innovation and organizational culture fuelled by corruption. It was found that the innovation of entrepreneurs was limited in the countries where the corruption threat was bigger. Corruption has been treated as an obstacle to the innovative development of the organization and more complex innovation ecosystems, which should be removed and at the same time introduced preventive solutions.

Based on research study the original, unique comprehensive approach to anti-corruption within organizations and innovation ecosystem was proposed. Such approach might enhance, through the creation and introduction of the balanced scorecard of compliance culture in innovation ecosystem to organizations being the part of innovation ecosystem, anti-corruption outcome. Identification of nine anti-corruption variables and using them to plan and realize corruption prevention might influence the anti-corruption effectiveness. Finally, the acceleration of anti-corruption changes in the organization will help to achieve the positive effects faster, which will enhance positive anti-corruption trends within and outside organizations as well as in innovation ecosystem.

References

Asian Development Bank. *Tax and Corruption*. Available at: <https://www.adb.org/news/events/tax-and-corruption>. Access: May, 7, 2019.

Brakman Reiser, D., & Dean, S. A. (2017). *Social Enterprise Law: Trust, Public Benefit and Capital Markets*. Oxford: Oxford University Press.

Chayes, S. (2016). *Thieves of State: Why Corruption Threatens Global Security*. New York: W.W. Norton & Company.

Commission of the European Communities (2003). *Green Paper, Entrepreneurship in Europe*. Brussels.

De Clercq, D., & Dakhli, M. (2003). Human capital, social capital, and innovation: A multi-country study. *Vlerick Leuven Gent Working Paper Series, 18*. Gent: Vlerick Leuven Gent Management School.

Department of Business Innovation and Skills (2014). Insights from international benchmarking of the UK science and innovation system. *BIS Analysis Paper 03*. Available at: <https://www.gov.uk/government/publications/science-and-innovation-system-international-benchmarking>. Access: May, 2, 2019.

Dobrowolski, Z. (2017). *Combating Corruption and Other Organizational Pathologies*. Frankfurt Am Main: Peter Lang GmbH, Internationaler Verlag der Wissenschaften.

European Commission (2012). *Communication on the European Research Area*. Available at: http://ec.europa.eu/research/era/era_communication_en.htm, Access: May 3, 2019.

Fisman, R., & Golden, M. A. (2017). *Corruption: What Everyone Needs to Know*. Oxford: Oxford University Press.

Fukuyama, F. (1996). *Trust: The Social Virtues and The Creation of Prosperity*. New York: Free Press

Hodgson, G. M. (2004). Opportunism is not the only reason why firms exist: why an explanatory emphasis on opportunism may mislead management strategy. *Industrial and Corporate Change*, 13(2), 401–418.

Jackson, D.J. (2011). *What is an Innovation Ecosystem?*. Arlington, VA: National Science Foundation.

Kaasa, A. (2007). Effects of different dimensions of social capital on innovation: Evidence from Europe at the regional level. *Faculty of Economics and Business Administration Working Paper*, 69. Tartu: University of Tartu.

Keeley, B. (2007). *Human capital: How what you know shapes your life*. Paris: OECD.

Knack, S., & Keefer, P. (1997). Does Social Capital Have an Economic Payoff? A cross-country investigation. *Quarterly Journal of Economics*, 112(4), 1251–1288.

Kotter, J. P. *8-Step Process*. Available at: <https://www.kotterinc.com/8-steps-pro>. Access: May, 2, 2019.

Mitchell, J. M. (2012). *Public Trust*. Denver: Prairie Plum Press.

Młokosiewicz, M., & Misiak-Kwit, S. (2017). The Impact of Trust on Entrepreneurship in Poland. *Journal of Entrepreneurship. Management and Innovation*, 13(4), 79–95. Available at: http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-10ec59ea-da1d-43d3-88c4-f2e4369dccbb/c/JEMI_Vol13_Issue4_2017_Article5.pdf. Access: May, 3, 2019.

New Zealand Government (2019). *Innovation ecosystem*. Available at: <https://www.sciencelearn.org.nz/resources/1670-innovation-ecosystem>. Access: May, 3, 2019.

OECD. *OECD Science, Technology and Innovation Outlook 2018*. Paris. Available at: https://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2018_sti_in_outlook-2018-en. Access: May, 10, 2019.

Porter, T. M. (1996). *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton, New Jersey: Princeton University Press.

Pretty, J., & Ward, H. (2001). Social Capital and the Environment. *World Development*, 29(2), 209–227.

Purohit, M. C. (2007). *Corruption in Tax Administration*. In Anwar Shah (ed.), *Performance, Accountability and Combating Corruption*. Washington D.C.: The World Bank.

Rose-Ackerman, S., & Palifka, B. J. (2016). *Corruption and Government. Causes, Consequences, and Reform. Second Edition*. Cambridge: Cambridge University Press.

Rumler, G.A., & Brache, A.P. (1995). *Improving Performance: How to Manage the White Space in the Organization Chart*. San Francisco: Jossey-Bass Inc.

The United Nations (2004). *Anti-Corruption Toolkit, 3rd Edition*. UNODC, Available at: www.undoc.org/documents/corruption/publications_toolkit_sep04.pdf, p. 10. Access: February, 16, 2016.

Thomas, M. *Innovation ecosystems as drivers of regional innovation - validating the ecosystem*. European Union, Interreg IVC. Available at: <http://www.know-hub.eu/knowledge-base/videos/innovation-ecosystems-as-drivers-of-regional-innovation-validating-the-ecosystem.html>. Access: May, 7, 2019.

Transparency International. *Corruption Perceptions Index 2018*. Available at: <https://www.transparency.org/cpi2018>. Access: May, 10, 2019.

Transparency International. *Frequently asked questions about corruption*. Available at: www.transparency.org/news_room/faq/corruption_faq. Access: February, 19, 2016.

UK Department for Business Innovation and Skill (2011). *Innovation and research strategy for growth' – refers extensively to the innovation ecosystems of 'Global Innovation Leaders*. London.

Wallis, J., Killerby, P., & Dollery, B. (2004). Social Economics and Social Capital. *International Journal of Social Economics*, 31(3), 239–258.