

KNOWLEDGE MANAGEMENT MODEL IN BtoB RELATIONS – HOLISTIC APPROACH (ON THE EXAMPLE OF IT PRODUCTS AND TRADE SECTOR)

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ABSTRACT

Knowledge is the key element of management process in an organisation. Knowledge transfer, as an element of knowledge management, is determined by skills and competences of participating entities inside the organisation and its competitors (cooperating parties and competitors). Competences are a complex set of skills as well as team learning and experiencing in business processes. It is a unique combination of tangible and intangible resources, relying on knowledge and determining the size of attained goals through involvement of clusters of these resources. Company competences are compared to the process of generation of knowledge about customers, cooperants and competitors, as well as integration of such knowledge with technology. We can speak about synergy effect resulting from combining knowledge, competences and skills and also ways of thinking of various entities, organisations and people that apply IT solutions. They favour effective **knowledge management** that is a condition of competitiveness in difficult economic reality.

SECI **model** by Ikujiro Nonaka and commented upon by such authors as H. Takeuchi, M. Alavi, D.E. Leidner, and also by M. Hayes, G. Walsham, Kimble as well as G. von Krogh, is extensively described in literature. Procedural approach to knowledge management is presented for example by D.J. Skyrme, M. Sarvary, W.R. Bukowitz and R.L. Willson. Resource approach to knowledge is based on the concept presented by D. Leonard-Barton. It is known as the model of „knowledge sources”. **The goal** of this paper is to identify existing views on holistic / integral models of knowledge management and to construct such a model on the basis of studies in the literature and analysis of knowledge-based relations observed on the level of cooperation between IT sector entities and their partners in the sphere of trade.

Critical analysis of the literature of the subject and profound case analysis are the **methods** applied to attain the goal. The application of the case study method seems to be justified because of the fact that: 1/ the studies concern contemporary, dynamic phenomena and knowledge about the phenomena that is being created; 2/ they concern the study of a real context of these phenomena at quite significant ambiguity of borders between their contexts and the very phenomena, and 3/ the subject of the study is too complicated to explain the cause-and-effect relationships by means of the method of survey or experiment. Leaders of IT sector on Polish and worldwide market, including IBM, Microsoft, Intel and their commercial partners, Value Added Distributors and Value Added Resellers, are the entities in the research. In the period between 2000 and 2013 the authors regularly analysed the content of Internet webpages of selected entities and authorised press / sponsored interviews presented in trade and IT magazines, including Computerworld, IT-manager and CIO.

As it is shown by **research results**, in holistic model of knowledge management and in BtoB relations of the entities in IT and trade sector, the observed qualified system of knowledge

emission and absorption, as well as knowledge creation through cooperation and networking of the process of knowledge management in studied companies is particularly important.

Key words: knowledge management, holistic model of knowledge management, KM strategies.

1. INTRODUCTION. KNOWLEDGE MANAGEMENT – IDENTIFICATION OF RESEARCH CATEGORY

Knowledge management¹ as a scientific discipline occurred in the early 1990s. KM concept has been discussed by such academics as Ikujiro Nonaka (Hitotsubashi University), Hirotaka Takeuchi (Hitotsubashi University), Thomas H. Davenport (Babson College), Baruch Lev (New York University).

The first collections of case studies that emphasised the importance of knowledge management in dimensions of its strategies, processes and measurement are by Morey, Maybury and Thurasingham of 2002 (Morey *et al.*, 2002). Earlier, in 1999 the notion of personal knowledge management² had been introduced. It referred to knowledge management on individual level (Wright, 2005; Grundspenkins, 2007; Smedley, 2009; Pollard, 2008). Knowledge management is defined by Beckman, through the prism of decision-making approach, process approach (Cross, 1998; Blake, 1998; Perechuda, 2005), process and system approach (Malhorta, 1998; O’Sullivan, 2007) and holistic approach (Bounfour, 2003; Quintus, 1997).

Most of these definitions include several aspects of knowledge management, such as creating the environment for knowledge formation, using the knowledge and creating knowledge for decision-making, or they treat knowledge as a set of organizational and operational rules. In general, most authors of the definitions assume that knowledge management enables an organization to gain, store, transfer and apply knowledge inside and outside the organization. Many authors point at benefits of application of knowledge management in an organization (table 1).

Table 1. Benefits of knowledge management in an organisation

Author / year	benefit
Singh and others (2006), Dalkir (2005), Chase (1997), Pollard (2005), A. Błaszczuk and others (2004)	Possibility to make the best decisions.

¹ The milestones in development of knowledge management include: announcing by Chaparrel Steel in 1975 that its strategy and structure will be based on knowledge management and publishing by Skandia company the annual report in 1991 annexed with the so-called Navigator – the report on the value of intellectual capital. In 1993 in Boston there was the first conference on the subject of knowledge management. Others see the beginning of the concept of knowledge management in the 1987, when in the USA they organised the conference entitled „Managing the Knowledge Assets into 21st Century” and in Sweden the so-called Konrad Group was started. It was engaged in intellectual capital management. Consultancy companies were one of the first that noticed the need to distinguish a new level of management. For them knowledge was a product by itself. Repositories including experience and knowledge of their consultants, for example KnowledgeCurve (PricewaterhouseCoopers), Kworld (KPMG), Knowledge Xchange (Andersen), Knowledge Direct and others started to be created.

² Personal knowledge management (PKM) is a group of processes that include classification, storing, searching for and getting knowledge with participation of individuals, in their everyday activities and ways in which these processes support their activity. It is a bottom-up approach to knowledge management that emphasises the importance of people in the process of growth, development and learning as opposed to the KM top-down concept.

Singh and others (2006), Dalkir (2005)	Facilitating cooperation
Dalkir (2005)	Support in knowledge acquisition
Chase (1997), A. Błaszczuk and others (2004)	Improves communication
Dalkir (2005), Chase (1997)	Supports skills of the workers
Dalkir (2005)	Increases workers' satisfaction
Davenport (1998), Singh and others (2006), Dalkir (2005), Chase (1997), A. Błaszczuk and others (2004)	Transfers best practices
Chase (1997)	Creates new or better work method
Beijerse (1999)	Favours organisation continuation
Anantatmula and Kanungo (2006), Beijerse (1999)	Improves employees' loyalty
Singh and others (2006), Anantatmulai Kanungo (2006), Chase (1997)	Improves productivity and effectiveness
Anantatmula, Kanungo (2006), Pollard (2005)	Increase in activity of human capital
Singh and others (2006), Anantatmula, Kanungo (2006), Chase (1997)	Increase in sale / profit
Anantatmula, Kanungo (2006)	Development of new business possibilities
Beijerse (1999), Pollard (2005), A. Błaszczuk and others (2004)	Improvement of key competences
Singh and others (2006), Chase (1997)	Increase in flexibility of activity
Anantatmula, Kanungo (2006)	Improvement in business processes
Singh and others (2006), Dalkir (2005), Chase (1997)	Growth of responsibility
Beijerse(1999)	Risk reduction
Dalkir (2005)	Improvement in relations with customers
Chase (1997), Dalkir (2005), A. Błaszczuk and others (2004)	Improvement in quality of products and services
Dalkir (2005), Pollard (2005), A. Błaszczuk and others (2004)	Increase in customer satisfaction
Demarest (1997), Pollard (2005)	Reinforcement in intellectual capital management
Davenport (1998), Singh and others (2006), Dalkir (2005), Chase (1997)	Increase in dynamics of innovativeness

Source of the figure: Anantatmula, V., Kanungo, S., (2006), pp.25-42; Chase, R. L., (1997), pp.38-49; Dalkir, K., (2005); Davenport, T., DeLong, D., Beers, M., (1998), pp.43-57; Singh, M. D., Shankar, R., Narain, R., Kumar, A., (2006), pp.110-118; Beijerse, R.P.U., (1999), pp.94-109; Demarest, M., (1997), pp.374-84; Pollard, D., (2005), p. 56; Błaszczuk, A., Brdulak, J.J., Guzik, M., Pawluczuk, A., (2004)

As it is shown in table 1, according to many authors, the scope of benefits resulting from applying knowledge management in an organisation is really broad and undisputed. Thus the problems of knowledge management, which is the synergy effect resulting from combination of knowledge, competences and skills as well as ways of thinking of various entities, organisations and people that apply IT solutions, particularly in BtoB relations, the entities of technologically engaged sector of IT sector and their commercial partners in hard economic reality seem particularly interesting.

In the literature of the subject, **SECI Model** by Ikujiro Nonaka is extensively described and commented upon by other authors such as, among others: H. Takeuchi, M. Alavi, D.E. Leidner, and also M. Hayes, G. Walsham, Kimble, and G. von Krogh. Further, process-based approach to knowledge management is presented for example by D.J. Skyrme, M. Sarvary, W. R. Bukowitz and R.L. Willson. Resource-based approach to knowledge is primarily founded on the concept presented by D. Leonard-Barton, known as the model of "knowledge sources". In the literature, relatively less attention is focused on the views on the subject of holistic / integral model of knowledge management and the structure of such a model. Literature studies and many years' research of IT and trade sector entities performed by the

authors suggest application of such models at least in some extent. The paper undertakes the problems of knowledge management through the prism of marketing concept including network marketing that is in relations with customers and cooperants, while particularly focusing on the last group.

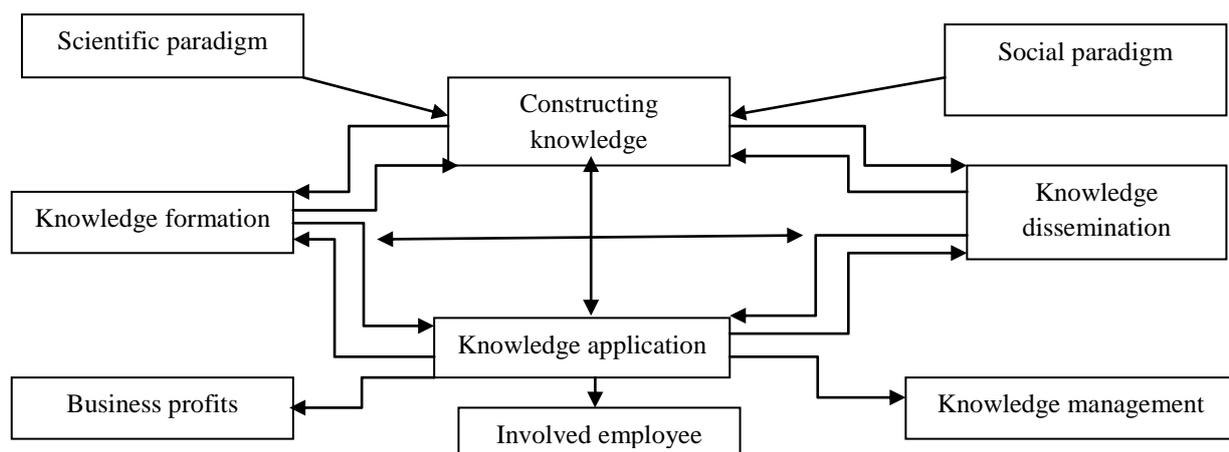
In the paper the case study **method** that refers to knowledge management-based BtoB relations of IT and trade sector entities is applied. The article analyses the case studies described in secondary sources published in specialist periodicals and reports (“Computerworld”, “IT-manager”, ”CIO”) between the years 2000 and 2013. Critical analysis of opinions of managers of IT sector (that is IBM, Microsoft, Intel and their commercial partners) presented in sponsored press articles³ that were significant suppliers of IT solutions according to rankings in specialist magazines, was performed. Additionally, the content of Internet webpages of selected entities was regularly analysed.

2. HOLISTIC / INTEGRAL MODEL OF KNOWLEDGE MANAGEMENT

According to one of the first approaches to knowledge management in a holistic way, by Alavi and Leidner, in organizational terms, it is defined as a systematic and specific process of acquiring, organizing and communicating explicit and tacit knowledge of employees, for the purpose of improvement in efficiency and productivity of other involved entities. However, the presence of „other entities” of the surroundings is mentioned quite succinctly (Alavi and Leidner, 2009). KM was approached a little more broadly by Bounfour while treating KM as a group of procedures, infrastructure, technical and managerial tools created for the purpose of creating, sharing and enlarging knowledge resources inside and outside organisation (Bounfour, 2003).

Undoubtedly holistic / integral approach to knowledge management is presented by **Demerest’s model** (figure 1).

Figure 1. Modified Model of Knowledge Management by Demerest



Source of figure: McAdam, McCreedy, (1999), pp. 91-101

³ Because of the degree of complexity and innovative character of the research problem that is being solved, research methods that are not classified in scientific sources are applied; however they are the ones of few that can be applied on this stage, in the situation of unwillingness of selected respondents to be interviewed and their suggestions to refer to authorised press statements.

The structure of this model shows not only scientific understanding of knowledge but also social aspects of knowledge construction. It is not limited to the stage of revealing knowledge but concerns repeated social interactions. Knowledge management ought to be supported by all organisation stakeholders which, in turn, should find reflection in company outcomes. This is about complementary approach to knowledge management as scientific and social category.

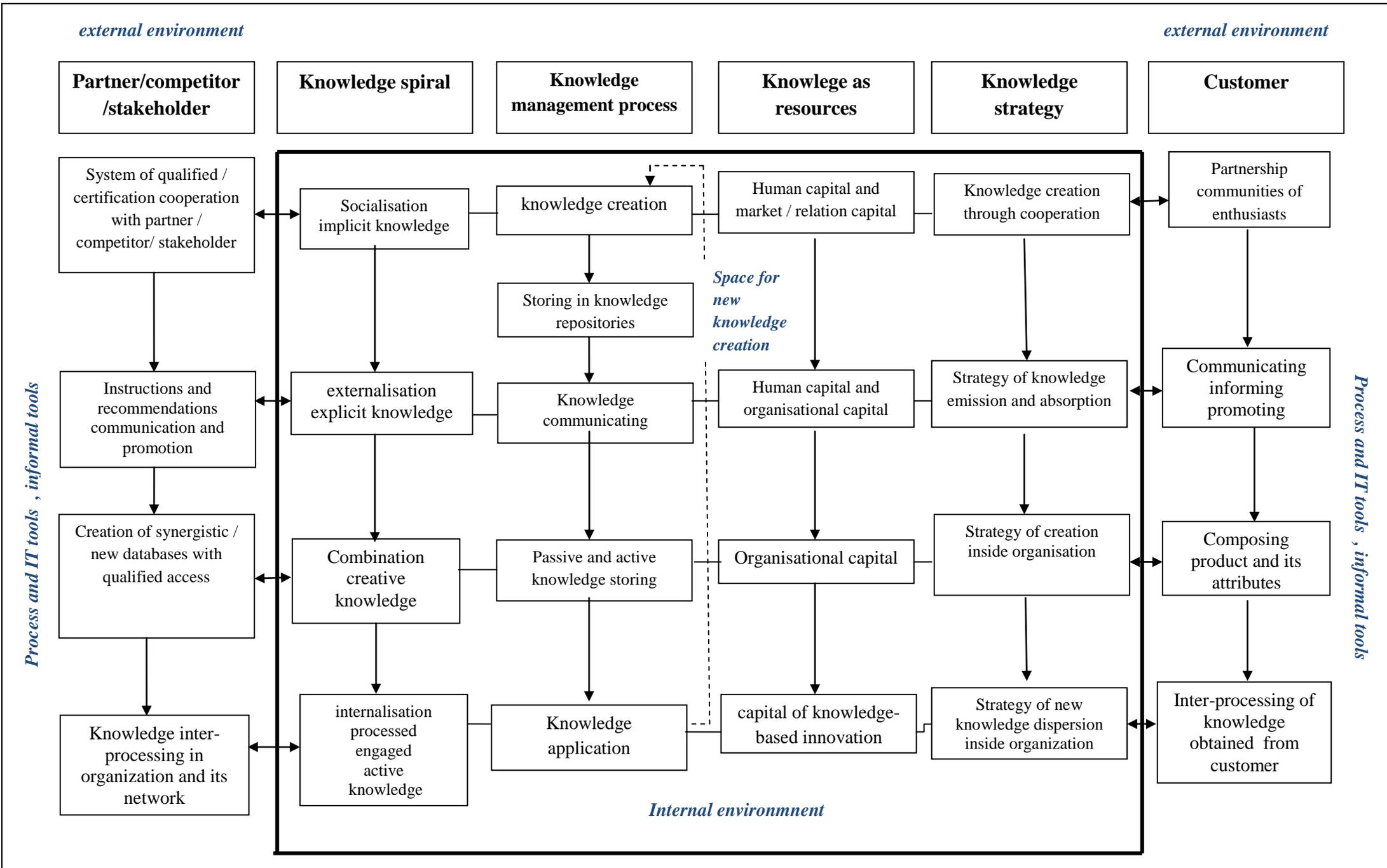
Holistic approach to knowledge management (**SET KM Model**) is based on three pillars: (1) company strategy, that is, a strategic organisational concept of knowledge and learning, (2) environment of knowledge creation, co-sharing and using, that are dependent on the company and objective determinants, (3) tools of knowledge that favour the processes of effective knowledge management in the company (Choo, 1998; Nonaka and Konno, 1998; Von Krogh *et al.* 2000; Alvarenga Neto 2008).

According to Choo's views the company functioning on the basis of knowledge is the one that approaches knowledge in strategic dimension (1), through the prism of its meaning in a particular context of decision forming and making. The strategic goal of the company is the awareness of meaning of knowledge in defined dynamic and complex environment of the enterprise functioning, ability to search for and interpret adequate information enabling to understand the trends and scenarios of the environment composed of customers, cooperants, competitors and other stakeholders. Knowledge formation is a process of constructing and / or acquiring knowledge, organising and processing information for the purpose of generation of new knowledge through dispersion and learning of the organisation. New, generated knowledge constitutes foundations for assumptions of new knowledge creation and thus development of new skills and company competences and also other participants in the so-called community of knowledge.

According to Choo decision making process is driven by search for alternatives that are at least satisfactory from the point of view of a particular enterprise in specific circumstances, while selection of one solution implies the abandonment of the others, and so the compromise and / or the cost of possibly lost opportunities resulting from other solutions. Fully rational decision would require excellent competences of organizations in the sphere of gaining information as well as knowledge acquisition and involvement. On the other hand, Pfeffer and Sutton (Pfeffer and Sutton, 2000), believe that it is not enough to know what to do, but how to act in practice. Therefore, knowledge management is located in the area of tactical operations of the company, combining the preferences of management with the realities of operational level.

Nonaka and Konno are authors of the knowledge creation environment concept and its later promoters are Nonaka, Tsoukas and Snowden (Nonaka and Konno, 1998; Tsoukas, 2005; Snowden, 2003). Knowledge environment is a context in which knowledge is created and applied (figure 2).

Figure 2. Holistic model of knowledge management



Source of the figure: own case study

This environment may have a physical character (that is the office space, organisational units in the company), and / or virtual (that is e-mail, video-conferencing), and / or mental (that is expressed by ideas and thoughts). Knowledge environment can be created by individuals, assignment groups, project teams and informal groups of stakeholders. Knowledge environment is composed of sub-sphere of creation, interaction and dialogue, systematisation and making processes which corresponds to each element of SECI Model by Nonaka and Takeuchi. This concept of knowledge environment should be expanded by the elements inside the organisation that are conducive to creativity, including trust, tolerance and care. According to Alvarenga Neto (Alvarenga Neto and Choo, 2010) "favourable conditions" are necessary on the tactical level, as an element connecting strategic dimension of knowledge management with its operational implementation. In this context, knowledge management should not mean controlling it, but promoting its creation and sharing in the space of knowledge-based organization. Nonaka and Takeuchi as well as Von Krogh also mention other elements that shape the knowledge context: creative chaos, redundancies, structures, organisational culture and people's behaviour, leadership and the vision of the future. Alvarenga Neto and Choo conducted systematisation of factors that constitute knowledge context while distinguishing four groups: social and behavioural, cognitive, informational as well as business and management that are differently configured in various stages of processes of knowledge creation, transfer and application in internal company environment.

IT tools and practices as well as processes serving implementation of the concept into real action are the third sphere of holistic knowledge management model (3). They differ depending on the level of realisation of knowledge management. Strategic level is focused on formation of knowledge community, space for organisational learning and tools of strategic concept of knowledge creation. Operational level concerns rather coordination in execution of tasks resulting from strategic concept of knowledge management, application of competitive competences and market research.

3. NETWORK OF VALUES AND HOLISTIC MODEL OF KNOWLEDGE MANAGEMENT, MARKETING APPROACH

Development of information technology brought the opportunity of non-competitive relations between enterprises for the purpose of creation of value for the customer, which is referred to the model of value net by C. Parolini (Parolini, 1999). Such a tendency finds its reflection in the concept of network marketing⁴, dedicated to search for, create and provide synergistic value for the purpose of continuous renewal of markets. This is favoured by communicating with customers (physical and technical dissemination of knowledge to them and its acquisition) that lies within the scope of realisation / fundamental operations of the value network, within the framework of operational marketing activities and sale. Concept element of customer and partner knowledge management in strategic dimension results from company personality and is located in the sphere of actions supporting the value chain, finding its expression in management of internal human resources (personnel) and external (customer/partner) and relations between them. The value for customer that is a bundle of profits and costs perceived by customers in the process of purchasing and using the products and / or

⁴ The concept occurred in connection with the attribute of contemporary economy in the form of the so-called system products. Their value for customer is determined by the fact that they function in a particular, extended system of products and services and the networks of their users. System products provide customers with profits on condition of existence and effective functioning of the whole system of products and services and those who use them (Żabinski, 2012; Szymura-Tyc, 2005).

services can be bigger if the relations in the chain / network of values, which are knowledge-based, between an enterprise, partners in the network⁵ and the customer (according to the concept of network marketing) are more efficient⁶. Skilful use of the concept of chain and / or value network completed with the concept of marketing knowledge management is a way to provide desired value to stakeholders. This process gains effectiveness while being implemented on the market approached as the forum of knowledge and competences exchange⁷ between network partners (figure 3).

Figure 3. Formation of knowledge-based value in marketing approach

Defining the values	Shaping the values	Communicating the values	Offering the values
Acquiring knowledge about current and prospective customers' needs, resources and competences of the company as well as of network partners and other stakeholders	Knowledge transfer between network partners for the purpose of optimisation of relations between the bundles of profits expected by customer and acceptable cost.	Creation of forum for exchange of knowledge between the enterprise (network of cooperants) and customer	Flow of knowledge between the enterprise and entities in the processes of physical distribution and feedback from customer

Source of the figure: own case study on the basis of: Szymura-Tyc, M. (2005), p.91.

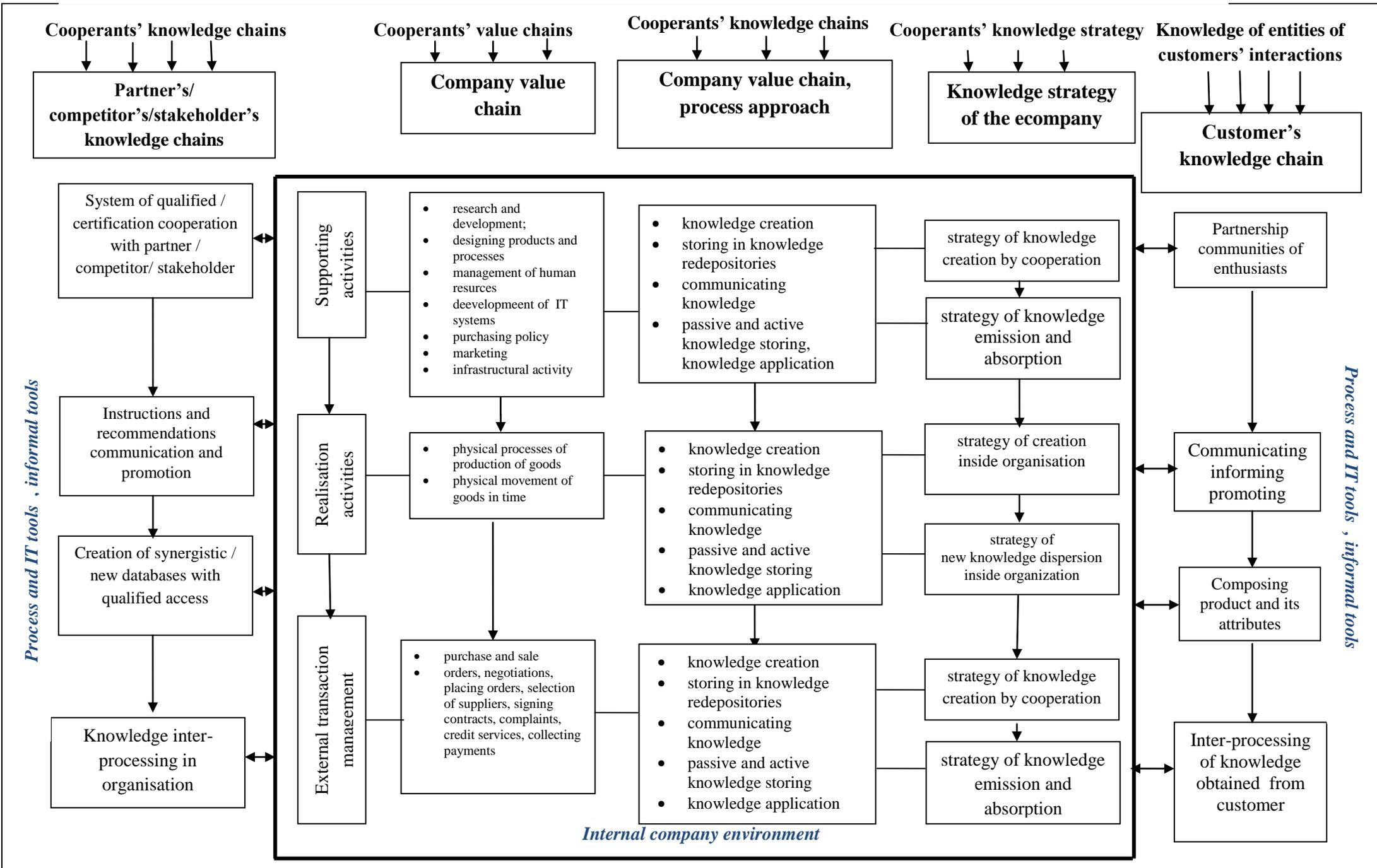
Because of strategic importance of value networks of companies that build value for customer, they are called strategic networks (Jarillo, 1998; Buchel, 2010; Gulati *et al.* 2000) (figure 4).

⁵ Chain enterprise is a group of independent, in legal sense, economic entities that implement various ventures and projects coordinated by the company – integrator / Promoter that has distinguishing competences. Major features of chain enterprises include: voluntary character of joining the network, parallel realisation of various economic projects and ventures, compatibility of competences of the company – integrator and other cooperants, occurrence of islands of tacit knowledge, shorter and shorter life cycle of products and services, permeation with other chains, application of computer networks in the processes of communication and a large potential of organisational learning. Motivational determinants for joining the network should include: globalisation of business activity, atomisation of economic, social, political and cultural life, virtualisation of business activity, specialisation that allows for sale in the network of key competences, easier access to information, faster diffusion of explicit knowledge, possibility and necessity of knowledge sharing in the network, the chance to use a part of silent knowledge of the company-integrator, growth in the power of influence and security of functioning. (Perechuda, 2005)

⁶ The grounds for such an approach are found in Porter's model of values system. The system of values includes chains of values of all participants in chain relations and thus each of the participants influences the value obtained by direct buyer and indirectly also influences the value obtained by final customer. It also results from this model that value for customers also occurs in the process of use of the purchased product or service by final customer. Cooperation between entities that form the system of values favours formation of competitive advantage of the whole system. (Porter, 1995)

⁷ In the market perceived as a forum, the company / cooperant and consumer get close and mutual „temporary roles” cannot be predicted. Supply and demand are short-lived phenomena and have a context character. Supply is associated with facilitation at request of an exceptional consumer's experience. The value is created in various places of partners' interactions. Co-creation experience is the basis for value. Consumers and consumer communities can also start a dialogue with each other. Consumer selects the key company and the environment of experience in which they will perform interactions and co-create the value. The key company, its products, employees, business partners and consumer communities efficiently get together, creating the environment of experiences in which particular individuals co-create their own experiences. Consumers can gain surplus from companies. The value is jointly acquired. Consumers expect a clear vision of experience in their own language. As a result, trust can occur. Consumers are competitors in values acquisition. (Prahalad and Ramaswamy, 2005).

Figure 4. Value network ad holistic model of knowledge management, marketing approach



Source of the figure: own case study

According to Parolini's concept (Parolini, 1999) the network of companies, while building its own and network competitive position, is focused on creation of adequate configuration of relations, actions and flows for the purpose of creation of value desired by the customer (Kwiecień, 2007). Particular operations are perceived as distinguished processes activated by entities involved in the network for the purpose of creation of value. Knowledge management, including marketing knowledge, is such a separated process of network companies. Knowledge network⁸ is a resultant of knowledge chains (Carlucci *et al.* 2004; Lee and Yang, 2000), the management of which can be defined as an attempt at optimisation of knowledge flow in chain business processes through reducing the time of access to appropriate source of knowledge which means providing necessary knowledge to the place where it is required at adequate time and amount.

Knowledge management, including marketing knowledge, is composed of processes that facilitate acquisition, application and development of this knowledge for the purpose of creation of network value and / or its growth, and formation of competitive advantage (Haanes and Lowendhal, 1997; Marr and Schiuma, 2001). According to the definition of marketing knowledge as customer's and cooperant's knowledge, and knowledge from customer and cooperant, the process of knowledge management occurs in all three stages of value creation by chain enterprises, that is in the stages of: realisation activities, support activities and external transaction management.

4. WAY OF REALISATION OF HOLISTIC MODEL OF KNOWLEDGE MANAGEMENT IN RELATIONS WITH COOPERANT AS SHOWN BY SELECTED EXAMPLES

Contemporary economic reality demands efficient creation of relations with partners for the benefit of creation of multi-values expected by the customer. It is a value that is a result of synergistic effect of cooperation of entities to the benefit of satisfying more and more demanding, but also aware, customer. For this purpose a specific type of business knowledge communities are established. They most often form a system of qualified cooperation with certified access to determined resources of cooperating entities. The disposer of key values, in this case knowledge resources, usually performs the function of relation regulator, defining bundles of competences that a cooperant should have at their disposal. Such relations are of asymmetrical character. Relations can also take symmetrical form at the lack of superiority from any partner. However this relation rarely occurs in BtoB relations model based on knowledge diffusion between the entities of the sectors of IT products and trade.

Explicit „knowledge commanders” (or in other words Promoters of relations) in certification knowledge-based relations with entities of distribution and trade in IT products include IBM, Microsoft and Intel. The companies selected for the study perform a significant role on Polish and worldwide market (table 2).

Table 2. The biggest IT firms on Polish market in 2012/2013 (by revenues from sales of products and services)

Location in the ranking	Company	revenues from sales of products and services in 2012	Dynamics 2012/2013
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⁸ CKB (collaborative knowledge building) concept, defined as a group of entities established for cooperation in the sphere of knowledge creation and application, constitutes the foundations for the concept of knowledge network. This concept was introduced by Scardamalia and Bereiter in 1994 (Scardamalia and Bereiter, 2004) and continued by Paavola, Lipponen and Hakkarainen (Paavola *et al.* 2002).

2012	2013			
7	6	IBM Poland	1323700000 PLZ/330925000 Euro	16%
...				
9	11	Microsoft	1300000000 PLZ//325000000 Euro	3%
...				
19	...	Intel Technology Poland	590000000 PLZ/147500000 Euro	-

Source of the figure: The biggest IT firms in Poland in 2012, 2013, Computerworld 2013, 2014

4.1. Competence centres as the subjects of IT knowledge diffusion

While creating a specific type of knowledge communities all over the world, competence centres of studied companies – knowledge promoters, provide competence and hardware support for Commercial Partners but also for customers. They significantly facilitate the processes associated with porting, testing and also integration of applications created in response to market needs. The centres ensure professional assistance on every stage of development and lifecycle of application, while enabling remote or local access to the latest technologies, software tools and safe IT laboratories. Additionally, experts run technical workshops and seminars in the sphere of new IT products for business partners (table 3).

Table 3. Competence centres and communities of IBM, Microsoft and Intel firms

IBM Innovation Centre (IIC)	Microsoft Partner Membership Centre	Intel IT Centre
43 global centres	Community forms: Partner Network Support, Partner Support Community, Microsoft Community Connections, Microsoft Partner Network, International Association of Microsoft Certified Partners (IAMCP), Worldwide Partner Conference (WPC), Microsoft US Partner Team blog, Microsoft Academy	Intel Support Community, IT Peer Network, Maker Community Intel blogs
29 centres in regions		
147 specialist communities e.g. IBM PureData-Enzee Community, IBM PartnerWorld Community, Industry Solutions Business Partner Community, IBM Security Community, IBM Asset and Facilities Management Community, IBM Cloud Computing community, IBM Software Community, The Worldwide IBM InfoSphere Community, IBM Service Management community, The Worldwide IBM ECM Community, ICS Business Partner Community, Middle East and North Africa Business Partner Community, IBM Solutions for Smart Business, Nordic IBM Managed Service Providers Community, IBM Energy Management Community, Worldwide Websphere Business Partners Community		
IBM on Twitter IBM on Facebook	Microsoft on Facebook	Intel on Twitter Intel on Facebook

IBM on LinkedIn		Intel on LinkedIn
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Source of the table: own case study on the basis of: www.ibm.pl; www.microsoft.pl, www.intel.pl [accessed: 08.09.2014]

Profits for commercial partner resulting from participation in the community of competence centres concern:

- reduction of expenditures related to software development – shorter production cycle and remote access to testing environments;
- immediate reacting to market needs – integration of own solutions with the newest platforms of knowledge promoter;
- increasing the application scope – multiplatform solutions offering the customer the freedom of choice;
- fast increase in effectiveness – access to promoter’s newest technologies and developed testing environments;
- knowledge expansion – broad training offer in the sphere of creation of solutions that are compatible with promoter’s platforms;
- improvement of quality – designing, creating and testing of high quality scalable and reliable solutions;
- minimisation of risk – ensuring compatibility of solutions;
- larger customer satisfaction – providing integrated, scalable and reliable solutions.

The range of support from knowledge Promoter most often includes: collecting partner’s/customer’s requirements, planning solution architecture, preparation of hardware configuration, preparation of licensing model and software, preparation and conducting tests in IIC as well as preparation of solution documentation.

4.2. System of qualified cooperation in IT sector

Commercial partners (cooperants) of studied companies constitute the main channel of implementation of innovative solutions and services on continuously dynamically developing market of the final customer. Therefore IBM, Microsoft and Intel companies implemented programs of partner cooperation within which set of tools are made accessible according to the degree of involvement in cooperation. Cooperant’s qualification and accessing the program ensures almost immediate access to the package of solutions, offers and profits favouring acquisition, development and creation of the sector knowledge.

Three levels of participation, with larger profits on the successive level, mean that the company can join the program on the level that corresponds to its business strategies provided that it obtains a specific number of certification points (table 4).

Table 4. Resource bundles by levels of certification

	IBM			Microsoft			Intel		
	Member	Advanced	Premier	Subscription	Silver	Gold	Technology Provider	Gold	Platinum
Financial profits									
- financial support for campaigns	*	*	*	-	-	-	-	-	X
- support of experts for events	*	*	*	-	-	-	-	-	-
- financing of co-marketing	X	X	X	-	-	-	-	-	-
- financing of events (exhibitions, conferences, seminars)	*	*	*	-	-	-	-	X	X
- support for positioning on market distinctions for Partners	X	X	X	X	X	X	-	-	X
	X	X	X	X	X	X	-	X	X
Market intellectual/knowledge resources	-	X	X	-	X	X	-		X
Specialist and technical knowledge resources	X	X	X	X	X	X	X	X	X
Demand generation									
- base for e-mail contacts and telemarketing services	X	X	X	-	-	-	X	-	X
- company promotion through access to sponsoring program	-	X	X	X	X	X	-	X	X
- method of realisation of Internet marketing	X	X	X	X	X	X	-	X	X
- channels of sale of own solutions	X	X	X	X	X	X	-	-	X
Marketing resources management									
- tools of online sale and marketing surveys	X	X	X	-	-	-	-	X	X
- publication of real solutions – case study	-	*	*	-	-	-	-	-	-
- tools for sale forecasting	X	X	X	-	-	-	-	-	X
- set of ready-made market solutions	X	X	X	-	-	-	-	X	X
- possibility of online conferences	X	X	X	-	-	-	-	X	X
- set of online rates	X	X	X	-	-	-	-	-	-
Promotion programs	X	X	X	-	-	-	-	-	X
Education and trainings	X	X	X	X	X	X	X	X	X

Key: X – concerns, - - does not concern, * - concerns after meeting specific conditions

Source: IBM Partner World – Program benefits, www.ibm.com 11.11.2011; IBM Professional Certification Program; http://www-03.ibm.com/certify/news/20060807_ap_b.shtml, [accessed: 04.09.2014]; Partner Network Microsoft <https://mspartner.microsoft.com/pl/pl/Pages/Membership/core-benefits.aspx>, [accessed: 03.09.2014]; Intel Technology Provider <http://www.intel.com/cd/channel/reseller/apac/eng/membership/293163.htm>, [accessed: 5.09.2014]

Access to profit bundle corresponding to the level of participation of companies takes place after collecting a determined number of points that define the bargaining power and are obtained in the following categories of activities:

- Recommending, sale and technical service of Promoter’s products,
- Achievements in the sphere of solutions, that is, implementation of Partner’s own solutions in customer’s environment on Promoter’s hardware and software,
- High satisfaction of customers, confirmed by results of surveys,
- New qualifications and certifications obtained by employees and products of Partner’s company,
- Active participation in programs conducted by the Promoter
- Generating incomes that is, sale of hardware, software and services, or remarkable influence on sale of products and services.

Points obtained by partner allow to reach higher levels of participation in Promoter’s program. In the system of IBM certification, cooperation based on knowledge diffusion that was working until 2010, there was a simple relation between the number of points and the range of available resources. Microsoft, in turn, distinguished two categories of points:

- qualifying points; they were points enabling registration on certification level;
- extra points; they were obtained over the maximum number of qualifying points; in the situation when a part of qualifying points expired or lost validity, extra points might be exchanged into qualifying points owing to which Partner could maintain their level of participation in the program.

Certification systems of companies evolve towards better specialisation of Partners in the sphere of technical knowledge, according to product criterion (table 5).

Table 5. Specialisation portfolio by products

IBM	Microsoft	Intel
Software Cloud and Smarter Infrastructure IBM Business Analytics IBM CICS Transactions IBM Collaboration Solutions IBM Commerce IBM Connectivity and Integration IBM Enterprise Content Management IBM Enterprise Marketing Management IBM Information Management IBM MobileFirst IBM Rational IBM Security Systems IBM Service Oriented Architecture (SOA) IBM Smarter Cities IBM WebSphere	Server Windows Server Exchange Server Lync Share Point	OEMs (original equipment manufacturers),
		LOEMs (local original equipment manufacturers)
		Endpoint Software Security Vendor
Hardware IBM Networking IBM Power Systems IBM Storage IBM System x IBM System z	Desktop computer Windows	Intel® Cloud Builder
IBM PureSystems IBM PureApplication IBM PureData IBM PureFlex	Applications Office Office 365 Microsoft Dynamics	Intel® Software Partner Program

Solutions IBM Cloud Computing IBM Global Technology Services Retail Store Solutions	Databases Server SQL	Intel Inside® Partner Program
IBM Infrastructure Systems Architect	Developer Visual Studio Windows Phone Share Point Application	Intel® Internet of Things Solutions Alliance

Source of the figure: IBM Professional Certification Program; http://www-03.ibm.com/certify/news/20060807_ap_b.shtml, [accessed: 04.09.2014]; Partner Network Microsoft <https://mspartner.microsoft.com/pl/pl/Pages/Membership/core-benefits.aspx>, [accessed: 03.09.2014]; Intel Technology Provider <http://www.intel.com/cd/channel/reseller/apac/eng/membership/293163.htm>, [accessed: 5.09.2014]

4.3. Results of knowledge diffusion and inter-processing in relations of entities in IT sector products and trade

Activities in the sphere of knowledge diffusion between knowledge promoters in IT product sector and their partners (distributors) described before and that are an expression of realisation of one of the subsystems of holistic MKM model are the response to the wish to meet the challenge of more and more demanding target customer. This customer often expects business and technical counselling, so a specialist knowledge. And thus we can observe a growing importance of the so-called VADs (Value Added Distributors) and VARs (Value Added Resellers) on IT market that willingly make use of knowledge-based relations and its Promoters (table 6).

Table 6. Dynamics of incomes of companies running VAD and VAR type distribution activity in Poland between 2006 and 2013, in %

Company	2006/2007	2007/2008	2008/2009	2010/2011	2011/12	2012/2013
ABC Data	22,9	7,5	-12,4	10	23	23
Action SA	39,2	28,6	-17,7	34	27	34
AB SA	23,4	11,3	-10,1	30	20	19
Komputronik	53,4	34,9	14,1	18	25	22
Incom SA	-	-	-	8	-11	27
Veracomp	19,9	8,3	5,1	16	21	57
NTT System	81,4	16	-24,1	18	3	6
Praxis SA	2,7	4	-12,6	3	11	76
RRC Poland	35	-31,8	15,3	13	6	28
Arcus	20,5	21,6	-11,1	-28	38	66
Senetic	-	-	-	67	83	97

Source of the figure: Computerworld TOP200, Ranking firm informatycznych i telekomunikacyjnych 2006-2014 [*Ranking of Information and Tele-communication companies 2006-2014*]

Data presented in the table above clearly show increase in dynamics of incomes of companies running VAD and VAR type distribution activity after crucial years of 2008 to 2009. According to managers of IT companies, these are the years after which activities for the benefit of value added in the form of specialist knowledge and counselling and active participation and / or development of competence centres were intensified. It is observed that the very close and deep specialisation could be the power of smaller distributors, which is

illustrated by the dynamics of incomes of relatively young companies Arcus and Senetic in recent years.

5. CONCLUSIONS

As it is shown by research results, entities of the sector of IT products and trade implement holistic model of knowledge management, particularly in its sub-system of BtoB relations⁹. The so-called competence centres constitute the framework for knowledge creation and its diffusion. They are established most often by the promoter of knowledge-based relation. Functioning of the Centre is most frequently observed in several forms of communities that differ with respect to the type and scope of competences that are the object of exchange. Competence centres are the expression of the adopted assumption of creation of knowledge through cooperation in communities.

Studied entities of IT sector apply qualified system of knowledge diffusion. The range of resources made available by the Promoter depends on activity of participants in relations according to strictly determined criteria of assessment that is defined by the object of relations or the knowledge commander himself. Profits available in programs are useful on every stage of business cycle, from activity planning (while making available the tools and resources useful for company running and developing), through development of skills (assistance in creating and retaining knowledge in defined areas of specialisation through providing access to training resources and software for internal applications and for demonstration purposes), development of possibilities (marketing activities useful for Partners in creation of demand and increase in sale in connection with premiere of new products and other marketing initiatives), development of commercial activity (programs of increase in sale and advantage over competitors), and supporting customers (tools and services useful to obtain high customer satisfaction and maintain strong relations with customers).

Described knowledge-based relations of entities of IT sector are of network quality because of two reasons: because of full awareness, expressed in involvement in management of knowledge based on synergistic effects of cooperating Partners and due to realisation of such ventures most often online.

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⁹ This model is also realised in the sphere of BtoC relations which is described by the author in the papers entitled: Knowledge communities as a way of applying the client knowledge management concept: The case of IT sector in Poland; Corporate Strategy and Government Policy. Challenges & issues in the 21st Century Global Academy of Business & Economic Research; Issues in Global Research in Business & Economics, New York 2012, pp. 15-31; Marketing knowledge management in structural approach; community of practice in Microsoft – international comparison. La Societe De L'information Perspective Europeenne Et Globale, Studia Ekonomiczne [*Economic Studies*], Department Scientific Bulletins of the University of Economics 2013, pp.144-157

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