



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

INTERORGANIZATIONAL COOPERATION IN IT PROJECT MANAGEMENT – COLLABORATIVE PROJECT MANAGEMENT

Jarosław Polak, Przemysław Wójcik³⁵ PMP, AGH University of Science and Technology,
Cracow, Poland;

Abstract

The IT sector is very demanding because of the dynamics of change or technological shape. Projects are getting larger and more complex. Hence, they are more often carried out by external resources, such as subcontracting or worldsourcing, as well as in more complex organizations of many partners within consortia. Partners from different fields use their experience and skills and their representatives from various centres and geographical locations find a place in the project board, which controls and monitors the workflow. Such projects require collaboration and sometimes immediate decisions of all involved partners. Often this causes different sort of difficulties, partners may have another perspective, other priorities or just their own work specification (Mariona T. et al., 2015).

The authors decided to explore the relationships between the partners at various stages of implementing IT projects, identify ways of cooperation, exchange opinions and seek common consensus that enables efficient and effective IT project management.

The aim of the article is to analyse the problems of project management in carrying out joint projects with particular emphasis on the impact of exogenous factors (among others such as competitor's actions, regulations or technology development) and endogenous factors (e.g. business strategy or access to resources) to start and develop interorganizational cooperation. Additionally, analysis conducted will cover models and forms of cooperation, as well as the dynamics of the relationship between the organizations.

Key words: *project management, interorganizational collaboration, interorganizational cooperation, collaborative project management,*

JEL code: *L14, L22, M15, M54, O30*

Introduction

In any area of business enterprises enter into some forms of mutual relations. From the simplest purchase - sale relationships, up to highly specialized technological projects or projects of a global reach. The implementation of such projects requires cooperation between various entities such as companies or institutions and public organizations. This is particularly true for IT projects, which due to the rapid development of technology and the dynamics of change become increasingly complex and complicated. Therefore, quite commonly these are carried out with the participation of many partners using external support, or through joint complex formal or informal organisms. This approach enables the parties involved, inter alia, to share their knowledge, skills and unique competencies, (Kozminski, Latusek-Jurczak, 2014). The joint action also entails a number of risks connected with the coordination of work, different priorities or differences related to the specifics of the work, or organizational culture of each partner. However, the consequence of the cooperation is not only achieving greater efficiency,

³⁵ e-mail:wojcikp@gmail.com



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

but also a chance for the execution of tasks that are beyond the capacity of a single company (Cropper et al., 2008).

The aim of this study is to analyse issues related to management of shared projects i.e. projects implemented by cooperating entities, particularly the impact of external and internal factors on the establishment of inter-organizational cooperation and development, as well as analysis of models and forms of cooperation, considering the dynamics of mutual relationship. Besides, the study covers methods of cooperation, exchange of opinions and seeking a consensus which could enable efficient and effective management of shared IT projects.

IT projects jointly implemented and interorganizational cooperation.

According to the definition set out in PMBoK “project is a temporary endeavor undertaken to create unique product, service, or result” (PMBOK - Fifth Edition, p.2). This wide definition also covers IT projects, or – from a more system- oriented perspective - ICT (information and communication technologies) projects. IT projects have their own specific character arising from the variability of technology, as well as their multiplicity and heterogeneity. In addition to the need of having indispensable knowledge and experience in the field of computer science, design teams have to face in their work changeable and often vague expectations of customers, as well as diversity of software and hardware or system security issues. The report of The Royal Academy of Engineering (The Royal Academy of Engineering, 2004) pointed to several features of IT projects which make them stand out from other projects. These are:

- lack of constraints - IT projects do not have limitations as other engineering projects and sometimes expectations of the customer are much higher than the capability of the supplier to deliver.
- visualization - software products are physically invisible and immaterial.
- flexibility - the intangible nature of software results in excessive requests for new features and potentially increases project failure.
- complexity - IT projects are multi-dimensional, scalable, diverse and heterogeneous, so that it is difficult to assess their feasibility.
- uncertainty - lack of clear specifications for the projects software/products, which can exceed technical capabilities and may cause failure in implementation.
- software and failure - in every piece of software there is an infinite number of assumptions are, therefore small changes can bring about failure of the project.
- supporting change - there is a need for suppliers to understand business processes and mistakes in this field, which may result in slowing down of the IT.

Such a highly complicated nature of projects means that usually it is not possible to implement the project within a single organizational structure. Businesses, organizations or enterprises, in order to cope with technical challenges and expectations enter into commercial cooperation. But what is interorganizational cooperation? Interorganizational cooperation means a configuration in which at least two or more independent organizations combine their resources to jointly create added value (Gulati, 1998). A slightly different definition (Niemczyk et al., 2012) sees cooperation as a joint activity, where at least two parties have mutually complementary goals. The bases of interorganizational cooperation are interorganizational relationships, or relationships which are result of the interactions of entities. Interorganizational relationships (IOR) are understood as the relationships between organizations, be it public, business-related



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

or non-profit ones. The relationships can be bilateral and multilateral, and may also cover networks of many organizations (Cropper et al., 2008, p4).

The concept of IOR is ambiguous and such terms as partnership, alliance or network are often used interchangeably. At least three reasons why organizations enter into cooperation can be pointed out (Doz, Hamel, 1998). The first one is to join forces so that potential rivals turn into allies, each providing the missing products or services. The second one is a combination of competence aimed at creating value through synergies. The third reason is the acquisition of knowledge in cooperation with a partner, which being an extremely valuable resource is not offered for sale. The first of these reasons - joining forces - is the source of creation and functioning of cooperative relationships, which are based on simultaneous competition and cooperation between two or more business partners (Brandenburger, Nalebuff, 2011). Table 1 below shows the classification of the interorganizational relations as regards origin, objectives and strategy of the organization.

Table 1

The classification of interorganizational relationships

Relations from the perspective of their source	Relations from the perspective of goals	Relations from the perspective of organizational strategy
Administrative – commands, standards, procedures.	Focused on sharing resources - joint use of resources, learning from others and sharing knowledge, lending and replenishment of resources and competences.	The relationship of cooperation or collaboration.
Economic – material and/or financial transactions.		
Operational – joint decision making and action taking, using the same resources.	Focused on integration activities - synergy by coupling value chains, creating targeted links.	Relationships of competition or rivalry between the entities.
Cultural – shared norms and values, community of opportunities and threats.	Aimed at aligning positions - coordinating actions to strengthen market position, mutual support of partners and joint market activities.	Relations of cooperation, i.e. cooperation and simultaneous competition between entities.
Informational – accessibility of information, information exchange and sharing.		

Source: author's construction based on: Sroka, 2012; De Wit, Meyer, 2007; Kozarkiewicz, 2014.

Currently, in management science, one of the fundamental concepts that relate to interorganizational cooperation are business networks. They are seen as new structures created as a result of interaction between organizations, in other words - forms, or complex types of organizational architecture or specific forms of cooperation, integration and coordination resulting from cooperation agreements between multiple parties (Kozarkiewicz, 2014). Interorganizational networks are defined in various ways, as a result of differences in perception of the network (selected definitions):

- Interorganizational network is a system of two or more organizations involved in a long-term relationship (Thorelli, 1986).

- Interorganizational network is a group of companies entering into relative contacts with each other (Kay, 1996).



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

- Network is the institutional form of coordination, supervision, exchange of economic and other relations between the actors (Ebers 1999).

Cooperation between organizations can take many forms, and its scope and intensity are subject to change. Some of the most common forms and models of cooperation are outsourcing, consortia, clusters, strategic alliances and holdings.

Outsourcing is contracted use of resources, assets and skills of third parties with guaranteed level of quality, flexibility and value (Bravard, Morgan, 2010). Outsourcing can take the form of ongoing cooperation, or individual orders for the performance of a specific task. This concept comprises terms such as subcontracting - delegating tasks and worldsourcing - use of IT resources throughout the world. The predominant types of outsourcing is BPO (the Business Process Outsourcing) which is the sector of business services such as financial, accounting or legal services, call centres, etc. and SSC (shared services centres), performing specialist tasks for multiple partners.

In turn, consortium is relationship of several entities, aimed at carrying out large projects, mainly infrastructure and technology-related, requiring significant financial investments and bearing high risk. In practice, they are created to apply for public procurement and joint participation in tenders. A consortium has no legal personality. It is an agreement between the parties involved.

Clusters, according to M. Porter (Porter, 2001) are geographic concentrations of interconnected companies, specialized suppliers, service providers, businesses operating in related industries and associated institutions in particular fields, competing, but also cooperating. According to the OECD clusters are geographic concentrations of interconnected companies and institutions specializing in a particular area of economic activity (Niemczyk et al., 2012). There is a multitude of definitions of clusters, but they always emphasise regional links, the community of cooperating entities and the creation of formal and informal relationships.

Strategic alliances can be of diverse character, from informal agreements between partners to contractual and capital dependencies. They also take different organizational and legal forms, eg. joint projects, joint ventures, etc. Characteristic features of alliances are (Sroka, 2012):

- independence of strategic partners,
- common specific goals,
- fragmentation - an alliance covers only a part of the activities of each of the allies,
- long-term character.

In the case of long-term strategic cooperation an equity alliance in the form of a joint venture is most often chosen.

Holding is a corporation that owns a sufficient amount of another company's stock to influence its board of directors and control its management and policies. A holding company may own companies in its industry or in non-related industries (Webster's New World Finance and Investment Dictionary, 2010). It is one of which single-handedly controls the others, or uses its opportunity to impose its will. In a holding company there is a parent and a subsidiary. The parent company has the ability to influence the decisions taken by its subsidiaries. The main features of the holding company are separate legal personalities of its constituent parties, and the fact that the parent company frequently resigns from business activity.



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

Research results and discussion

The main objective of empirical research was to investigate the perceptions of employees in technological companies regarding the identification of factors encouraging establishing cooperation between companies for the implementation of IT projects. The studies involved over twenty-five middle and high level employees from the IT sector companies implementing initiatives for global customers. All respondents of the survey sample enjoy regular management level positions in medium and large organizations in Poland and have direct knowledge of ongoing initiatives in their companies. The adopted research model was based on research preceded by analysis of the literature in order to identify the factors determining the establishment of cooperation in the implementation of IT projects. The research itself was carried out using semi-structured interviews (Hove S.E. et al., 2005) due to the high extent of respondents' openness and their frequent use of examples from business practice. The research also allowed gathering wide range of information about practical approach in the field of specific areas in project management – such as: risk management or change management in interorganizational cooperation.

It should be noted that the respondents have very good background knowledge of project management as well as widely understood process of procurement and cooperation, as indicated by the analysis of linguistic aspects (phrases typical of the industry, jargon). The discourse analysis allows exploring the context of action and decision-taking process in cooperation with an external partner. The only selected results of the research divided into two main categories are presented below in a very synthetic way. The first subchapter depicts the main aspects of the determinants establishing cooperation. The second one presents specific activities in the IT initiatives carried out jointly in the layer of project management.

Determinants of establishing cooperation with other entities in the implementation of IT projects.

The first part of the interview concerned the survey respondents' perception of the factors encouraging entering into cooperation with other entities in the implementation of IT projects. Most of the respondents demonstrate the belief that in the current circumstances it is very difficult to carry out projects independently. It is regardless of whether they are IT companies or companies from outside of the IT sector. The respondents indicate that there is always shortage of the domain knowledge or technological expertise thus the absolute necessity of entering into cooperation nowadays. During the interviews, it was pointed out that the conditions and principles of cooperation largely depend on the economic situation of a company that is looking for a technological partner. The form and the manner of cooperation were often considered in the light of economy - sharing the costs and optimizing expenditure. Analysing the responses, it was often pointed out that companies with greater financial background and those with foreign capital look for partners not only from the domestic market.

The following characteristics were dominant and often repeated in the respondents' opinions about the factors determining establishment of cooperation with other entities:

- lack of competence, skills, knowledge of IT in one of the companies,
- recognizable branding and other contacts, partner's business relations making it possible for the technological partner to explore a new area,



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

- no required credentials and experience on the market - this factor was mainly pointed out in the area of procurement and auctions in which the company participated.

- optimization of costs at the stage of manufacturing by delegating to the partner representing the IT business all work related to the widely understood IT, including the purchase of equipment, licenses and other software.

- complete lack or very few available own resources in the IT area - especially as indicated by the respondents - the project commencement time under current circumstances must be very short - hence especially smaller subcontractors of simpler and flatter structures are highly desirable. Several respondents also indicated that they could not imagine the possibility to react quickly to changes resulting from directives and regulations introduced by the sector specific regulators without a partner company.

It should be finally stressed that respondents pointed to the need to have at least a few subject matter experts in the field in which they work with a partner to achieve an efficient and effective communication and collaboration. They also very often mentioned a takeover of their employees by the partner (by offering more attractive working conditions such as better salaries and broader development opportunities). That was underlined as a certain sort of risk, which was mitigated by legal provisions in the partnership agreements.

The indicated factors influencing the willingness to establish cooperation with other partners in the implementation of IT projects were classified into two separate categories – endo- and exogenous for the company.

Table 2

Factors influencing the propensity to establish cooperation with other partners in the implementation of IT projects

Internal factors (IF)	External factors (EF)
<ol style="list-style-type: none"> 1. High potential of human resources (opportunity to demonstrate one's competence). 2. Lack of specific competence in the team (the lack of a possibility of execution). 3. Lack of specific technology, licenses, available to the partner company. 4. Increasing the scale of operation (in terms of scope and time of the services provided). 5. Pressure on reducing investment costs (cooperation as a form of savings). 6. Experience and confidence (sometimes misjudged) that one is unable to implement the project with one's own resources. 7. Tight schedule of the project, making it impossible to implement the project with one's own resources. 8. Lack of know-how to implement the project. 9. The ability to take the initiative on a larger scale and the higher level of complexity. 	<ol style="list-style-type: none"> 1. Introduction of new technology to the market. 2. New legal regulations. 3. The remaining expenditure budget - the possibility to reallocate funds from one year to the shared implementation of tasks with a partner in the following years. 4. The company database, experience of another company and history of cooperation. 5. Strong competition in the industry. Partners have a similar organizational structure and aim at a similar target group of customers, which facilitates networking and cooperation. 6. The ability to obtain financing from outside. 7. Lack of sufficient competence, experience, licenses in one of the companies involved in the project implementation. 8. One company has a better business relationship with the end customer or is obliged, for some other reason, to supply the product. 9. Recognized and respected brand of at least one of the partners.

Source: author's own research



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

During the interviews, the majority of respondents, as presented in Table 2, indicate the major internal factors as those that focus on areas of competence and knowledge of organization's personnel (IF1, IF 2, IF 6, IF 8). Interestingly, both lack of competence or skills and high potential of the personnel is a catalyst, a stimulator of partnerships. This is due to the inertia of large organizations, where ambitious, talented individuals are not able to take full advantage of their talent and the skills - "working in the IT factories, not high-tech startups" - hence their bottom-up attempt at finding self-fulfilment in collaboration with external entities. In the area of external factors, it is clear that companies look for support in cooperation with other companies with respect to new customer acquisition, market entry (EF4, EF5, EF8, EF9) and use the existing, well-known partner company brand as leverage in the market.

The forms of cooperation indicated in the interviews include: outsourcing, subcontracting, joint ventures, cosourcing. Analysis of the perception of respondents in the area of the most effective forms of cooperation shows that it is a desirable situation when one partner has a leading and dominant role in the project. This allows for quick decisions and reactions to changes without involving the decision makers of each partner. However, this model does not work at high-cost projects, where partners bear a big risk. Then, according to the respondents, an effective form of cooperation is the establishment of a dedicated joint-venture company with a legal personality. "It is an effective form of cooperation as partners engage their resources in the execution of a specific project. They can share costs and exchange know-how. "Another approach used especially in the area of public procurement is a model of cooperation based on the consortium. However, it is outsourcing and subcontracting that was most often indicated as the most popular and predominant type of cooperation. This is due to the relatively simple and not very absorbing formal prerequisites of cooperation. It is worth noting that the respondents demonstrated high level of awareness of the models and forms of cooperation, trade restrictions and the legal and financial capabilities of their organizations. They realized that there was no golden or universally applicable form of cooperation. Often despite awareness that in a particular case, the project could have been implemented (in their opinion) within a different model - they had to adjust to the cooperation strategy of the organization or fixed procedures for selecting partners and establishing cooperation.

Project team form, project management.

Most respondents did not indicate significant differences regarding constitution of the project team and project management in projects carried out jointly. In the course of research they indicated that the use of mature methodologies of project management (eg. Prince2, PMBoK) entirely cover the aspects related to project management, risk, change and so on. They pointed out, however, that the effective cooperation (as described in the sub-chapter 1) requires, depending on the form of cooperation, selection of the lead, dominant partner. According to the respondents the main obstacle is the lack of autonomy in decision-making, any changes must be agreed with partners, which takes time. During the collaboration, there are conflicts between the partners regarding the implementation of projects, most often related to the financing of tasks. Thus, the project steering team, the steering committee must include representatives of all the partners, and the project manager should, according to the respondents, come from the lead partner - which will further legitimize their actions. The few identified specific practices or processes occurring in the management of IT projects carried out jointly with a partner are:



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

- a clear definition of roles and responsibilities – at the level of manufacturing and the level of management,

- policy of knowledge transferring and sharing - despite sometimes very close cooperation, the companies need to protect their "know-how" and some knowledge - hence it is essential to determine the scope, procedures for the acquisition and transfer of knowledge between partners,

- the escalation path - in a multi-vendor environment it is necessary to establish a clear and fair escalation path within a manufacturing layer and a management one; an interesting practice indicated by the respondents was the use in large, complex projects involving many partners, „a body of appeal” acting as an impartial mediator. When one of the partners felt cheated on the path of escalation, it could appeal against the decision,

- specifying a minimum number of personal meetings – despite the geographical dispersion, it is crucial to teams to have the opportunity to of cycling work in a direct way,

- specifying leading technology stack and solution architecture at the stage of partner selection or at the beginning of cooperation; even the preliminary outline of an approach will enable the IT initiative to recognize the scale of the project and allocate adequate resources,

- access management - cooperation of many partners require access to different resources for different people at certain times. For IT projects carried out jointly respondents indicated a very large time overhead associated with the creation of an appropriate working environment.

Regarding IT projects carried out jointly at the level of management, the respondents discussing in a natural way the specific processes pointed to the limitations and barriers to collaboration.

Table 3

Obstacles, threats in cooperation on IT project implementation

No	name	description
1	Communication problems	Multitude of partners requires a complex, multi-level communication and reporting, which is often insufficient and / or absorbent for each partner
2	Difficulties in supervision	The lead partner usually has limited information about the actual progress and problems of each partner.
3	Organizational culture	Every company has its own work style, its own worked out internal culture of organization and task performing and that may be, in extreme cases, conflicting with other partners.
4	Lack of independence	Partners - especially smaller –do not look for solutions themselves while having problems but escalate them in the simplest way.
5	Different objectives of partners	Each partner may want to achieve different, sometimes contradictory goal (depending on incentives and factors stimulating the establishing of cooperation) – Table 2.
6	Technical culture	It is important aspect as IT projects are very demanding. Different methods, approaches to their implementation may be problematic in the phase of integration of the various components of the solution.
7	Lack of confidence	The fear of losing markets and losses resulting from the transfer of knowledge and unique practices to a partner that can use them only for its own purposes (and sometimes against the partner with whom it currently works).

Source: author's own research



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

The study results presented in Table 3 help to identify the problems which, according to the respondents, are the most important. While analyzing the data in Table 3 it may be noticed that problems in the area of organization, management, stakeholders or barriers of cooperation of the partners distributed are the main obstacles. The technical domain, a core challenge in IT projects, is only one and it is not the dominant area of obstacles specified in the study.

Conclusions

The article presents selected findings of the empirical research on aspects of interorganizational cooperation of companies implementing shared IT projects. The study is based on the data collected by the use of the semi-structured interview. It focuses on three groups of questions: the identification of factors tending to establish cooperation, adopted models of cooperation and the impact of cooperation on a project management. The study was of pilot character and for this reason it has a number of restrictions on their representativeness. The findings may provide an interesting insight into the real problems of the teams implementing IT projects in cooperation with partners.

Polish companies are aware of cooperation issues. They move in this area in a responsible way owing to their competence and the use of well-known and recognized project management approaches. In many cases they are obliged to cooperate in a less appropriate model but being aware of restrictions and obstacles they look for their place in the IT market.

The study also shows the huge potential for expansion of its scope. It seems that interesting conclusions can be achieved by expanding the research on companies outside the IT industry as well as on others - a narrower field of IT – such as software production or telecommunication projects.

References

- Brandenburger A. M., Nalebuff B. J. *Co-opetition. A Revolution Mindset That Combines Competition and Cooperation*. Random House 2011.
- Bravard, J., Morgan, R., 2009. *Smarter outsourcing: An executive guide to understanding, planning and exploiting successful outsourcing relationships*. Harlow, England: FT Prentice Hall.
- Cropper S., Ebers M., Huxham C., Smith Ring P., 2008. *The Oxford handbook of inter-organizational relations*, Oxford University Press.
- Doz Y.L., Hamel G. .1998. *Alliance Advantage: The Art of Creating Value Through Partnership*, Boston, Harvard Business School Press.
- Ebers M., 1999. *The formation of inter-organizational networks*, Oxford University Press, Oxford.
- Gulati R. 1998. *Alliances and Networks*, Strategic Management Journal, vol. 19, no 4, p. 293-317.
- Gulati R., Purnam P., Tusham M. 2012, *Meta-design. Rethinking design in inter-organizational and community context*, Strategic Management Journal, vol. 33, no 6, p. 571-586.
- Hove, S.E., Simula Res. Lab., Lysaker, Anda, B., 2005. Experiences from conducting semi-structured interviews in empirical software engineering research. Software Metrics, 11th IEEE International Symposium. IEEE, pages 10-23.
- Kay J., 1996. *Why Firms Succeed*, Oxford University Press, Oxford.
- Kozarkiewicz A. 2014. *Modele współpracy międzyorganizacyjnej*, [in] Łada M. (red.), *Międzyorganizacyjna rachunkowość zarządcza. Zastosowanie metod rachunkowości w zarządzaniu sieciami biznesowymi*, Wolters Kluwert, Warszawa.
- Koźmiński A.K., Latusek-Jurczak D. (red.) 2014. *Relacje międzyorganizacyjne w naukach o zarządzaniu*, Wolters Kluwer, Warszawa.



Project Management Development – Practice and Perspectives

Fifth International Scientific Conference on Project Management in the Baltic Countries

April 14-15, 2016, Riga, University of Latvia

- Mariona T., Eddlestonb K., Friarc J., Deedsd D., 2015. The evolution of interorganizational relationships in emerging ventures: An ethnographic study within the new product development process. *Journal of Business Venturing*. Volume 30, Issue 1, pages 167–184.
- Niemczyk J., Stańczyk-Hugiet E., Jasiński B. (red.) 2012. *Sieci międzyorganizacyjne. Współczesne wyzwania dla teorii i praktyki zarządzania*, C.H. Beck, Warszawa.
- Porter M. E., 2001, *On Competition*, Harvard Business Review Book.
- Project Management Institute, 2013. *A Guide to the Project Management Body of Knowledge (PMBOK Guide) - Fifth Edition*.
- Sroka W., 2014. *Sieci aliansów. Poszukiwanie przewagi konkurencyjnej poprzez współpracę*, PWE, Warszawa.
- The Royal Academy of Engineering, 2004. *The Challenges of Complex IT Projects*. [Online] Available at: <http://www.bcs.org/upload/pdf/complexity.pdf> [Accessed 15 January 2016].
- Thorelli H.B., 1986. *Networks: Between markets and hierarchies*, „Strategic Management Journal”, Vol. 7, No. 1, s.37-51.
- [Webster's New World Finance and Investment Dictionary](#), 2010. Wiley Publishing, Inc., Indianapolis.
- Wengraf T., 2001. *Qualitative Research Interviewing: Biographic Narrative and Semi-Structured Methods*. London, SAGE.
- Wit de B., Meyer R., 2005. *Strategy Synthesis: Resolving Strategy Paradoxes to Create Competitive Advantage (Concise Version)*, Thompson Learning.