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VALUE MANAGEMENT IN A NETWORKED ENVIRONMENT

Abstract

Development of digital technologies and virtualization of business have caused blurring of the boundaries between enterprises whereas processes implemented therein have merged them into supra-organizational systems wherein participation in value-added creation becomes a prevailing, and in fact the only link. Thus, business value creation management and virtualization thereof is an essential instrument to achieve competitive advantage, participate in broadly-understood business processes and creation or acquisition of values in business. The aim of the paper is to indicate areas of value adding and potential benefits from competition and cooperation among enterprises in cross-organisational networks, creation, capture and retention of value generated in networks, use of modern technologies and IT solutions in management.

Hypothesis: Support for network cooperation with modern information technologies increases the potential of generating value of cooperating enterprises. To verify the hypothesis, the method of problem analysis in the subject literature was used. The author's point of view in the study is that virtualization of value creation processes is directly associated with implementation of computer technologies into business, development of communication networks intended to improve relationships between people inside and outside the company, rapports with customers and building business architecture in cyberspace. Inter-organizational networks form a specific environment of competition and cooperation. It may be used for implementation of joint business projects, yet, the usage depends on the network structure, ease of access and safety. Partners and network participants wishing to cooperate in future have a variety of resources to offer, of which know-how and intellectual capital are currently the most valuable and desirable assets. Sharing the know-how

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is associated with using it in processes/products and generating added value. On the other hand, it also requires some actions necessary to protect intellectual property.

Keywords: value management, cross-organisational networks, rent, value added

Introduction

Creation of value added in a network is inextricably connected with the capture of generated value by the individual participants of the network. High quality of cooperation in a network, enabled by modern wireless technologies, makes it possible to increase the dynamics of value creation processes in a network and shapes enterprises' value management strategies in a networked environment. At present, mobile technology, along with cloud processing, Big Data and social media technologies, constitutes one of the four pillars of the third generation processing platform (Jenkins, Ford, Green, 2013). Enterprises are undergoing a change initiated by the use of mobile devices, which allow managers to access critical applications at any place and time. As a result, they are equipped with new tools and methods to beat competition and increase employees' effectiveness, which in practice has a strong impact on the degree of enterprises' participation in creation and capture of value added in a networked environment.

1. Competition and cooperation in cross-organisational networks

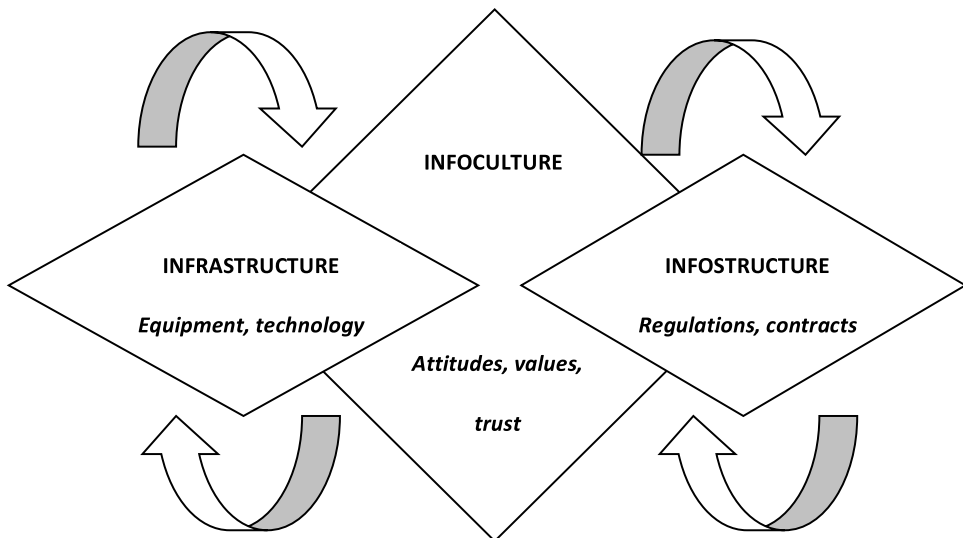
“The world as a whole has become a network, but nations, regions and local communities are equally a network. (...) Even the organisations that form the actors in a network are often networks themselves” (Bruijn, Heuvelhof, 2018).

In cross-organisational relationships, especially within the same sector, competitive behaviour was more widely observed and became more often the subject of research and analyses. In the globalised environment, competition is moved to ever new areas of confrontation and requires perfection in each of the links of customer value added chain. The requirements of the environment and customers can now be met through greater intensity of engagement in various forms of cooperation by formally independent business partners. The amount of the value created is a result of cooperation between value chains within an enterprise as well as cooperation with the envi-

ronment. Therefore, adaptation and cooperation processes are becoming important in value creation (Jędralska, Kosiń, 2007). With the dynamic growth of a networked economy, changes in the flow of information and capital, development of information and communication technologies and growing complexity of business relationships, the effectiveness and quality of the management of enterprises increasingly depends on their being embedded in a network environment (Chetty, Wilson, 2003).

Cross-organisational networks are difficult to define due to their variety. In most general terms, a network is interpreted as “a set of points in a structure of communication” (Brilman, 2002). According to Achrol (1997), the term network is used to refer to a wide range of phenomena such as national economic systems, industrial clusters, international corporations, as well as small manufacturing and services companies, professional networks, electronic systems of data transmission and informal social networks. According to Bressand and Distler (1995): “Network is a set of means (‘infrastructure’) and principles (‘infostructure’) that allow entities with access to them to engage in implementation of joint projects, provided that such means are suited to their needs and can be jointly used (‘infoculture’) by the network”. The above-mentioned areas of coordinating activities of enterprises who are partners in a network are presented in Figure 1.

Figure 1. Areas of coordination of the functioning of an organisation in a network



Source: Ziółkowska (2013), p. 40.

Identification and analysis of competition and cooperation within cross-organisational networks requires a more specific definition of the concept of network. We can speak of a network when at least two organisations operate, maintaining durable relationships with each other (Thorelli, 1986). It is accepted that there are two fundamental components of a network, i.e. network participants and relationships between the participants (Easton, Araujo, 1994). Czakon (2012) notes that value creation is essential in defining a network and names a range of synonymous terms such as value chain, value creation system, value constellation, value network, which when arranged in a chronological order show the evolution of how the architecture of value creation has been perceived as well as a growing importance of various relationships between participants of value creation processes.

2. Value creation in cooperating networks

Cooperation within a network is about balancing constantly arising contradictions both within the network structure as a whole and among the individual participants of the network, and about combining interrelation with autonomy, competition with cooperation. The existence of such opposing phenomena in a network results from the fact that there is a constant conflict among network participants related to the scope of cooperation and the amount of value captured by the individual participants of the network. Co-creation of value as part of cooperation gives rise to tensions connected with the division of generated value (Chesbrough, Vanhaverbake, West, 2008). MacDonald and Ryall (2004) think that in such a situation the competition determines the level of rent received by the individual partners.

There are special types of a relational rent when value creation processes are executed in network systems. It is generated when material and immaterial resources are exchanged among network participants and as a result of the development of cross-organisational resources. Lavie (2006) thinks that sharing of resources in a network is a source of appropriated rent as opposed to the rent received from own, shared and unshared resources, which is called internal rent. In the area of networks, one can also distinguish incoming rent, i.e. one that results from the resources shared by a partner, and outgoing rent, i.e. resulting from the transfer of benefits by the partner who initiated the transaction.

In cross-organisational networks, the source of managerial rent is managers, who may also be the main shareholders in the distribution of rent (Castanias, Helfat,

2001). A particularly interesting rent generated in cross-organisational networks is R. Penrose rent, which is received not so much as a result of possession of better resources but rather the ability to better use the full set of resources. Cross-organisational relations generate a relational rent, which relates to the phenomenon of synergy and whose meaning is connected with the idea of economic rent (in the sense of R. Penrose).

The factors impacting the scope of possibilities of the achievement of a relational rent by participants of a cross-organisational network include (Lavie, 2006).

- relative absorption capabilities that result from the ability to identify, use, acquire and create external knowledge thanks to the capability of organisational learning,
- relative scale and scope of resources,
- contractual arrangements,
- relative opportunistic behaviours,
- relative bargaining power.

Economic rent is often examined in the context of the search for it. The phenomenon of seeking a rent usually involves pursuing a policy of acquiring hard-to-obtain resources and managing them in a manner that will enable the capture of the rent generated as a result of artificially arranged business processes. Thus, to seek a rent is to seek unique resources and competences that will allow an enterprise to implement a strategy for value growth and generation of larger-than-average return rates. The literature has identified four approaches that an enterprise can take in that area depending on the strength of cooperative and competitive orientations. They can be described as follows:

- Search for a competitive rent is characteristic of enterprises with a strong competitive orientation and low level of cooperation. An enterprise seeks rent by obtaining and controlling resources that are hard to imitate and this is where it sees its competitive potential that ensures it competitive advantage as well as generation and capture of value added.
- Search for monopolistic rent indicates low levels of both competitiveness and cooperation, and the rent generated by an enterprise in such a situation is called monopolistic rent.
- Cooperative rent is sought when an enterprise shows a low level of competitiveness with strong cooperation orientation. Value is co-created and shared as a result of interrelation between partners that cooperate in execution of value creation processes. An enterprise does not aim to achieve competi-

tive advantage, but it seeks gains by creating a complementary bundle of resources and generating the so-called quasi-rent (Madhok, Tallman, 1998).

- Syncretic search for rent is a result of an enterprise's striving to maintain balance between cooperation- and competition-oriented strategies. Large flexibility of an enterprise in its cooperation with business partners in execution of value creation processes is connected with the use of a leverage effect of the use of rare and valuable resources in the competitive context.

3. Strategic conditions of value retention in a network

According to Najda-Janoszka (2010), the basis for cooperation in a network is more or less advanced systems of modular creation of value, which are made up of modules created by partners, i.e. network participants. Network modularity determines the degree to which a system can be divided into its components and re-combined to form a new network configuration (Schilling, 2000). It assumes that complex, comprehensive solutions can be jointly created within cooperative networks while preserving their multi-variant character (e.g. modification inside modules, reconfiguration of modules, replacement of modules). In a modular system, three basic areas of value creation are distinguished in a network: modularity of products, modularity of processes and modularity of task teams. Sanchez and Mahoney (1996) stress that the said modular system also involves knowledge, therefore we can see a different treatment of its components in terms of intellectual property. Differentiation of the statuses of knowledge modules is intentional and serves value retention. Thus, the process of knowledge creation in a network takes place in the context of the specificity of functioning and applied technological solutions of the individual components of a process as well as in the context of taking into account mutual interactions and possible configurations of the components, i.e. process/product architecture. By combining the idea of modularity with the process of organisational learning, four situations can be identified:

- Incremental process of learning at the level of components – learning through an incremental development of components leads to functionally limited improvements and moderate changes in component designing while maintaining the existing architecture of process/product.
- Level of learning at the architecture level – learning involves the ability to perceive new opportunities and market chances. It results in creation

of a new architecture of a process/product based on completely new configurations of the previously used components.

- Modular process of learning at the level of components – learning of new technologies of making components. It results in significant changes in functions fulfilled by the individual components while the existing architecture of process/product is preserved.
- Radical process of learning at the level of architecture and components – learning involves the ability to perceive new opportunities, market chances and new technologies of making components. It leads to significant changes in terms of both the types of used components and ways of configuring them in a new architecture of process/product (Sanchez, Mahoney, 2000).

Knowledge created in this way makes it possible to introduce autonomous innovations in one part of the system without significant changes in the other, which results in fast and simultaneous improvement of solutions created in cooperative networks. With no limitations to the introduction of innovations in the case of modular systems, they can be implemented by all network participants, i.e. innovator partners, resulting in greater ability to retain greater part of the value that was jointly created in the network.

Henkel and Baldwin (2009) proposed a solution to the issue of sharing knowledge in networks and protecting it at the same time as a key resource in the form of the concept of modularity in terms of intellectual property. According to this concept, the knowledge, and related intellectual property, possessed by a partner who is a participant of a modular system of value creation should be managed in accordance with the strategy of value retention. A network is a complex system, and functioning in it requires application of a mixed strategy in the area of intellectual property (Henkel, Baldwin, 2009). It enables differentiation of knowledge handling in terms of knowledge sharing and protection. Designing of modular systems in a network is based on a strong interrelation between the components, in which case they are placed within one module. Otherwise, when participants interact antagonistically with each other, they should be placed in different modules. Mixed strategy involves creation of compatible modules of intellectual property, i.e. those that have a homogeneous status with respect to protection of intellectual property rights and form the foundation for the modules of produced products and performed processes.

Conclusions

Enterprises that engage in cooperation in a networked environment see it as a possibility of creating a greater business potential and generating a greater value as part as cooperation systems. The value generated in a network should be distributed among the partners proportionally to their contributions. However, the practice shows that this is rarely the case. Thus, the issues connected with co-creation of value in a networked environment should be addressed along with the issues of effective retention of value.

Efficiency and effectiveness of the functioning of enterprises in a networked environment depends on the network architecture and the use of modern ICT solutions and tools. It is especially creation of wireless networks and provision of access to business applications from mobile devices that creates a range of possibilities of value adding and increasing security of the functioning in a network as well as improving the process of value retention.

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ZARZĄDZANIE WARTOŚCIĄ W ŚRODOWISKU SIECIOWYM

Streszczenie

Rozwój technologii informatycznych i wirtualizacja przedsiębiorstw przyczyniają się do zacierania granic pomiędzy przedsiębiorstwami, a realizowane w nich procesy łączą je w systemy ponadorganizacyjne, których nadrzędnym i jedynym spoiwem staje się partycypowanie w tworzeniu wartości dodanej. Dlatego tak ważnym instrumentem osiągnięcia przewagi konkurencyjnej, uczestniczenia w szerzej postrzeganych procesach biznesowych, tworzeniu i przejmowaniu wartości w biznesie jest zarządzanie procesami tworzenia wartości w przedsiębiorstwie i ich wirtualizacja. Celem artykułu jest wskazanie obszarów podnoszenia wartości i osiągnięcia potencjalnych korzyści wynikających z konkurencji i kooperacji przedsiębiorstw w sieciach międzyorganizacyjnych, tworzenia, przechwytywania i zatrzymywania wygenerowanej wartości w układach sieciowych, zastosowania nowoczesnych technologii i rozwiązań informatycznych w zarządzaniu.

Hipoteza: Wsparcie współpracy sieciowej nowoczesnymi technologiami informatycznymi zwiększa potencjał generowania wartości współdziałających przedsiębiorstw. Dla zweryfikowania hipotezy wykorzystano metodę analizy problemu w literaturze przedmiotu. W artykule autorka przyjęła stanowisko, że wirtualizacja procesów tworzenia wartości wiąże się bezpośrednio z wdrażaniem technologii informatycznych do działalności gospodarczej, tworzeniem sieci komunikacyjnych służących rozwojowi więzi międzyludzkich we-

wnątrz- i międzyorganizacyjnych, relacji z klientami, komponowaniu architektury biznesu w cyberprzestrzeni. Sieci międzyorganizacyjne tworzą specyficzne środowisko konkurencji i kooperacji. Możliwość ich wykorzystania dla realizacji wspólnych przedsięwzięć biznesowych jest zdeterminowana strukturą sieci, łatwością dostępu i bezpieczeństwem. Podejmując współpracę, partnerzy – uczestnicy sieci mają do zaoferowania różnorodne zasoby, z których najcenniejszymi i jednocześnie najbardziej pożądanymi są wiedza i kapitał intelektualny. Udostępnianie wiedzy wiąże się z możliwością wykorzystania jej w procesach lub produktach i wygenerowaniem wartości dodanej, lecz z drugiej strony wymaga podejmowania działań zapewniających ochronę własności intelektualnej.

Słowa kluczowe: zarządzanie wartością, sieci międzyorganizacyjne, renta, wartość dodana

Kod JEL: L21

Cytowanie

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