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### Network organization – functioning of enterprises in the information area

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**Summary.** The information space is the “place” of the existence / “life” of all the information necessary for the proper functioning of the company. With the development of information technology, and especially the Internet, every participant in the economic life has practically unlimited opportunities to acquire, but, what is very important, also to provide information that influences his competitive position. Management in contemporary reality is associated with using opportunities and avoiding threats. The key factor for success is time, both in terms of taking it and effects. In a global and dynamic reality, one of the most important challenges is to establish cooperation. The aim is to provide the participating entities the opportunity to make better use of their individual attributes and resources – their own and their partners. The operation of each company is based on information. Each action can be seen in the information view, as an action in the information space. The aim of the article is to present the essence, characteristics and advantages of management in the information space. The aim is also to draw attention to the fact that the effectiveness of a network organization as a group of cooperating entities is strictly dependent on the effectiveness of its functioning as a whole and of each of its elements in the information space.

### Introduction

When dealing with entrepreneurs, especially those who run smaller “businesses”, the phrase “is getting worse, it is very difficult to compete with these «networks»” occurs very often (Pachura, 2017, pp. 173–182). The reasons for co-operation can be found in the words of I. Kędzierska-Bujak: “Companies are increasingly collaborating on different levels and principles. They are aware that action without cooperation with

others will not be effective in the long run and will not contribute to improving its competitiveness or market position.” (Kędzierska-Bujak, 2012, p. 315). The cause is obvious and generally understood. But where from is the conviction that without competition cooperation is difficult, or even impossible? What are the key factors influencing the position of modern companies? What is the reason and what causes the dynamism and volatility of today’s markets? What is the role of flexibility and is it possible to indicate its limits? In the end, what it is, and what role plays information today? The basic purpose of the publication is to try to find answers to the above questions. The purpose is also to present the essence of the information space as the place of real functioning of contemporary participants in the economic life.

## 1. Business cooperation

According to J. Mazur the cooperation defines “joint undertaking of work / activities by various entities. These entities may be individuals, groups or organizations. Therefore also collaborating (cooperating) companies, by undertaking joint actions. They are the result of establishing relationships between companies” (Mazur, 2011, p. 290). The author analyzes the notion of cooperation, pointing to the use of two terms in English language: collaboration and cooperation. She notes that they are often treated as synonymous terms, but some authors find that there are differences between them. These differences are related at the same time to the purpose of cooperation, represented in the opportunity and inability to stop it. “Collaboration (...) relationships between them can be broken at any moment, and this break does not affect the achievement of goals by the individual companies. Cooperation (...) none of the companies can compete effectively without the constant support of other partners.” (Mazur, 2011, p. 290).

According to the authors of this publication, the terms set out above are to be treated as equivalent. Presentation of the differences indicated by some authors in this publication is targeted not so much because of the importance of cooperation and its diversity meaning, which is important because of understanding of the approach to the essence: the objectives and course of cooperation. This is currently particularly important, and is best characterized by using terms such as dynamics, variability, turbulence, globality, and virtuality. (Penc-Pietrzak, 2015, pp. 143–145; Malewska, Sajdak, 2017, pp. 149).

According to the PWN definition “cooperation is an activity carried out jointly by some persons, institutions or countries” (*Słownik*, 2017). It is very general, and its basis is cooperation. There is no purpose, reason, conditions, dimension. In this sense, it is possible to distinguish cooperation which can be terminated at any time without loss to parties or party, and which can not be terminated. Cooperation considered in the context of the possibility and inability to complete it, but the lack of possibility of completion is due solely to the lack of individual capacity of the entity to operate in the market, according to authors, is related with supporting the achievement of objectives and increasing the scale of achievable effects and technical necessity. In the first case it is used by entities that may, but do not have

to refer to it. In the second, by the companies, that have no choice, which is related to the conducted activity – dependence on others. The first is a tool in the competitive struggle, the second, the need to maintain the market. It is interesting to note, that the purpose of cooperation is, in both cases, directly related to the activity pursued. In the case of material activity – production, processing of the material factor, the purpose of cooperation is optimization: the acquisition, processing and disposal of material factors. In the case of activities of intangible nature such as information, knowledge, the purpose of cooperation is optimization: acquisition, processing and disposal of intangible assets.

Looking at the issue of cooperation within the possibility of its establishment – freedom, without affecting the ability of the company to operate in the market, It should be recognized that this is primarily a static environment. As A. Davis (2007, p. 83) observes, the static in business is related to: predictability, routine, lack of vigilance, disregard of details. In such a situation, functioning does not require cooperation, of course, except that one, related to the sphere necessary for its existence. The company may establish cooperation and develop, gain the advantage, but not necessarily. The company does not need to: act fast, soon from the appearance of identifying upcoming events, use it for rapid development from the resources of other market participants. In this regard, the company may use co-operation freely, but most importantly, it is not obliged to do so.

## 2. Dynamism and volatility, and the cooperation and collaboration

A different situation to the one described previously, occurs in the case of functioning in a dynamic environment. According to R. Krupski, the dynamic, turbulent environment is characterized by the following tendencies (Krupski, 2011, p. 152):

- increasing the number of events directly affecting the functioning of enterprises that are characterized by lack of repetition, predictability and comparability to previous events – this is related to the limitation and, above all, the change of approach to the own and observed experiences,
- increasing the intensity of the environment – due to variability and dynamism, the company's management is increasingly paying attention to cooperation and interaction with other market participants,
- changes occurring in the environment, occur quickly and in a short period of time while increasing their impact on the company,
- the rate of change in the environment causes a continuous increase in the complexity of this environment.

In turn, M. Matejun and M. Nowicki indicate the following trends (Matejun, Nowicki, 2013, p.164):

- blurring of boundaries between the company and participants in the external environment, or generally between market participants,
- organizations of international importance are gaining weight,

- increasing importance of intangible assets – relations with the environment, access to information, image of the organization in the external environment,
- functional virtualization – the manifestation of the importance of information control as a key factor in the organization's performance in a dynamic environment.

The tendency, which can be defined as a scale tendency, is related to the fact that rapidly occurring and rapidly changing shifts that are overlooked and/or ignored in action, produce negative effects whose scale of impact on the company is increasing, along with their number. Considering the dynamic environment, it is important to note, that it has lost its individual ability to cope. This is a natural result of increasing the speed and quantity, the degree of impact and the nature of change, that is, the situation with which the company encounters in its daily existence. This is a natural result of increasing the speed and quantity, the degree of impact and the nature of change, that is, the situation with which the company encounters in its daily existence. It has to be a “flexible” organism.

M. Klimczuk-Kochańska notes that P. Drucker in the mid-1990s has already stated the fact of changing the reality in which companies existed earlier and now. This reality is called a turbulent economy. Among its most important features, the lack of predictability of development is most often mentioned. The factors, that according to the author, have led to this reality are: demographic change, market globalization, new technology development, organizational change in many large companies. Despite the volatility and unpredictability of change, the new reality gives business entities many opportunities for growth. Despite the volatility and unpredictability of change, the new reality gives economic operators many opportunities for growth. To achieve this, it is necessary to introduce innovative solutions, the source of which must be: identification of own shortages and shortcomings, acquired knowledge, needs and shortcomings in the market, creation of new management structures – entities. What is important, to achieve success, one cannot be confined to the management change, but try to accept, and even create the future (Klimczuk-Kochańska, 2016, p. 75).

Taking into account the evocative features of modern variable and dynamic reality one should consider the essence, goals and very important conditions of its functioning. Since there are so many changes, and each one is important, since it is difficult to anticipate and work on the basis of known experiences, since it is necessary to quickly respond to needs and shortcomings when it is necessary to acquire and use knowledge – is it possible for one participant market acting individually – one enterprise?

In answering the question, it should be stated that no individual company has the capacity to meet the above requirements. Without sufficient knowledge, it is unable to identify all relevant events, is unable to make appropriate adjustments on time, and is unable to create the future. As a result, it is not able to function spontaneously in a dynamic environment. It can stay on the market for at least some time, but it is certainly not able to develop and lead a normal competitive battle (Budzik, Zachorowska, 2016, p. 92). As E. Urbanowska-Sojkin observes, “if changes in the business environment are imperatives, their character is individualized. For this reason, the strategic management of an enterprise manifests itself in making changes to the strategy only when it is necessary to adapt to the environment and to

the extent that it is necessary to meet the challenges of environmental change” (Urbanowska-Sojkin, 2014, p. 154). It should therefore be noted that cooperation and interaction with other market participants is a necessity in a dynamically changing environment. It now allows not only to gain a competitive advantage, but also to “be a player” on the market.

### 3. Network organization in the dynamic reality

A network organization is an “organizational form that engages many organizations by instrumental individual or collective goals.” (Lachiewicz, Zakrzewska-Bielawska, 2012, p. 36). The network organization, otherwise known as a network structure, is currently one of the most important forms of cooperation (Lachiewicz, Zakrzewska-Bielawska, 2012, p. 36). This is because they are initiated in response to market needs and requirements between those, who have the appropriate strategic potential to enable them to respond as quickly and as fully as possible (Mikołajek-Gocejna, 2011, pp. 332–333).

Among the characteristics of network organizations that are particularly important due to the dynamics and variability of the environment should be mentioned (Maik, Godzisz, 2013, pp. 336–337):

- multiformity of activity – different tasks can be implemented in parallel,
- the competences of network participants complement each other – especially with respect to the integrator and other entities,
- formation within the network of decks (referred to in the literature as island (Bendkowski, 2014, p. 24) knowledge, especially important implicit knowledge (hidden),
- flexibility, connected with the possibility of dynamic network expansion – depending on the needs and requirements of the market,
- increase in activity and ability (including those related to scope, relevance and time) in learning.

Network organization is a flexible structure in action, which provides the ability to continuously adapt to market events – taking advantage of opportunities and avoiding hazards (Vega-Redondo, 2013, pp. 72–82). Network members exhibit co-specialization, bringing in a network of unique value creation capabilities, such as knowledge resources or market access, to claim that its idea was a natural response to the increasing speed of functioning (Durda, Krajcik, 2016, pp. 28–39). This organization makes it possible to optimally utilize and expand its strengths, to bring closer and closer relationships with other market participants with predisposing features. One of the most important features of network organization in dynamic reality is derived directly from the definition of the word network. It is in fact the most commonly associated with the “tool” used for fishing or catching animals. In this regard, since the dawn of history, man has been able to acquire from the environment the factor necessary for everyday existence. This function should also be indicated in relation to the network organization. In this sense it enables optimization of: identifying, acquiring and

using information. Information is one of the most important factors of existence. The effectiveness of its operation, its competitive position, depends on the effectiveness of its identification and acquisition. Network is also an “organism” capable of processing better and faster and practically use the acquired information. It is undoubtedly more “sensitive” to the weak (so important in dynamic reality) signals. This alone increases market opportunities.

#### 4. Information space and business cooperation

Dynamic changes and speed of operation are related to the increasing role of the efficiency of the process of information flow. Among the causes of variability, but also globalization, one generally indicates technological development, especially the development of ICT (Lemańska-Majdzik, Sobiegraj, 2013, pp. 114–115). The importance of information links is well illustrated by the words of M. Mikołajek-Golec: “There is no doubt that the basic element of modern organizational structures is the networks of information links, which allow sharing knowledge and the migration of knowledge and intelligence. Undoubtedly, this is due to the so-called network logic of each system or set of relations, which uses new information technologies” (Mikołajek-Gocejna, 2011, p. 333). It should be noted, however, that the role and significance of the information network is reflected in the characteristics of the network organization. The key determinant of its effectiveness is the effectiveness of information flows. On the other hand, as mentioned above, the network allows to optimize the process of identifying and acquiring information from the environment.

As far as information is concerned, in a static environment, companies may only be limited to acquisition, processing and use (Semenyuk, 2015, pp. 1–13). The information here is treated solely as a management object for the purposes of achieving the objectives. Such a limitation cannot in turn occur in the case of a dynamic environment. This is due to the fact that the identification and acquisition of information in the static environment is inherently “static”. The time from acquisition to use though important is not a key success factor. The same applies to the time it takes for information to be identified. The company is looking for new information and those that confirm the findings, observations and experience. In contrast, in the dynamic environment, most important information is not necessarily confirmed – low signals. (Nalepka, Bąk, 2012, p. 114). The time it takes from the appearance of the information to its practical use, counts the most. In such a situation, it is necessary to increase the ability to quickly identify, acquire and use relevant information.

This capacity is inextricably linked to the “increase in surface” of information absorption, but also to the desire to “enter” the place where the information is located. This is a natural effect of increasing speed in turbulent and dynamic environments. The organization cannot wait for information, it must strive to “be” at its creation and immediately benefit from it. The group of co-operating and co-operating entities is naturally able to identify more important information. It is also able to provide more information to the surroundings.

The place, where all the generated information is located, can be called an information space. Its conditions can be described as perfectly dynamic. The spread of information is

limited only by technical factors. And this, together with the development of ICT, including the Internet, has given information practically unlimited time and space (in the physical sense) of the flow capacity. According to the authors, this is a direct reason for the dynamics and variability of the environment and globalization.

The measure of success is now therefore to transfer management directly to the information space. Information in space constantly affects other information (the same units represented by this information), thus causing their reactions (*Przestrzeń...*, 2017). It must be stated that this is the essence of functioning in a dynamic reality. An entity that will be able to manage in such conditions will have a chance to succeed. Providing, identifying, retrieving, spreading, controlling, organizing information is a necessity due to the dynamics and globality of contemporary reality. Cooperation and collaboration, manifested among other things in the form of network organization make it possible to operate effectively in the information space.

In order to illustrate the role of the information space in the functioning of enterprises in a dynamic environment, the need for active management and the possibilities offered by this cooperation (including within the network organization) can be used as a result of research conducted in the field of enterprise innovation. Innovation as mentioned is one of the most important factors in the effectiveness of functioning in dynamic reality.

Among the most important innovation barriers one mentions: 66% financial barriers, 21% high technical innovation risk, 20% lack of patents and inventions, difficulty in accessing qualified staff 6%. Interesting in this respect are the results of studies regarding the activity in cooperation with other entities. Only 28% of organizations surveyed declared that 72% of such cooperation is not conducted. Only 28% of surveyed organizations declared cooperation, while in 72% of organizations, such cooperation is not conducted. The reasons for lack of cooperation were found due to: no need for co-operation 55%, self-commercialization 25%, cooperation is not profitable 20%, lack of knowledge about the possibility of co-operation 17%, lack of information related to recognition of other needs 7%.

The areas of business co-operation include: new/improved technology 75%, new/improved product 62%, new/improved marketing methods 32%, new/improved methods of organization and management and new/improved services by 22% (Poznańska, 2016, pp. 150–153).

On the basis of the results presented, there are still not many enterprises interested in establishing and cooperating. This is due to: the conviction that there is no need, not realizing the benefits, and the belief (illusion) of own power of influence. Interestingly, the lack of innovation, that is limiting the ability to interact in dynamic reality, is due to the lack of individual abilities.

Among the most important objectives of the cooperation are: 58.9% mutual sales, 52.7% knowledge exchange, 36.6% expertise, studies and analyzes, 33% joint participation in trade fairs, conferences and seminars, 26.8% (Lisowska, 2015, p. 179). As one can see, they are actually related to collaboration in the areas of: acquisition, spreading, delivery and practical use of information (Patel, Pettitt, Wilson, 2012, pp. 1–26).

The importance of working with each of the predisposing players in the information space is also illustrated by research into the acquisition of information necessary for the development and introduction of innovation. It turned out that this is not the research institutions or universities are in this regard the most important 31.6%. More valuable in this regard is cooperation with: customers 90.4%, suppliers 45.6%, other companies 49.6% (*Potencjal...*, 2016). This demonstrates the potential of every participant in the space to be a partner in cooperation. As the business is more open and flexible, the greater the benefits it can get.

## Conclusions

Dynamism, variability, turbulence, uncertainty, risk, unpredictability are the concepts that characterize the functioning of modern economic reality. This is due to the considerable shortage of time that businesses have to react to unpredictable market events. At the same time, the factor of the place, considered in terms of space (physical distance) has lost in importance. The need to quickly adapt to exploit opportunities and avoid dangers has increased the importance of cooperation between market participants. It should also be pointed out that speed, globality are related to the blurring of time and place constraints in business. Achieving success is, in the opinion of authors of this publication, primarily related to the management in the place, where the causal factors of all human activities, i.e. information, are located. With the development of information and communication technology, and above all, the Internet, the global information space emerged, accessible virtually to everyone. The unit has only limited functionality (due to its natural limitations). This problem decreases as a result of cooperation with other participants. In this regard, network organization is a great way to do this. It should be created by participants, whose goals coincide and complement. It should be flexible and adjusted to the objectives and tasks each time.

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## **ORGANIZACJA SIECIOWA – FUNKCJONOWANIE PRZEDSIĘBIORSTW W PRZESTRZENI INFORMACYJNEJ**

**Słowa kluczowe:** organizacja sieciowa, informacje, przestrzeń informacyjna

**Streszczenie.** Przestrzeń informacyjna jest „miejszem” występowania „życia” wszystkich informacji niezbędnych do prawidłowego funkcjonowania przedsiębiorstwa. Dzięki rozwojowi technologii informacyjnej, a zwłaszcza Internetu, każdy uczestnik życia gospodarczego ma praktycznie nieograniczoną możliwość pozyskiwania, ale i – co bardzo ważne – dostarczania informacji mających wpływ na jego pozycję konkurencyjną. Zarządzanie we współczesnej rzeczywistości jest związane z wykorzystywaniem szans i unikaniem zagrożeń. Kluczowym czynnikiem sukcesu jest czas, zarówno w odniesieniu do podjęcia, jak i efektów działań. W globalnej i cechującej się dynamiką rzeczywistości jednym z najważniejszych wyzwań jest nawiązywanie współpracy. Celem jest zapewnienie uczestniczącym jednostkom możliwości lepszego wykorzystania indywidualnych cech i zasobów – własnych i partnerów. Funkcjonowanie każdego przedsiębiorstwa oparte jest na informacjach. Każde działanie można rozpatrywać w ujęciu informacyjnym, jako działanie przebiegające w przestrzeni informacyjnej. Celem artykułu jest przedstawienie istoty, cech oraz zalet zarządzania w przestrzeni informacyjnej. Celem jest również zwrócenie uwagi na fakt, że efektywność organizacji sieciowej jako grupy współpracujących jednostek jest ściśle uzależniona od efektywności funkcjonowania jej jako całości oraz każdego z jej elementów właśnie w przestrzeni informacyjnej.

*Translated by Aleksandra Ptak*

### **Cytowanie**

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