

INTER-SECTORAL AND SUB-SECTORAL IT BUSINESS ECOSYSTEM VS. SYSTEMIC RELATIONSHIPS PROFILE IN SELECTED CASES

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Abstract

The global, innovative firms have been using new tools to create relations based on value-changing, especially knowledge, because global customers are more exacting and they take decisions more knowingly. The systemic business ecosystems shows the possibility to gain synergy effects that are result of competencies' combination of systemic partners. It has been observed for example in IT sector. The entities of studied sector implement the goal in the so-called business eco-systems based on non-competitive relationships of companies and the identified systemic business ecosystems model in IT producers sector and distributors is precisely defined. The results have practical application due to the fact that the article contains practices of sectoral leaders. The social value is shown by finding innovative way of meeting customers' needs.

Keywords: systemic business ecosystem, systemic/net products, ecosystems model

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1. Introduction

Global, innovative firms have been using new tools to create relationships based on value exchange, especially knowledge, because global customers are more exacting and they take decisions more knowingly. The systemic business ecosystems show the possibility to gain synergy effects that are a result of combination of competencies of systemic partners. This has been observed for example in IT sector. **The purpose** of this article is to identify the structure and profile of business ecosystem as well as its dynamics, in selected IT leaders and their trade co-operators, in the area of IT systemic/net products.

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Material product (computer) satisfies customer needs only together with accompanying services (software as well as assembly and installation). This determines the features of *subsector systemic character* of the computer product. Systemic offer is implemented by the entity that also operates in computer sector subsectors: production/assembly, integration services, training, distribution, etc. or by several enterprises – participants in these subsectors that join together in network relationship². Complementary nature of teleinformation sector services that is definitely not mutually exclusive, results in the fact that integration, implementation or advisory contracts usually bring agreements of training, IT system maintenance or control of work and effects. Therefore the tendency of disappearance of submarkets of computer sector, and thus disappearance of independent production subsectors, integration services, software, training, etc., is observed. This is why we can speak about a specific **subsector business ecosystem**. It is supposed that such a pro-service trend of development of the sector will be predominant in the nearest future³.

The need of an individual and business customer in the sphere of integrated voice, image and data transmission, independently of the type of used networks and distance between subscribers, brought the necessity to offer convergent products and services that serve their provision. This is the demand of their competitiveness in integrated sector of landline and mobile telephony, computer equipment and network, as well as media, which definitely determines *intersector systemic character of IT products*. Convergent/systemic offer is provided on the basis of integrated teleinformation network that enables transmission of all types of electronic communication signals independently of their source, by means of interweaving technologies. A uniform teleinformation or information infrastructure is formed, the quality of which determines the competitiveness of economies and communities. Market dimension of *convergence* in IT sector is expressed by creation of offer packages by operators and service providers that constitute an integrated commercial product, the so-called IT network service. *Service convergence* concerns among others the use of services regardless of the access

² The companies “are placed in the networks of values because their products are usually embedded or hierarchically set – as components in other products and finally in end systems of use” (Marples, 1961; Alexander, 1964; Christensen, 2010).

³ Potential of ICT sector growth in Poland, in the perspective of 10 years. The Ministry of Economy Retrieved from <http://www.mg.gov.pl/node/20043> [accessed: 7.01.2014].

techniques. *Technical convergence*⁴ lies among others in application of uniform common technical solutions that serve implementation of functionally diversified services. And so we face the situation in which the limits between sectors of telecommunication, IT and electronic media disappear (Usługi konwergentne w środowisku heterogenicznym [Convergent services in heterogeneous environment], 2008; Konwergencja – przegląd usług konwergentnych w Europie I na świecie [Convergence – review of convergent services in Europe and in the world], 2006).

With respect to the above, economic entities unite, or have shares in enterprises operating so far in various sectors, or they separate new entities from their structures that are supposed to be engaged in a new type of activity. In this case it is *business convergence*, for the purpose of complementing the market offer of one-sector entities, which is also referred to as **intersector business ecosystem**.

2. Data and Methodology

The purpose of this article is to identify the structure and profile of business ecosystem and its dynamics, in the case of selected IT leaders and their co-operators, in the area of IT systemic/net products. As it is supposed, the identified systemic business ecosystems model in IT sector is dynamic, multi-sectoral and multi-core, a profile of cooperative knowledge communities diversified by studied groups of entities. A brief critical analysis of literature in the field of studied category is conducted in the article and qualitative method of empirical studies (case study) is applied for practical illustration of researched systemic relationship model. During the studies of the entities that form net business environment for creation of convergent systemic offer under the patronage of computer sector leaders, including HP, Intel, Microsoft, IBM and Apple, over 400 entities were identified that, according to studied leaders, were involved in direct network relationships. They are entities of various (narrow or broad) range of offer functioning within computer subsectors or telecommunication and / or media sectors, in the sphere of production, assembly and / or distribution. In-depth case study method was applied with reference to purposely selected group of enterprises representing the core of network relationship, the so-called extended core of network and entities of the circle of IT sector networks (table 1).

⁴ Some evolution of the notion of convergence in IT sector in technological dimension ought to be indicated. Convergence of technology in IT sector was mainly identified with communication technologies and diffusion of services of landline and mobile networks. Currently increasingly more often this notion is used with reference to stricte network solutions, associated with Ethernet, mass memories, Fibre Channel protocols (including FC over Ethernet) or iSCSI. In other words it is integration of servers, mass memories, network solutions and management systems (“Konwergencja w sieciach komputerowych” [“Convergence in computer networks”], 2015).

Table 1. Basic information about performed research

Specification	Characteristics of performed study
Research technique	analysis of Internet pages, analysis of sponsored interviews in IT journals
Sample selection	purposeful selection
Sample size	5 promoters of network relationship
	9 entities of extended network core
	9 entities of network circle
	11 entities of distribution sphere
Criteria of selection of sample group	purposeful selection by indications of promoters and / or position in the ranking of companies by turnover
Spatial range of research	Poland
Time range of research	2000-2014

3. Profile of cooperative network relationships on the example of IT business ecosystem

According to the concept of network marketing, intersector enterprises of IT business ecosystem are defined through relationships with the entities of the sectors of telephony, media ad IT sub-sectors, and also with consumers and all other cooperating parties, including trade entities. The network partners are defined by their relationships with other enterprises and their role in these relationships (Żabiński, 2007), established for creation of *convergent products*.

IT business ecosystem identified during research is based on knowledge-based relationships that are established between all network participants. At the same time, qualitative and quantitative dynamics of the structure is observed that was characterised by stable number of coordinating centres and lack of circulation of competences in this sphere, and growing number of entities in the network. In the last period of the studies, dual character of the structure appeared. It was a result of relationships of the network entities with Apple Company that stayed isolated before. Relationships in the studied structure are based on the synergy of chains of values and complementary character of resources of network participants.

The entities of the core of studied chain definitely and explicitly apply qualified certification system in cooperative knowledge-based relationships. Open access to communities and resources of network knowledge let some entities of extended core of studied network and almost all entities of the network circle in. In the case of studied entities characteristics of asymmetrical bureaucratic networks and in the case of network circle – asymmetrical social network were diagnosed. The group of business partners, including distributors in the case of

entities of extended network core constitute the recipients of actions stimulating knowledge-based relationships mostly of technological knowledge-based and financial character. For the group of network leaders, they are entities diversified by products or areas of cooperation. The entities of network circle, including distributors, are focused on technological knowledge in network relationships.

Activities aiming at establishment of knowledge-based relationships are most often an individual initiative of studied entities according to their declarations. Some of the entities in the network circle take advantage of experiences of the network Promoters in this sphere⁵.

4. Effects of knowledge diffusion and inter-processing in relationships of IT product sector entities and trade sector partners

Activities in the sphere of knowledge diffusion between promoters and other knowledge network entities in the sector of IT products and their partners (distributors) that are the expression of realisation of one of the subsystems of holistic MKM (Marketing Knowledge Management) model are one of the reactions to the will to face demands of increasingly demanding target customer. This customer very frequently expects business and technical consultancy and thereby specialist knowledge. This is the reason for growing significance of the so-called VARs (Value Added Reseller)⁶ and VADs (Value Added Distribution) in IT market that eagerly make use of knowledge-based relationships, its promoters or entities of extended network core. Together with development of IT sector, it turned out that only larger or specialised enterprises, the turnover of which with a particular producer was so high that the income covered the costs of maintenance of technical teams, can afford to maintain highly-qualified staff. This is why there occurred the need to have a partner that could provide resellers with technical knowledge and resources for the purpose of common implementation of projects that a particular reseller could not implement independently due to the lack of resources and lack of knowledge. *From the point of view of resellers the benefit consists in the fact that they can serve the customer in a complex way while not bearing the long-term costs related to appropriate staff because it is what is provided by the enterprise of VAD type. VAD is a distributor creating the market in the sphere of appliances and solutions they sell. VAD is an active support for sale together with*

⁵ More on this subject in publications of the author: Sztangret, Bilińska-Reformat, 2015; Sztangret, Bilińska-Reformat, 2014.

⁶ VAR status is obtained by companies that guarantee the producer appropriate turnover and good implementation references at their minimal involvement through close cooperation with usually one producer, high technological competences and involvement in a particular sphere (Smoktunowicz, 2014).

partners through sharing knowledge, creation of solutions or after-sales service. VAD type company offers pre-sales support, assistance in preparation of appropriate offer documentation, participation in implementation and specialised technical training. Besides, as a distributor of frequently several product lines, they are often an initiator and author of many conferences and technical workshops to which both the partners and their customers are invited. The aim of this is to educate the market in the sphere of the latest IT solutions. Producers also benefit from cooperation with VAD, particularly if they do not have expanded structure because most of the tasks concerning training, pre-sales support and implementation is performed just by VAD. At the same time, value-added distributor contributes in this way to significant expansions of sales channel of resellers who, while having close relationships with customers, can implement jointly with VADs practically any information technology projects.

VAD distributors work in development and education of entities of the sales channel, technical support, marketing and generation of new project. Financing and logistics is a standard in distribution. They transfer knowledge to reseller channel and enhance competences and offer complex solutions that are looked for by end-users. Therefore VAD offers include trainings, consultancy, technical knowledge sharing, and assistance in configuring, providing demo equipment that is used by the reseller both to present the solution to the end-user and to get knowledge about the equipment capabilities. They also include technical pre, and after-sales assistance. VAD company must have the whole range of products and services intended for sales channels they serve, including specialist shops, commercial chains and telecommunication operators, among others (Smoktunowicz, 2014).

According to managers of IT companies these are the years after which activities favouring value added in the form of specialist knowledge and consultancy as well as active participation and/or development of competence centres were intensified. It is noticed that the very strict but deep specialisation can be the strength of smaller distributors, which is illustrated by dynamics of incomes in relatively young companies in recent years. The value of knowledge is also noticed by the so-called distributors-broadliners⁷, who expand the portfolio of services for integrators and develop demo equipment resources. The significance of value added in the form

⁷ Activity of typical broadliners assumes the necessity of formation of demand in the market by the producers themselves. This results from adopted business model that assumes ensuring of only financing and logistics support, and this is why, investments in creation of logistic centres occur. In this case, producers have to form their own expensive resources.

of knowledge by distributors finds its expression in investments in training centres in researched enterprises⁸.

5. Conclusion

Systemic character of computer product demands inter- and sub-sector cooperation from its suppliers to create such a bundle of profits that will satisfy the target customer. The entities of studied sector implement the goal in the so-called business eco-systems based on non-competitive relationships of companies. Such business ecosystems that constitute the network of complementary chains of values resulting from partners' knowledge representing subsectors of computer sectors as well as telephony and media, and also distributors, are actually structures of three various groups of entities with respect to implemented model of cooperation knowledge-based relationships. Efficiency of such network knowledge-based relationships is illustrated by results achieved by entities of VAD and VAR type, especially in Polish market.

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