

Foundations of Network Organizations Ontology

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Originally published in: "International Journal of Business and Management Studies",
ISSN: 2158-1479 :: 1(1):565–569 (2012)

Abstract: The issue of network organizations is a complex problem, which reflects the contemporary strategic management. Many publications in this field emphasize the collaboration between companies as the essence of the network and therefore represent an epistemological approach to this problem. However, there remains the problem of explaining the richness of these forms that occur in business practice and often researchers don't try to answer the question how to approach the explanation of this diversity.

The aim of this article is to determine the field which is the theoretical basis for the recognition of ontological approach in interorganizational networks. The content of the paper is subordinated to this objective, first by discussing the characteristics of network organizations threads, secondly, by attempting to identify the conditions for a typology of these organizations.

Keywords: network, ontology.

Introduction

The dynamics of changes in the environment and the related high degree of uncertainty of business bring the challenges for companies and modify their functioning. In view of these considerations there is critical position to the traditional forms of organizational structures. Only isolated organizational structures related to the aims and objectives of the enterprise because of the degree of variability in environmental conditions seem to repel the first wave of criticism.

This is because the organization takes action for responding to the changing external environment. In the new organizational structures are essential components of formal and informal groups within the organization, objectives of these groups, and issues of leadership within the organization. These findings reveal that these structures (in this network organization) can be considered the following aspects [Piotrowicz 2004, 14-17]:

- formal structure (define explicitly the elements making up the structure and relations between them);
- informal structure (system components and the relationships between them to deviate from the formal structure, it is not explicitly expressed);
- non-formal structures (these elements and relationships between them, which were deliberately omitted from the formal structure);
- outside the formal structure (arrangement of elements and relations, including activities related to the incompatibility individual goals / objectives of the formal group);
- the structure of unfunded (not observed the rules arising from the formal structure);
- the actual structure (arrangement of elements and relations between them, which actually exist);
- the structure of conscious (layout of components and relations between them, which are known to at least some members of the organization);
- structure of the unconscious (arrangement of and relationships between them are outside the awareness of members of the organization).

Further increasing need for flexibility and efficiency, set including by the rate of adaptation to changes in the environment, risk reduction activities and cost-cutting require the introduction of a new style of business management and new forms of relationships between members of the organization and between the cooperating companies. Established form of organization (network organization) is the abandonment of the traditional understanding of centralization/decentralization as an important factor of constructing organization highlighting the analysis of relationships between its members. The network in this case is a phenomenon which is based on liquidity and within which is developing ways of functioning of individual elements that make up it, which is especially important for interorganizational networks [Glinka and Hensel 1999, 91].

Basics of network organizations

Pillars for the creation of linkages between enterprises are determinants of contemporary external environment. Inability to predict phenomena in a certain degree due to the complexity and uncertainty of changes in the wider context of socio-economic makes in order to minimize business risks it's necessary to integrate knowledge from different segments of reality [Elskytė and Zinkevičiūtė 2008, 646-652].

Such cooperation often will be based on the creation of groups interested in implementing a particular purpose and cooperation between the organizations will be taken because of the intangible resources. Analysis of network structure will require a look at it in terms of the intersecting interests of different actors threads but also in understanding it more abstractly as a set of organizations in the structure of communication [Brilman 2002, 426-428]. Among conditions of creating a network organization can be distinguished [Borczech and Czakon 2005, 18-21]:

- desire to improve the competitiveness (the existence of an organization in the network and its function is to ensure its survival);
- reducing uncertainty (for example, associated with the potential sale of products and services);
- network flexibility linked to its internal structure or its ability to expand without incurring additional costs.

It is worth noting that the first and third of those reasons relate to the desire of organizations to learn and build resources within their disposal and disposal of network, which in turn will also be reflected in the reduction of uncertainty (reason number two) [Czakon 2007, 90].

It can be assumed in the literature that the concept of a network describes a lot of phenomena relevant to modern business and modern economy such as the issue of level of institutionalization of the cooperation between enterprises or between individuals [Blaich 2004, 7].

In terms of the strategic management network is therefore a useful link (long or short term) between various commercial organizations, which allows them to achieve or maintain a relative competitive advantage - in this case is the most important issue of information flow between the entities that network [Jarillo 1993, 6.]. It is understood however that in the context of an unstable external conditions of the network system operation the most important are the horizontal interactions between the organization and between them and the environment. [Van Alstyne 1997, 83-152].

There are therefore three aspects of network construction based on achieving competitive advantage: specialized and complementary resources, joint control over them and a common goal. These are aspects that distinguish the network from such well-known and described in economics and management concepts such as hierarchical structures and markets [Bernecker 2004, 77-78]. Characteristic of the network is heterarchia too, which on one side imposes restrictions on the choices by cooperating organizations, on the other hand, can not make the assessment of cooperation it through imposed on all users of the system point of view [Płoszajski 2000, 36].

The above understanding of the network tends to the view that network organizations have the following attributes: are determined in implementing the strategic plan (geared to achieving a common strategic objective) are based on the potential synergistic of elements constituting it (built on the basis of complementarity of resources) and their organizational forms may be staggered [Krupski and Łobos 2004, p. 382]. At the same time it's necessary to indicate that companies in the network depend on the preservation of autonomy which is associated with strategic independence of those organizations, which is associated with protection against possible takeover generated value by partners (and which would not have been generated without a network) [Child and Faulkner 2003, 25].

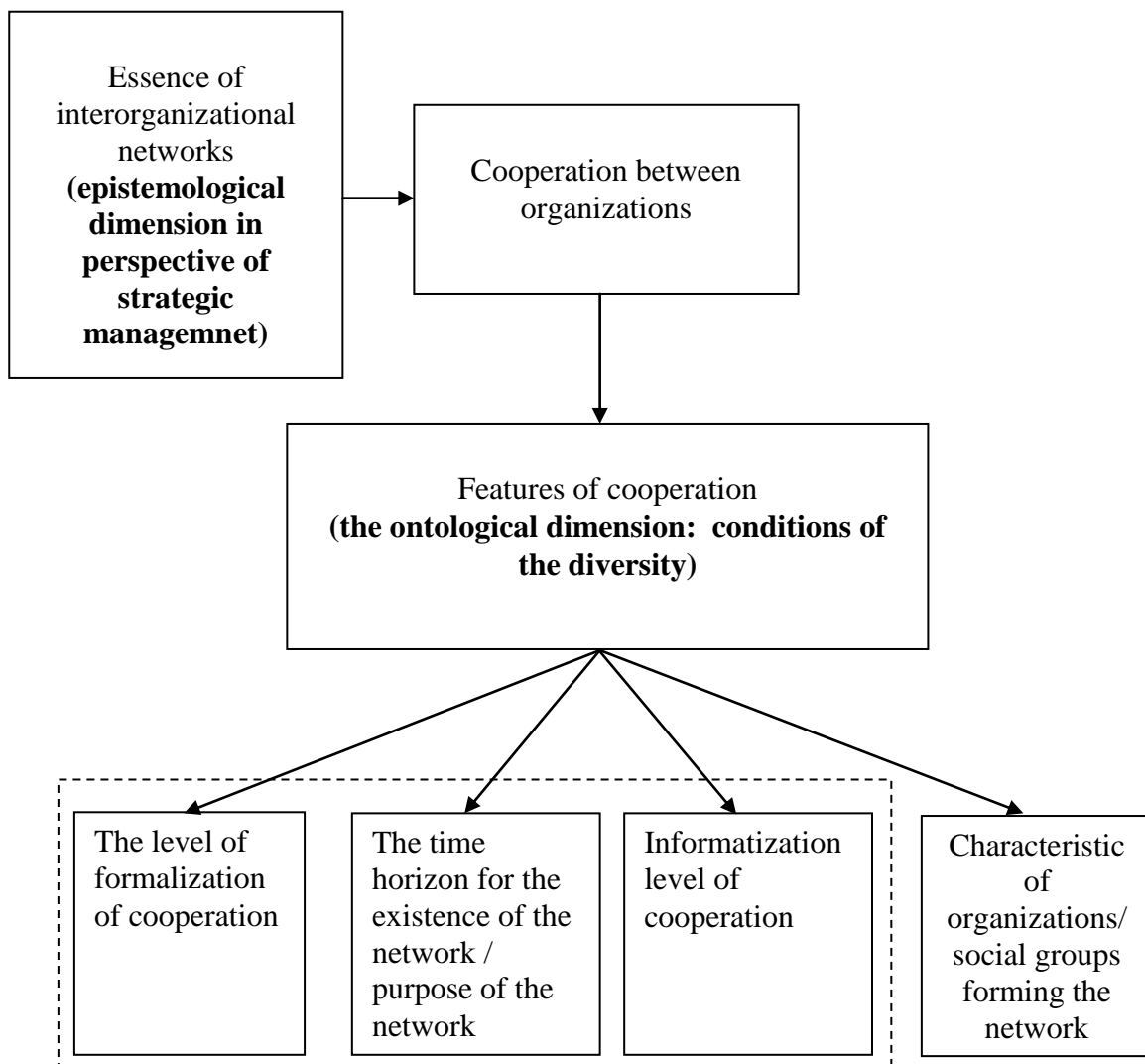
No matter what role will be to fulfill by the different actors in the network structure it can be concluded that the key issues that must be resolved by the its construction are: the allocation of tasks and decision-making powers, process of communication between members of a network system in order to achieve a synergistic effect, or the use of modern communication technologies in the implementation of the tasks [Siggelkow and Rivkin 2005, 101-122]. This is because nowadays it's assumed that the organization itself and other organizations are conscious participants in the system of cooperation (which includes the characteristics and architecture of the linkages between its elements), in which every firm wants to play an active role to influence the other participants in the system.

Criteria for distinguishing between types of interorganizational networks

The existence of cooperation between economic operators in varying degrees and in different conditions makes that there is no single criterion for awards interorganizational types of network. Researchers in this area provide network types identified on the basis of these criteria adopted by the division, which did not directly refer to all possible types of network organizations. It seems, whereas all the previously mentioned observations on network organizations, that these key issues in this context may be worth considering: the question of high or low level of formalization of cooperation, which could impose binding rules of operation within a network system (an example of a high level of formalization in the network can be a franchising) [Inkpen and Tang 2005, s. 146-165]; the question of the existence horizon of the network, which is closely related to the purpose for which the network is functioning/ for a specific purpose on an single basis for the time-spatial context network will have limited time horizon [Walters and Buchanan 2001, 818-834]; the question of the nature of the entities participating in the network - the network itself can be created by companies with complementary resources, so they will complement the creation of value to the final consumer; can be created by competing organizations - in this case will be referred to co-opetition, ie the cooperation of the current market rivals directed against the other competitors [Le Tourneau 2004, 81-83] or of mixed - in this case, very often participants in the network are also public organizations and community groups (this is

characteristic of consortia R&D) or whether the network is created based on geographical proximity of various types of organizations and institutions (a characteristic of clusters) [Walters and Buchanan 2001, 818-834]; the question of the universality of the use of IT tools and solutions for telecommunications in the implementation of cooperation [Symon 2000, 389-414].

A major problem that appears in the figure, which cites reasons of forming the ontological dimension of interorganizational networks, is the issue of virtual organizations. They are characteristic of the network operating based on the use of IT tools on a high level in a relatively limited time horizon / for the realization of the purpose and with a relatively low level of formalization of this cooperation [Castells 2008, 177]. While this understanding of the virtual organization is built on two separate assumptions: first, the use of IT tools, secondly, a short-term business relation (strategic management perspective). It can be seen, that business practice is used in parallel with the two criteria distinguish these organizations. Nowadays it makes, in principle, a certain level and extent of virtuality is a feature that belongs to every organization and interorganization network.



The rationale for the possible distinction of virtual organizations

Figure. Epistemological and ontological perspective of interorganization networks

It can't be forgotten that a short-term nature of cooperation and using IT tools favor low formalize the relationship between organizations. Hence, in the case of virtual organizations highlight must be taken also into account precisely this aspect.

Conclusion

Diversity of interorganizational networks derives primarily from the multiplicity of the conditions for the highlighting. Those conditions also can be seen at a scale of severity. Furthermore, in the case of virtual organizations extract should take into account the specific group of these criteria, which may also be characteristic of other traditionally isolated in theory type of network.

It should also be remembered that the essential prerequisite for the type of network isolation is the kind of organizations forming. In this case this criterion may also to be critical in determining the type of network - eg in the case of cooperation of competitors, it's known as co-opetition, while the secondary will be then issue in description of the other conditions for differentiating that network. The same role in determining the type of network seems to play a premise. If it was about creating and sustaining competitive advantage collaboration will involve commercial organizations, if however, for example, these objectives will be related to attempts to develop universal standards of products for specific customer groups, the part of the network can be also the social groups and public institutions.

It should be emphasized that the network typology will always be distinguished basing on selected aspects characterized by cooperation between operators. A collection of interorganizational networks forms depends on the viewpoint of the author's typology, probably closely related to the area of his/her interest. That's why it does not cover all the really existing forms of inetrorganizational networks in the socio-economic environment .

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