

# IDENTIFICATION OF ENTERPRISE COOPERATION LEVELS ON ELECTRONIC MARKETS

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## Abstract

*Collaboration and cooperation of companies is one of the characteristic features of modern business. The number of transactions and relationships on electronic markets is increasing. Such cooperation is of a different type depending on the trade, cooperating companies, technology used and the object of transaction. The aim of this article is to analyse and identify the levels of cooperation between enterprises on electronic markets. The first part presents the essence of electronic markets. Further part highlights the technological and organizational solutions used in B2B and B2C relations. On this basis, in the third part classification of cooperation levels was made.*

**Key Words:** cooperation, collaboration, cooptition, e-market, network organization, virtual organization

## Introduction

Cooperation and collaboration between companies is an immanent feature of modern economy. Virtually, every company develops relationships with other entities that are more than a simple, repeatable transaction. Collaboration and cooperation is associated with permanent relationships that are supposed to bring tangible benefits to both partners. Partnerships can occur in both horizontal relations (between competitors), and vertical ones (between companies which are consecutive elements in the supply chain). Partners and collaborators work together in a common economic space that is the market. In economic terms the market should be treated as general relations between the actors involved in the process of exchange.

However, the market undergoes changes. The most important factor influencing changes of the shape of the modern market is the Internet. As a result of the development of information and communication networks and services, so called electronic market (electronic market, e-market) was created. This concept appeared for the first time in the early 90s of the twentieth century. Electronic market changed the shape of many business and economic processes. Due to the fact that e-market is a virtual concept, the processes occurring therein become virtual as well.

The development of e-markets also affected the transformation in the context of cooperation. Enterprises establish cooperation more easily, different types of networks of organizations are created, the exchange and diffusion of knowledge within the system of cooperation occurs. These changes are the result of the blurring of the temporal and spatial barriers and the continuous increase in information resources in the economy.

Cooperation of companies in the electronic markets can have a different nature and degree of closer tightening between the cooperating entities. The article identifies cooperation levels on electronic markets. The basis for appointing these levels is the degree of virtualization of business processes in the Internet space between the cooperating entities.

## The essence of electronic markets

The emergence and development of electronic markets was associated with the emergence of new communication techniques and information processing, particularly the Internet. For the first time the concept of electronic market (e-market) appeared in 1987 in the publication by Malone, Yates and Bejnamin (Malone, Yates & Bejnamin, 1987). 'E-markets have been defined according to the traditional market paradigm: structures which coordinate the flow of materials or services, through supply-demand forces, as well as through external transactions between individuals and firms.' This definition, however, lacks the technological aspect. More technological focus was given by Bakos in 1991 (Bakos, 1991): 'an electronic marketplace is an interorganizational information system that allows buyers and sellers to exchange information about prices and product offering.' A full and basically still current definition can be (Strader & Shaw, 1997): 'e-markets can support one or more phases of a transaction process, starting from information finding and ending with after-sales services and support.' (see also: Sounderpandian, 2007)

Along with the development of electronic markets, models of relations between entities in the Internet space have developed, such as business-to-business (B2B), business to customer (B2C), B2A, B2F, etc. From the point of view of enterprise cooperation, the paramount importance has B2B model. For electronic markets and B2B models information and communication technology (ICT) should be considered as a factor stimulating cooperation.

ICT stimulates cooperation by eliminating barriers in the relations between enterprises, becoming a catalyst for cooperation.

Electronic markets are virtual creations, that means such that have a intangible, flexible, based on digital systems and information technology form. Therefore, entities operating on electronic markets and the processes occurring in them are subjected to virtualization. The result is eg .: virtual organizations, network organizations, learning organizations, etc. (compare: Ziółkowska, 2013) Examples of processes undergoing virtualization are: orders, purchases, payments, logistics, accounting, marketing, etc. These processes are typically registration. Modern ICT solutions and electronic markets also allow for virtualization of management processes, planning, projects, etc.

As a result of the development of electronic markets, the use of ICT and of wider changes in the economy are followed by the processes associated with virtualization of environment organization. Environment is evolving in the direction of a virtual-network space - Figure 1.

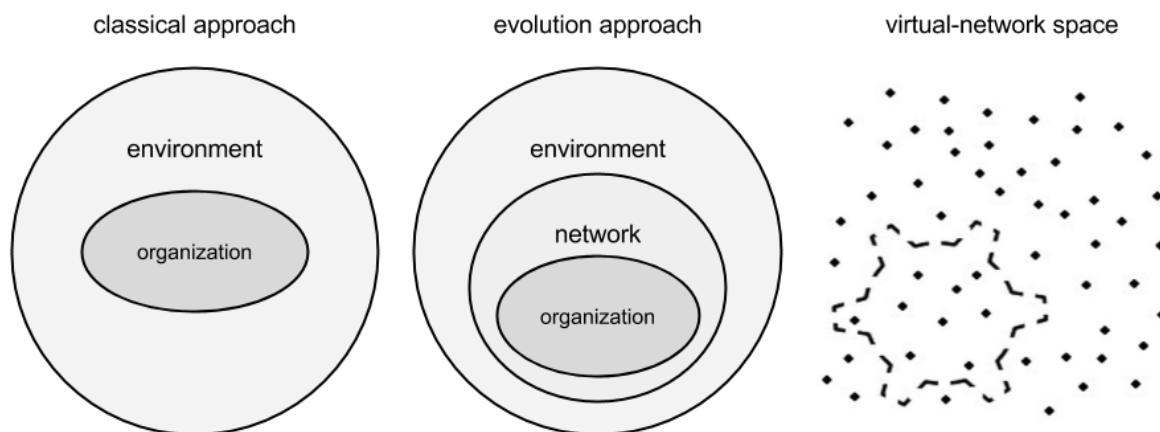


Fig. 1. Redefining the comprehension of the organization's environment in terms of technological change

Source: Kołodziejczyk, A. (2012). Ewolucja struktur organizacyjnych ku przestrzeni wirtualno-sieciowej, *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu* 275, Wrocław, 72.

The approach presented in Fig. 1 indicates that space organization is treated as a broader concept, open to new fields of the significance of virtual-network conditions. (Kołodziejczyk, 2012)

Among other things, thanks to technology, a contemporary organization is a part of an interconnected multi-network of cooperating and competing entities.

### Cooperation on electronic markets

The concept of partnership and cooperation is strongly embedded in business practice and literature of the subject (eg. Romanowska & Trocki, 2002). Over the years, a series of models of cooperation such as .: franchising, strategic alliances, join-ventures, licensing, delivery, etc were created. The emergence and development of electronic markets, however, contribute to the change in the approach to cooperation. An increasing number of relationships between partners is tied in a virtual space of the Internet. Dominant resource of the organization are data and information. This favors the formation of a network structure, virtual enterprises, geographically dispersed organizations. ICT has become a binder and a determinant of cooperation for them.

Entities acting in electronic markets operate in a changing, turbulent environment, accompanied by competitiveness and globalization. These phenomena are interwoven, forming a series of often difficult to identify external conditions. However, these phenomena should not be seen only in categories of threats because they also generate opportunities for businesses. Market competition between entities is a natural phenomenon, but there are situations where it is more preferable to collaborate with another company or group of companies.

Counterweight to the competition is the phenomenon of cooperation (moore in: Cygler, 2013; Konkurent jako kooperant, 2004), a partnership of companies at various levels of the global market, which increases the range of relationships between organizations.

The cooperating companies may remain distinct competitive market participants. It can also lead to the creation of strong links between the cooperating companies that will blur their differences. Despite many manifestations of cooperation between enterprises, entities are constantly looking for the ways to obtain a competitive advantage by applying a variety of strategies. 'The company's competitive advantage is the ability of conscious identification, implementation, development, protection and benefit from these unique resources and skills being sought and valued in the market are not available in the same field by competitors.' (Adamik, 2003)

Currently more and more increasingly innovative forms of relating between competing enterprises, as well as, for example, in the context of a relationship of cooperation are being observed. This makes it possible to say that the source of competitive advantage is a set of relationships between the company and other market entities. The entity that wins is the one which configures a set of relationships that gives the possibility of a better deal on the market. As a result, competition for the value of the relationship is treated as the third pillar of the strategy theory (after the competition for products and markets, and the resources and competences). (Contractor & Beldon 2002, based on: Niemczyk & Stanczyk-Hugiet, 2011). Thus, cooperative relations are often competitive advantage of the company.

'For the cooperation simultaneous realization of the mutual and individual goals by the partners, as well as voluntary nature of entering into relationships is characteristic. This simultaneity of different goals and objectives of the cooperating companies can makes cooperative relationships complex.' (Mazur, 2011) The consistency of the individual and overall goals is the key element of cooperation between entities. The occurrence of antagonistic purposes in any cell, or at any stage of cooperation, eliminates the essence of cooperation.

Cooperating enterprises create a network of mutual relations of varying intensity relationship that depend among other things on the type of cooperation and its duration.

Instability of the environment makes it necessary to modify the organizational structure or entering by companies in other areas of activity. 'Against the backdrop of emerging information and communication technologies the term virtuality started to be used.' (Kołodziejczyk, 2012) 'The prevailing perception is virtual organization issues as a shorthand including solutions based on modern technology and also the possibilities to expand, thanks to this technology, the image of organization.' (Niemczyk & Olejczyk, 2005) 'Virtual enterprise is the latest and most radical form of management and business model of the future at the same time. (...) In terms of conceptual meaning, virtual enterprise (agile, intelligent) is a kind of extension and culmination of the process approach and the idea of a network organization.' (Suszyński, 2007)

It is possible to meet with interchangeable use of the concept of network and virtual organizations, as reflected in the article by J. Kisielnicki: "Concepts of network organization uses, inter alia, P. Drucker (Drucker, 1998). P. Senge referring to them as "learning organizations" (Senge, 2002). In contrast, M. Hammer, J. Champy use the term 'organizations after reengineering' (Hammer & Champy, 1994). Often, it is also called a virtual organization.' (Kisielnicki, 2002, 2008) (based on: Kisielnicki, 2014)

Network organization is formed as a result of voluntary membership for cooperation. It is characteristic of action in cyberspace, which consists of two basic elements: (Kisielnicki, 2014)

- computers located at different places of physical space and able to receive or send information,
- global networks binding computers and enabling the transfer of this information.

Therefore, the key factor in the creation and operation of virtual organizations is the information and the possibility of quick communication between entities belonging to the organization.

On the basis of network companies so-called clusters are formed. It is a type of network providing the possibility for entering enterprises to take advantage of the cooperation and to add network strategies to the existing approaches: market position, resources, evolution, behavior towards the environment (Niemczyk, 2007). Companies grouped in clusters can establish relationships of a horizontal or vertical form, cooperating and competing with each other.

### **Levels of cooperation on electronic market**

The study attempts to identify cooperation levels on electronic market. The relationships in collaborative networks differ in the intensity of relationships, business processes subjected to areas of virtualization, the environment in which they are found, and the like.

Levels of cooperation can be seen in different planes and angles. From the standpoint of electronic markets seems the most appropriate approach levels of cooperation from the perspective of virtualization processes, organization and virtualization and virtualization of the environment. Electronic markets are in fact a place for virtualization.

Innovative technologies and web services allow for the digitization of these areas and influence the fact that they are becoming blurred.

The first factor to consider when identifying levels of corporations are business processes that occur between partners. Modern ICT solutions and web services allow their virtualization. This means that the processes which have already occurred in the real space are currently occurring in the area of electronic market. Processes subjected to digitalization and virtualization include:

- processes related to the implementation and operation of the transaction, such as: procurement of goods, logistics services, billing, supply planning, electronic payment, inventory management;
- marketing and public relations, eg, electronic marketing, social media, marketing campaigns, loyalty programs;
- administration, eg outsourcing accounting services.

Virtualization of processes is possible through the use of ICT solutions. In fact, since the inception of the Internet there were tools for safe, fast and automatic data processing between companies in wide area networks. These solutions were primarily EDI (Electronic Data Interchange), VPN (Virtual Private Network) and Extranet. Currently, the dominant technologies in this area are: Cloud Computing and SaaS (Software as a Service). The development of cloud computing and SaaS is due to the progressive geographical dispersion of cooperating entities. Virtualization processes can occur in traditional organizational structures.

ICT and electronic markets allow for the virtualization of organization. This factor is considered as another element to identify Cooperation levels. Virtualization can be the entire organization or a selected part of it. This organization (or part of it) operates in the web space, referring to relationships with other entities, creating a network with them. From the customer perspective, it is seen as one cohesive body (Dziembek, 2013). It is bound by the number of significant features: carries out tasks and processes, it is profitable, it executes transactions, it meets customer expectations, etc. Most of the processes taking place in network organizations are virtual, and the basic resources are information and knowledge. Networks created as a part of virtual organizations can have diversity in structure, range and the number of nodes (Czakon, .

On the electronic market, more and more of the various networks and virtual enterprises are arising. Traditional environment begins to change in the direction of virtual-network space. Space in which there are virtual collaborators, virtual competitors and virtual clients. Such an environment, due to the lack of real structures, becomes even more flexible, unpredictable and turbulent.

On the basis of specified factors it can be determined that there are three basic levels of cooperation between enterprises on electronic markets - Table 1.

Table 1. Levels of cooperation between enterprises on electronic markets

Cooperation Levels:	Features			
<b>Level III</b>	Virtual processes	business	Virtual organization and network	Virtual-network space
<b>Level II</b>	Virtual processes	business	Virtual organization and network	Traditional Environment
<b>Level I</b>	Virtual processes	business	Traditional Organization	Traditional Environment

Source: Own study

Three presented cooperation levels represent the contribution level (base?) for further discussion and empirical research on cooperation between enterprises in electronic market environment.

### Summary

The presented considerations suggest the development of a virtual market (which is an electronic market) and virtual organizations. The development of techniques of communication and data processing, enabling the exchange of information in an alternative to traditional forms of communication contributed to the creation of a virtual market. The exchange of information has become much faster and easier, there has been a blurring of geographical boundaries between the sender and the receiver. The existence of the market, in turn, has created a virtual environment for the formation of virtual organizations. Such organizations frequently, in order to achieve a better competitive position, establish cooperation with other entities.

In this way, a network of links between the virtual market participants, and the boundaries of individual entities are blurred. Cooperation between the participants in the electronic market may take a different character in terms of its duration, the degree of formalization or areas of activity.

It should be emphasized that the virtual market exists in parallel to the traditional market, and in some areas these markets merge or complement. Thus, these findings can not be regarded as the evaluation value of any market area. Technical progress, technology, communication promotes the development of the wider virtualization, however, some areas of activity of the entities still take place in the traditional market.

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