

DIMENSIONS AND PARTICULAR CHARACTERISTICS OF COLLABORATIVE NETWORKS

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***Abstract:** The overall trend of the information society by widening the global electronic space and the access to information through technology and information ubiquity led to the emergence of new business models and hence to new types of organizations. Changes taking place in society and organizational space are profound and ample, shifting to a new paradigm, namely from the information society to the virtual company, with great impact on how people carry out their activities, communicate and share their knowledge through collaboration. Collaboration between organizations has become a condition for them to become competitive in a dynamic and complex environment, while collaborative networks get together the individual potentials of organizations and generate synergies.*

***Keywords:** collaborative networks, information society, new business models, new types of organizations.*

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1. Introduction

From an organizational perspective, collaboration within collaborative networks is treated in close connection with the phenomenon of

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globalization, which is essentially based on the extinction of distances and the removal of organizational boundaries. The process of globalization involves not only the removal of organizational boundaries, but also generates the opening of new spaces in which organizations collaborate by exploiting their individual potential through synergies. To understand profoundly the dimensions and characteristics of collaborative networks, it is necessary to undertake a micro level analysis by identifying the distinctive features that generated collaborative behavior and also to take into account the broader context outside the organization. A paradox of management in this new paradigm is that the convergence of standards, processes and existing technologies for easier integration in collaborative networks has increased the complexity of interaction in this space.

Collaborative networks differ greatly from other forms that collaboration between organizations may take. A particular and more evolved case, with future development prospects, are the virtual organizations. Collaborative networks generate multiple benefits to member organizations, not only due to the complexity of interaction between organizations, but rather by the benefits that the establishment of a single entity brings, with flexible boundaries and where the cohesion generates advantages and the collaboration is mediated by technology and communication means.

In the context of current developments, the concept and model of sustainable development, started as 40 years ago, have still fewer followers. They are disputed, discussed, critiqued, and often simply forgotten (if not deliberately ignored) the current socio-economic analysis. That's why the cooperation under different forms could be an effective solution for meeting the challenges of a new dynamic environment (Cretu, 2012).

One of the authors that treated the characteristics and complex effects of organizational progress is Mowshowitz. In his vision, the non-incremental changes which take place in society and technology generate profound changes at organizational level, thus generating organizational progress (Mowshowitz, 1994). So, the basis of organizational progress is represented by the changes that take taking in society and in the field of technology, with the complexity of the forms that collaborative networks can take depending greatly on these changes.

2. Principles of Collaboration within Collaborative Networks

Collaborative networks are composed of firms, companies, even institutions with distinctive and fundamental or complementary competences obtained by excellence. The formation of the unique organizational potential depends largely on the ability of organizations to focus "on what they can do best". For further resources, competences and capabilities through collaboration within networks the organizations appeal to other organizations that also seek to develop their unique potential in order to create as much business value as possible (Bahrami and Evans, 2004). Thus, a first premise is the identification and development of the unique organizational potential.

The second principle is specific to the logic of contingency theory and to the influence that the factors from the business environment have on the organizations' strategic approach. The turbulence and the complexity that define the current business environment had over time various influences on organizations. In order to be competitive in this context, organizations must on the one hand to focus on the unique characteristics that define and exploit the potentials they have. On the other hand, in order to achieve their strategic objectives, organizations collaborate to access the competences and potential of other organizations (Berlie, 2010). In this sense, the complementarity of organizations increases their ability to create synergies through collaboration.

Organizations have always collaborated throughout the time, but the relationships between them have taken various forms because of the influence of the factors from the business environment and the changes within the organizations. The information technology and communication networks came to the support of organizations, providing complex channels for the establishment of collaborative relationships and for the generation of competitive advantages through collaboration (Carugati and Rossignoli, 2011). The business environment has generated changes in how organizations perceived the role of collaboration, which resulted in the emergence of new business models (Jansen et al., 2007). Therefore, the growing importance of collaboration between organizations for meeting their strategic objectives is a principle underlying the emergence of collaborative networks.

Collaborative business culture is an essential principle of the emergence of collaborative networks and collaborative forms in general.

Within an organization all processes are sensibly influenced when it comes to contents and scope, by the culture developed by the respective organization (Dragomir Ștefănescu, Pânzaru, 2009). The lack of a business culture to encourage collaboration both within organizations and developing collaborative relationships outside organizations will be a barrier to the emergence of all forms of collaborative relationships.

Other principles underlying the optimal functioning of collaborative networks are: modular approach of organizational components, workforce flexibility, organizational structures' flexibility, business process outsourcing, strategic partnerships development, clear understanding of roles and objectives that organizations have in collaborative partnerships, individual and joint risk taking, development of a context favorable to individual and organizational collaboration, the existence of information technology platforms to mediate the collaborative relationships.

Collaboration between traditional organizations through collaborative networks expands the strategic horizon and enables the sharing of resources, skills, know-how, especially of the potentials that the organizations dispose of (Jarillo, 1993). The role of electronic communication is to solve distance-related problems, especially when the geographical distances between organizations are large (Dallago and Guglielmetti, 2010). Most times, information technology and communications mediate not only the communication and information exchange, but also the process management within collaborative networks. For the information flow, processes and communication within a collaborative network to be effective, a meta-management of collaborative networks is required. In this logic of meta-management, the standardization and the existence of communication and cultural interfaces between member organizations of a collaborative network are prerequisites of a necessary compatibilization, especially if the organizations experience their first collaboration (Ghosh, 2005). A second condition for a successful collaboration is the need for a context conducive to diffusion and sharing of information. An important role in this process pertains to the knowledge bases and to the removal of the dependence on human resources as main carriers of knowledge. Unrestricted access to knowledge bases, know-how and information contributes to the best use of the joint potential of organizations.

There are several reasons for which organizations get to work within collaborative networks. There is a tendency for organizations to collaborate

in order to share the risks of a turbulent economic context. Other organizations collaborate for the benefit of know-how and resources available to other organizations in the process of innovation, research and development. Due to the flexibility, adaptability and decentralization of hierarchical structures, a collaborative network may respond to the conditions of business environment better than a vertically integrated organization (Hildreth and Kimble, 2004).

Also, the networks on skills integration, know-how and other distinctive and unique items that member organizations possess may achieve products with a high degree of innovation and maintain a competitive position on a longer time horizon.

During the decentralization of processing power held by the information systems, most organizations have made significant investments in information technology to increase flexibility and to respond in an agile manner to challenges in the business environment. The current period we are going through is a time of getting back to information centralism by providing hardware and software services in a flexible manner, on demand for organizations depending on their pace of development. Cloud computing technology will increase the degree of decentralization, especially of virtualization of traditional organizations, as well as of collaborative relationships between organizations. Using the same standards, organizations will have greater ability to integrate into collaborative networks in the future. The role of technology is becoming increasingly evident as a determinant factor of organizational progress and of the emergence of new types of collaborative forms, thus opening up new possibilities of expressing the organizational potential in a virtual manner.

The diversity of organizations that are part of collaborative networks and the convergence to common strategic objectives determine the identification of ways to increase cohesion in order to generate synergies. One of the most important characteristics of collaborative networks, namely their flexibility, can lead to decreased cohesion. The composition of networks is dynamic and network members can leave the networks, just as other organizations may join it. Therefore, flexibility can cause negative effects if the network does not create cohesion within it, and individual and common expectations are not communicated effectively.

In order to preserve their distinctive characteristics and to be competitive, organizations need access to knowledge and know-how to a

greater extent than access to physical goods and assets. To meet this condition, collaborative networks must be placed in a permanent collaborative relationship with knowledge and competence suppliers, competence and skill trainers and knowledge generators. The dynamics of business environment, the magnitude of changes and challenges to which collaborative networks must respond can generate positive effects if they have a proactive management and they continually develop their knowledge base. The permanent renewal of knowledge is a prerequisite for the survival and success of networks, especially in the knowledge-based economy.

3. Dimensions and Characteristics of Organizations within Collaborative Networks

To make a clear distinction between traditional organizations and organizations that are part of collaborative networks, we have identified several characteristics of organizations that choose to collaborate within collaborative networks.

An important feature is the lack of physical traditional boundaries of the organizations within the network, while the intangible resources and the exploitation of network potential are also of great importance.

Another important feature is the dependence on information technology. The intermediation of interaction within collaborative networks is achieved by information technology and communications networks. Therefore, the process development involves the use of technology. Many authors consider information technology as the core of collaborative networks, as it represents the base of complex information flows. Compared to conventional organizations which use their own physical structures, the collaborative networks use the networks as support for the development of business activities and processes. Information technology increases the flexibility and the degree of independence of human resources within collaborative networks, these gaining higher mobility. This is also a measure of trust among the participants to such interactions (Nastase, 2009), leading to the increasing of strengths or weakness of a network, depending on the perception of the benefits from the participation to these networks.

The organizations' integration degree in collaborative networks leads to the expansion of organizational boundaries and to the avoidance of vertical integration. Collaborative relationships with suppliers, customers

and even with competitors, through what we call coopepetition, lead to increased agility and flexibility within collaborative networks.

Networked organizations are particularly agile in terms of response to business challenges, and this is largely due to their flexibility. Collaborative networks have a high degree of reconfiguration and division into components in order to be consistent with the objectives pursued, and this generates the need for increased flexibility of the member organizations.

Another classification of the dimensions and characteristics of networked organizations can be carried out by the following criteria:

1. Type of initiatives
 - *Initiatives such as "from-top-to-bottom"* – through strategies, programs initiated by governments and agencies responsible for increasing organizational competitiveness and regional development;
 - *Initiatives such as "from-bottom-to-top"* – based on initiatives from the business environment, from the spin-off academic environment, from multinational companies or from entrepreneurial behavior.
2. Geographical scope
 - *Localized* – small groups in small geographical areas;
 - *Dispersed* – in large areas or urban areas, in large metropolitan areas.
3. Economic implications
 - *Large* – a variety of products in different business sectors, but who have collaborative relationships and links between them;
 - *Narrow* – focus on a reduced number of products, services or business sectors.
4. The complexity of collaborative relationships
 - *Complex* – collaborative relationships are initiated at several levels of complexity (e.g. collaborative relationships between providers and beneficiaries through simple transactions are at a lower level of complexity versus collaborative relationships for research - development and innovation in a collaborative manner);
 - *Simple* – activities and processes developed through collaborative relationships do not have a high degree of complexity.
5. Activities, information flows and processes
 - *Diversified and complex activities, processes and flows* – through collaborative networks there are being developed multiple and diversified activities and processes that generate value;

- *A small number of activities, processes and flows* – entities that are part of collaborative networks develop a limited number of less diversified activities.
6. Transfer of know-how and technology
- *High transfer capacity* – collaborative networks increase the capacity of member organizations to incorporate in organizational processes new technologies and the know-how that partner organizations dispose of. One of the goals of collaborative networks is to increase the ability to absorb and use new technologies and to transfer the know-how;
 - *Degree of interaction* – Interaction between organizations within the network provides access to know-how and technology, and in order to benefit of the advantages brought by technology in the organizational plan, organizations must develop the ability to use technology at the same pace with the technological progress.
7. Spatial organization
- *Dominance of businesses, companies, large multinationals* – concentric development around the nodes or cores that they represent within collaborative networks;
 - *The prevalence of small businesses* – the shapes that collaborative networks have depend on the interaction between organizations, the relationship between them and the size of the member organizations. In the case of prevalence of small businesses and organizations there is no dominant core organization.
8. Stage of development
- *Functional* – the critical number of organizations, knowledge, resources and other contextual factors enable the development of collaborative activities between organizations;
 - *Latent* – there is a critical number of organizations, but the interaction between these, the information flow and the absence of other contingency factors maintain the organizations in expectation. In some cases, the latent state can be represented by source networks from which functional collaborative networks can emerge when opportunities are identified in the business environment;
 - *With high potential of emergence* – preconditions for the emergence of collaborative networks exist, but there is a lack of strategy and a coordination program of inter-organizational collaboration, as well as precise objectives to bring together the organizations;

- *The strategic objectives* – this type of networks are monitored by governmental factors who can implement "from-top-to-bottom" strategies for the best use of regional potential.

Conclusions

By their nature, collaborative networks generate a variety of benefits and positive effects for their members. Some of these benefits derive from the principles underlying the collaborative networks, while others derive from the peculiarity of the activities and processes carried out within their frame.

Some of the most important benefits that collaborative networks generate are: effective coordination in space and time, reduced costs and removal of intermediate transactions, increased flexibility in the way of combining business activities and processes, simplification of management systems, decentralization of organizational structures, proactivity, access to know-how and knowledge and attainment of competitive advantages.

The technological progress has contributed to the increase in the use of benefits of collaborative networks. The technology is a prerequisite for the collaboration within collaborative networks. Software and hardware collaborative platforms and systems use the organizational potential and open new opportunities for developing new potentials. Through technology, organizations become more agile, synchronizing in detail the business activities and processes. The technology has also solved one of the most pressing problems of organizations, namely the removal of space and time barriers. The technological progress will generate new ways through which organizations will contribute to the emergence of new business models and organizational structures and forms.

Spatial barriers removal and response time reduction can also lead to significant reduction in costs, immediate exploitation of opportunities and counter-balance of threats in the business environment. Agility and proactivity with which collaborative networks succeed to meet the challenges is one of the biggest benefits that these collaborative forms can bring to member organizations.

From the perspective of *structural flexibility* and of the organizations' capacity to respond, through the most appropriate combinations, to the business environment, the collaborative networks undoubtedly generate benefits through their actions. *The modular approach, the flexibility of*

activities and components that form the networks lead to agility and cost reduction. The alternatives at the disposal of organizations to create synergies between activities, processes and other components of the organizations lead to a better adaptation of organizations to the business environment.

The technological progress has generated an unprecedented increase in organizational flexibility. This flexibility has led to the disintegration of business activities and processes and to the possibility of recombination in a very wide variety of manners.

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