

## INNOVATION AND CHANGE IN NETWORKED REALITY

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**Abstract:** The aim of the research presented in this paper is to draw attention to innovation and change in the perspective of the search for modern conditions of management in organisations. Organisations increasingly aim to build open structures and systems. They remain in dynamic relations with their environment, which is multi-directional and spontaneous. Innovations and organisational changes now take place mainly in the space of network social relations. Next to the introduction, the paper is composed of three parts, as well as a summary. The first section refers to the presentation of the evolution of some approaches to innovation issue. The second part takes the problem of organizational change as a real paradigm of the modern world of organization. The next section focuses on the dimensions of organizational networked social sphere. The last part presents a conclusions and an outline of the research results obtained. The research results oscillate around an author's attempt to organize and crystallize an epistemological perspective related to the interpretation and evolution of innovation. Author postulates a holistic, systemic approach to the analysis of phenomena related to innovation in the world of contemporary organizations, as the outcome of this scientific discussion.

**Key words:** innovation, change, social networked space

DOI: 10.17512/pjms.2017.15.2.16

*Article's history:*

*Received* December 7, 2016; *Revised* January 5, 2017; *Accepted* January 16, 2017

### Introduction

The essence of modern enterprise management is innovativeness and change as a paradigm not only with reference to the world of organisations, but even to the civilisation as we know it. Most often, an organisation's attitude towards the above-mentioned phenomena determines its development potential and ability to survive. One can thus construct a somewhat tautological statement reflecting modern processes that innovation is in its essence change and change itself becomes innovation.

The paper addresses issues connected with an attempt to "capture" conceptual and theoretical relations between the concepts of change and innovation as a certain system of paradigms present in the environment of the functioning of enterprises and in the theory of management.

The methodological approach adopted in this work is based on study of literature and examination of relationships between theoretical constructs within the broadly understood theory of management as well as identification of the modern conditions of the operation of enterprises based on the reality of networks. The aim

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of the author is to contribute to the scientific discussion on the issues of modern conditions of management in the environment of organisations.

### **What's New in Approaches to Innovation?**

As pointed Birkinshaw et al. „over the past half-century, scholars around the world have produced a vast body of academic research and writing on innovation” (Birkinshaw et al., 2008). In management studies, innovation is interpreted at multiple levels. They include: modelling of innovation processes, analysis of the determinants of the development and implementation of innovations as well as the characteristics of innovation potential and subject structure. Scientific discussions in this field address, among other things, such subjects as achieving effectiveness and efficiency of innovations, strengthening competencies, enriching the flows of knowledge and skills or developing new forms of cross-organisational cooperation (see: Haegeman et al., 2017). Innovation practice indicates the need to go beyond the standard organisational architecture of an enterprise, where dynamism and constant changes are the key attributes.

The evolution of the models for developing and implementing innovations is connected with the search for attributes of the modern architecture of the environment of an organisation that allow innovative projects to be effectively initiated. Developing the capabilities of achieving effectiveness of innovation corresponds with change as a phenomenon which is, metaphorically speaking, inscribed in the DNA of the modern enterprise in terms of, among other things:

- going beyond the traditional organisational framework of the space of innovation,
- organising new technical and organisational feeds,
- extending the subject and object structure of innovations,
- searching for non-traditional sources of new knowledge generation.

Relationships with the external environment are increasingly dynamic, multi-directional, spontaneous and casual in character. Thus, reorientation or change of the business model most often goes in the direction of a dynamic and open system in which change becomes a natural and inseparable phenomenon. Tapscott and Williams indicate that cooperation, openness, sharing (exchange of knowledge), fairness and interdependence are attributes of the modern management of an enterprise (Tapscott and Williams, 2011). However, no matter what convention we adopt to describe the issues of innovation, we cannot forget the "birth" of the paradigm of innovativeness, with Schumpeter's approach being fundamental for the classical interpretation of this concept (Schumpeter, 1960). In this approach, innovation is first and foremost perceived as a new technical solution based on new knowledge (see: Toszewska-Czerniej, 2015; Swacha, 2015) which is characterised by originality and inclination for introducing changes in such areas as: products, technology, organisation, etc. in the context of searching for capabilities of implementing new knowledge. Thus, already in the period of the

conception of the theory of innovation it was inseparably connected with change as the essence of development processes.

What is important, in so-called Schumpeter's approach innovation is connected with originality, creativity, ingeniousness, being above average, etc. Such interpretation of innovation makes it possible to pay special attention to unique competencies of an enterprise. At the same time, it can be stated that these unique competencies create potential to use change as a "vehicle" of developmental initiatives.

At the same time, fundamental to the evolution of the theory of innovation is, as noticed by T. H. Davenport and others (Davenport et. al., 2006), the perspective of linear, coupling, parallel and networking modelling. This perspective reflects subsequent orientations acknowledged as the basis of general conceptualisation of innovation. It identifies two elementary approaches to the development and implementation of innovation: integrating (classical one) and networking one.

At the same time, from the perspective of the development of innovation in the modern space of social and economic relationships it seems interesting to distinguish the process approach (Milling, 1996) and "event" approach (Manu, 2010). According to the process approach, innovation has a material dimension. It is equated with an innovation process, understood as a sequence of planned (intentional) activities performed in a given space and in a specific time horizon. In contrast, the "event" approach sees innovation as an effect of the occurrence of a certain event which most often is unintentional and refers to a given moment in time. What's very important, the process approach sets the innovation process in a real space that represents reality. It identifies phases and actions of a process as well as its dimensions: time, cost, effect etc. In contrast, the "event" approach concentrates mainly on immaterial sphere.

### **Is Change a Paradigm?**

Naturally, the title of this sub-chapter is an intellectual provocation in a sense. There is a widespread view that modern enterprises function "in change". On the one hand, enterprises deal with changes originating from the dynamic and complex external environment. On the other hand, what is very important, they also become initiators and creators of changes. Shaping behaviours of an organisation that are desirable from the perspective of creating development opportunities corresponds closely with the issues of change as the core of organisational processes (see: Teece and Pisano, 1994).

It is acknowledged that change is the only permanent element in the system of managing a modern enterprise (see: Chianchana and Wichian, 2016). The dynamic and complex environment in which enterprises function is increasingly initiating the need to change the internal organisational architecture. Apart from reorganisation, the aim is also to transform an organisation. Change is increasingly becoming part of the modern philosophy of running a business, becoming

its immanent property. Ability to change, dynamics of changes or change management determine effectiveness and efficiency of activity, creating thereby favourable conditions for an organisation to develop and achieve success. It is however worth stressing at this point that not every change directly contributes to development of an organisation. Apart from positive changes, there are also negative and neutral changes (classification of changes by their effect, after: Czerska, 1996). Negative and neutral changes do not generate values that are desirable from the point of view of an organisation. It is important that change initiates progress of an organisation.

It can be stated that change means "going (in the process approach) or transition (in the effect approach) from the present state to the future state, i.e. desirable one, manifesting striving to eliminate certain dysfunctions and improve effectiveness/efficiency of activity" (Osbert-Pociecha, 2009). Thus, change can be interpreted in terms of a process as an ordered sequence of actions or as a result. It seems however that regardless of adopted cognitive perspective: change as a process or change as a result, it reflects an enterprise's orientation towards improvement. Change is usually associated with the process of substituting an existing sphere of the area of an enterprise's activity with a different one. Thus in the process of change, the focus is on introducing a different/desirable shape of a phenomenon and/or thing in place of the existing form. Seen from this perspective, change disturbs the existing organisational architecture and configures its organisation. Such approach to change is in line with the traditional model present in management studies in which change leads to "transition from one state of balance to a different one" (Walas-Trębacz, 2009).

It can also be noticed that consistent attempts of enterprises to maintain the state of absolute internal and external balance appear to be undesirable, or even impossible in today's conditions. For that reason, modern approaches take into account two correlated categories: imbalance and movement. Consequently, the issues of change refer to management of imbalance (Walas-Trębacz, 2009). Thus, instead of the "hard" orientation that is geared towards internal and external balance, a dynamic, flexible and open perspective is proposed. So, the description of the modern environment of enterprises' functioning in change acknowledges on the one hand the dynamism, flexibility and imbalance of this environment, while on the other hand, it recognises a need to maintain certain balance that is necessary for an organisation to survive. This need is expressed in striving to ensure security. In this respect, special attention should be paid to highly complex, turbulent and chaotic organisational and non-organisational space, which is now becoming the natural environment of an enterprise's functioning.

### **Change and Innovation in Social Networked Space**

Innovations and changes in the space of dynamic and complex network relations define the need to look at an organisation in a new way. What becomes the natural space for changes and innovations is an environment of networks with extremely

complex, dynamic and open relationships (Klein et. al., 2016). Creation, maintenance and development of these relations reflect the quality of social interactions. Looking from this perspective at modern organisations, we can observe their particular commitment - not only to developing network ties, but more importantly to ensuring a convenient organisational environment for building and intensifying relational ties in the network (see: Pachura, 2015).

It can be assumed that the system architecture of the innovation environment is a three-layer structural system where the following dominate: internal environment, external environment and the "meeting" plane of the mutual interaction of these two. Network relations in this system are heterogeneous, irregular, random and unpredictable. At this point it is worth stressing that in management studies the following objects of network research are also identified (Czakon, 2015):

- ego-networks of an enterprise - in the context of the characteristics of social capital, relational capital and network roles,
- flagship company - in the context of free shaping of a network's structure,
- business ecosystem - in the context of developing cooperation aimed at satisfying the customer and competing with business ecosystems,
- network business models - in the context of description of the architecture of network ties, flows of materials, knowledge and values.

Thus, change in the context of innovation "opens up" to new possibilities of exploring the sources and conditions for its development and implementation.

The conceptualisation of open innovation may lead to distinction of certain cognitive perspectives. One of the proposals identifies four areas of exploration, namely. (Bogdanienko, 2016):

- area of knowledge flow - for minimisation of the barriers to the flow as a result of the development of communication systems, scholars' mobility and increased team spirit in research work,
- area of searching for ideas of innovations - for synchronisation of internal and external sources,
- area of knowledge absorption - for assimilation of knowledge dispersed in the environment,
- area of innovation commercialisation - for using internal and external paths of implementing innovations on the market.

In this perspective, one can speak of social potential of an organisation (internal dimension), social potential as a property of the external environment (external dimension), "relational" social potential (effect of the existence of heterogeneous, irregular, random and unpredictable relations) and social potential of networks (effect of synergy). Thus, on the one hand, social potential becomes the baseline for detailed exploration of open innovation (see: Grönlund et al., 2010; Slowinski and Sagal, 2010). On the other hand however, open innovation requires special support from social potential due to, among other things:

- the development of social relations which exceed the internal organisational structures,
- creation of social ties and impact on their quality,
- creation of social interactions at the level of communication, cooperation between organisations etc.
- active involvement in processes of creating and using new knowledge,
- stimulation of learning processes.

The environment of open innovation, which is characterised by dynamism and complexity of social network relations, requires in particular that new social awareness is built. The development of relations implicates a heterogeneous form of the social environment of innovation. As social ties are the foundation of network relations, it can be assumed that this heterogeneity can be noticed at the levels of an organisation, ego-network of an enterprise and network business models. However, of particular importance is here the level of an organisation, especially its readiness to create and use attributes of networks. The readiness of an organisation is shaped by, among other things, system architecture, business model, management philosophy and above all its social potential.

Additionally, the increasing complexity and interdisciplinarity of the decision-making and managerial areas of an organisation in the environment of open innovation leads to reorientation of social potential. However, it should be stressed at this point that the properties of an organisation's social potential penetrate the external social potential, "relational" social potential and social potential of network. Thus, change to an organisation's social potential becomes particularly important against the backdrop of intensified network cooperation and global cooperation between organisations.

General interpretation of social potential refers to the issues of social capital. In very simple terms, social potential expresses social resources that constitute value in themselves. At the same time, these resources co-create new values (capital dimension) (see: Pachura, 2016). One can assume that if open innovation represents complexity and dynamism of network relations, openness and changeability can also be found in the description of social potential of organisations. Such cognitive perspective closely corresponds with the issues of developing ties in the environment of continuous change in the context of cooperation between organisations. Thus, in the context of change and innovativeness it leads to searching for possibilities of achieving freedom and dynamism at the level of an organisation as a result of the development of active, unconventional and creative behaviour.

### **Managerial Implication**

The epistemological considerations undertaken so far may constitute a plane on which challenges for modern management can be identified. The proposed conceptualisation of innovation and changes in network environment allows

for further reflections formulated from the perspective of the development of management studies and enterprise management practice.

The interpretation of the open approach to innovation and changes shapes the today's management system. Among the key attributes of modern management environment are, among other things, networking, decentralisation, flexibility and creativity. Adoption of such scientific perspective in management studies encourages one to extend the subject area of undertaken scientific investigations and facilitates the evolution of management approaches, methods and techniques. In view of the above-mentioned attributes of modern management environment, enterprises undertake reconfiguration of adopted business models, which are based on complex, multi-faceted, flexible and dynamic network relations.

The space of social relations may constitute an important interpretation plane in management studies. This is because it creates a somewhat different picture of planning, organising, motivating/steering and control. The approach is evolving towards an open and free use of the technical and organisational, economic, informational and social potential at the network level. Formal boundaries of an organisation do not prevent an enterprise from taking advantage of the global environment. Cooperation and interaction within network structures result in formal boundaries of organisations becoming blurred in a sense. Enterprises are becoming an open, dynamic and complex system. They are functioning in an environment of imbalance and constant move. Looking from this perspective, developing abilities to move around such an environment can be considered as a key challenge for the practice of managing a modern enterprise. The discourse conducted in management studies at the level of epistemology of coexistence and interaction of an enterprise's network organisational environment and global space of network social relations will certainly contribute to further development of management engineering.

Thus, it seems highly important to extend the scientific perspective in management studies and to re-engineer management systems of enterprises to highlight those element that in particular determine the space of social network relations. It is worth pointing to the need of building management systems based on such characteristics as trust, autonomy, decision-making, freedom or self-monitoring. However, such approach has to be supported by management methodology and requires organisational maturity of an enterprise and its management.

### **Summary**

The literature of the subject stresses that change management is a "very complex and comprehensive process" that requires an enterprise's readiness for change (Wiśniewska-Placheta, 2015). However, due to the dynamism of the environment, the perspective of a single change and its management gives way to management of changes, while the conceptualisation of success increasingly refers to the perspective of shaping organisational flexibility. This flexibility is examined in the internal and external dimensions. Internal flexibility means "ability to quickly react

to the conditions of the environment", whereas external flexibility is "an enterprise's ability to have an active impact on its environment and increase resistance to its impact" (Rohatyński, 2016).

Today's changes and innovativeness of enterprises are based on exploration of inter-organisational relations through development of social interactions in a heterogeneous network space. The heterogeneous character refers to formal and informal ties being built. The variety of characteristics, behaviours, social attitudes, social ties, as well as age and cultural diversity lead to the need for tolerance for what is different, non-standardised, untraditional, and even extravagant or exotic. Moreover, it also seems critical to recognise freedom of individualisation of creative skills. In management studies, the ever boldly developed humanistic approach or behavioural current give rise to certain observations. It can be stated that what underlies the building of the state of "optimal readiness" of an organisation for changes and innovation is recognition of an employee, friendly organisational environment and development of interpersonal relations.

A research and practical problem in this area is to achieve such an optimal state where such behaviours will be translated from an individual level (i.e. an employee) to an organisation's capability of freedom and dynamism within the boundaries of internal balance. This means that they will enable openness of the internal system through active reaction to impulses and changes originating from the environment. The paper adopts optics of epistemological deliberations and interpretation of the innovation process in view of the evolution of multidimensional paradigms and approaches. Author tries to embed the concepts of innovation in the broad context of civilization's changes associated with the network approach, or social determinants. The result of conceptual studies presented in this paper is an attempt to systematization and crystallization of the innovation concepts. The most important author's achievement is the presentation of specific epistemological optics. This optics or analytical proposition is based on the cognitive issues, system and conceptual approach towards to holistic approach of innovation. The considerations presented herein naturally do not exhaust the issues addressed in the paper, but the author hopes that they may contribute to scientific discussion.

## References

- Birkinshaw J., Hamel G. and Mol M. J., 2008, *Management innovation*, "Academy of Management Review", 33(4).
- Bogdanienko J., 2016, *Zarządzanie w spiralnie zapętlonej sieci – refleksje nad relacjami międzyorganizacyjnymi*, „Przegląd Organizacji”, 2.
- Chianchana C., Wichian S. N., 2016, *Assessment of performance competency in the organization: dimensionality oriented assessment*, "Polish Journal of Management Studies", 13(2).



- Czakon W., 2015, *Sieci międzyorganizacyjne w naukach o zarządzaniu – w kierunku sieciowych modeli biznesu*, „Studia Ekonomiczne”, Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, 217.
- Czerska M., 1996, *Organizacja przedsiębiorstw. Metodologia zmian organizacyjnych*, Gdańsk, Wyd. Uniwersytetu Gdańskiego.
- Davenport T.H., Leibold M. and Voelpel S., 2006, *Strategic Management in the Innovation Economy. Strategy Approaches and Tools for Dynamic Innovation Capabilities*, Germany, WILEY.
- Grönlund J., Sjödin D. and Frishammar J., 2010, *Open Innovation and the Stage-Gate Process: A revised model for new product development*, “California Management Review”, 52(3).
- Haegeman K., Spiesberger M. and Könnölä T., 2017, *Evaluating foresight in transnational research programming*, “Technological Forecasting and Social Change”, 115.
- Klein O., Pachura P., Tamásy Ch., 2016, *Globalizing production networks*, “Polish Journal of Management Studies”, 13(2).
- Manu A., 2010, *Disruptive Business: Desire, Innovation and the Re-Design of Business*, Burlington, Gower Publishing.
- Milling P., 1996, *Modeling Innovation Processes for Decision Support and Management Simulation*, “System Dynamics Review”, 12(3).
- Osbert-Pociecha G., 2009, *Zmiana jako metaproces w organizacji procesowej*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 52.
- Pachura A., 2015, *Innovativeness of an enterprise in the context of technology globalisation*, “Polish Journal of Management Studies”, 12(1).
- Pachura A., 2016, *Środowisko otwartej innowacji a potencjał społeczny przedsiębiorstwa*, „Marketing i rynek”, 3.
- Rohatyński R., 2016, *Adaptacyjność przedsiębiorstwa a jego organizacja*, [In] Gregorczyk S., Mierzejewska W. eds., *Zarządzanie przedsiębiorstwem inteligentnym. Wybrane zagadnienia*, Warszawa, Oficyna Wyd. Szkoły Głównej Handlowej w Warszawie.
- Schumpeter J. A., 1960, *Teoria wzrostu gospodarczego*, Warszawa, PWN.
- Słowinski G., Sagal M.W., 2010, *Good practices in open innovation*, “Research Technology Management”, 53(5).
- Swacha J., 2015, *Gamification in knowledge management: motivating for knowledge sparing*, “Polish Journal of Management Studies”, 12(2).
- Tapscott D., Williams A.D., 2011, *Makrowikinomia. Reset świata i biznesu*, Warszawa, Wydawnictwo Studio Emka.
- Teece D., Pisano G., 1994, *The Dynamic Capabilities of Firms: an Introduction*, “Industrial and Corporate Change”, 3(3).
- Toszevska-Czerniej W., 2015, *Knowledge management model*, “Polish Journal of Management Studies”, 12(2).
- Walas-Trębacz J., 2009, *Zmiany organizacyjne przeprowadzane w przedsiębiorstwie*, Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie, 2(13/2).
- Wiśniewska-Placheta E., 2015, *Determinanty gotowości przedsiębiorstwa do zmiany*, Zeszyty Naukowe Politechniki Śląskiej, „Organizacja i Zarządzanie”, 77(1927).

## INNOWACYJNOŚĆ I ZMIANA W SIECIOWEJ RZECZYWISTOŚCI

**Streszczenie:** Celem prowadzonych badań przedstawionych w niniejszym artykule jest próba zwrócenia uwagi na innowację i zmianę w perspektywie poszukiwania współczesnych uwarunkowań zarządzania w organizacjach. Organizacje coraz częściej zmierzają w kierunku budowy struktur i systemów otwartych. Pozostają one w dynamicznych relacjach z otoczeniem, wielokierunkowym i spontanicznym. Innowacje i zmiany organizacyjne zachodzą dzisiaj przede wszystkim w przestrzeni sieciowych relacji społecznych. Obok wprowadzenia artykuł składa się z trzech części oraz podsumowania. Pierwsza część odnosi się do prezentacji ewolucji podejść do innowacyjności. Część druga podejmuje problematykę zmiany organizacyjnej jako rzeczywistego paradygmatu współczesnego świata organizacji. Kolejna sekcja skupia się na wymiarze „usieciowienia” społecznej sfery organizacji. Ostatnia część czyli podsumowanie prezentuje wnioski końcowe oraz zarys uzyskanych wyników badań. Otrzymane rezultaty badań oscylują wokół próby pewnego uporządkowania czy też krystalizacji zagadnień teoriopoznawczej związanych ze znaczeniem i ewolucją innowacyjności w świecie współczesnych organizacji. Autorka postuluje przyjęcie holistycznego, systemowego podejścia do analizy zjawisk związanych z innowacyjnością organizacji.

**Słowa kluczowe:** innowacja, zmiana, przestrzeń sieciowych relacji społecznych

### 創新和變革聯網現實

**摘要：**本文提出了研究的目的是提請注意創新和變革中尋求實現組織管理的現代條件下的視角。組織的目標是打造最驚人的結構和開放系統。他們與他們的環境，這是多方位的和自發的關係保持活力。創新和組織變革，現在主要發生在網絡社會關係的空間。接著介紹，紙張由三部分組成，以及摘要。第一部分涉及的一些方法演進的呈現是創新的問題。第二部分以組織變革的問題作為組織的現代世界的真正典範。接下來的部分集中在網絡社會領域的組織的規模。最後一部分給出了結論和研究成果獲得的輪廓。研究結果振盪圍繞筆者的嘗試組織和結晶相關的解釋和創新的進化認識論的角度。作者假定一個整體的，系統的方法，以在當代組織的世界與創新有關現象的分析，因為這樣的科學討論的結果。

**關鍵詞：**創新，變革，社會網絡空間