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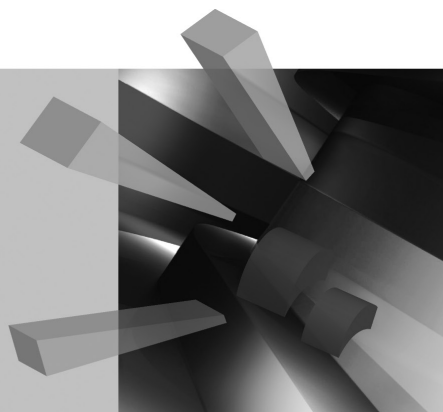
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Spis treści

Summary

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APPLICATION OF ECOSYSTEMIC AND NETWORKING APPROACH TO BUILDING INTEGRATED SYSTEM IN A COMPANY

Summary: The paper presents a model of building Integrated System (IS) in a non-IT company on the basis of platforms offered by enormous Information Communication Technology (ICT) ecosystems. The case studies referred to in the article show the impact of networking on the effectiveness of building and using IS in an organization by introducing two large IT platforms.

Keywords: business ecosystems, intra and inter-organizational networks.

1. Introduction

The aim of this paper is to analyse the application of the theory of networking to constructing IS in a non-IT company. It is a common belief among the executives that their IT systems not only fail to meet their expectations but also generate many organizational problems and often constitute a drain on the company's financial resources. The authors of multiple publications which deal with this issue have been long recounting some spectacular failures of IT projects [Davenport 1998, p. 1]. They have also been reporting on unjustified increase in companies' spending on ICT with poor or none returns on this investment [Carr 2003, p. 4]. Most of the proposed diagnoses of this problem revolve around the nature of ICT [Barney 2004, p. 56-75] and reinforce the idea of "gap between IT and business". Many of these analyses accept the existence of the above-mentioned gap as a fact and they follow the pattern which only widens the gulf between these two areas. These approaches stick to the conventional division between IT, business and external provider emphasizing at the same time the conflict of interests between them. It is assumed that the suppliers of technology for an IT unit should be strictly controlled and the process ought to be coordinated according to certain procedures, for example those proposed by IT Governance.

In contrast to the schematic approach presented above, the perspective adopted in this article shows the issue from a different angle. It refers to the mechanisms

of networking in management. The paper concentrates on managerial difficulties related to the presented model of building an IS in a company. IT aspects have been purposefully treated in a very general manner not to blur the main subject of this study.

The case study presented in the research part of this paper illustrates the application of the postulated actions in a given non-IT company. Basing on a single, but rather complex example the article shows the outcomes of these actions comparing the implementation of two different powerful IT platforms. Networking as a notion functioning in the theory of management will be in this article explored in relation to the following ideas:
- networking understood as decomposition of the rigid organizational structures and a form of cooperation among different kinds of organizations,
- network thinking as a method of problem resolution,
- Marco Iansiti's ecosystemic approach.

2. Complex networks and ecosystems

Networking as a form of organization and mode of thinking
The notion of network is very simple and intuitively comprehensible. Networks consist of three complements: nodes, ties and flows. Ties allow the existence of flows. All of these constituents may display a great variety of characteristics, which makes it possible to design greatly complex systems that can be described as nods and relations with different attributes, whereas the dynamics of the system could be described as changeability of nods, relations and flows. The notion of network has been exploited by social science for a long time. The traditional approach applying the idea of a network to social science can be found in works of such authors as for example [Fombrun 1982]. In the latest studies the dynamics of social networks is assessed by means of new measuring tools, being at the same time an inherent part of the research into the notion of complexity [Nowak et al. 2009].

Networking, in this paper, is considered from the perspective of its managerial applications and is understood as deconstruction of organizational structures. Monoliths with one management centre, clear hierarchy and explicit structure are replaced by networks of interlinked units, distinct to a various extent, which cooperate to perform a common task, still, though, retaining their autonomy. Such networks may have several dominant centres. They could be best depicted as "pulsating", that is changeable in terms of composition, strength of relations, aims and tasks. Obviously, the rationale behind such a structure is the demand for the capability to respond fast to the changes in the technology market, the necessity of cost minimizing and attaining operational perfection; the need for knowledge and skills acquisition as well as obtaining information and qualifications; ensuring the security in many aspects [Koźmiński 2004, p. 39-41; Dolińska 2010, p. 63-64]. In reference to the approach presented by [Krupski et al. 2005, p.74-78] networking plays an important role in maintaining the flexibility of the organization's structures and resources. More and more common use of such structures results in absorbing the processes so

far taking place in its surroundings within the organization. Units in the network are gradually becoming less and less sensitive to typically intraorganizational managing mechanisms, such as orders from superiors, socialization and indoctrination, rules, formal procedures, punishments and sanctions. In the domain of complex ICT technologies the theoretical boundary between the internal and external network blurs, since the former employer-employee relation has changed its nature. Irrespective of the type of employment contract, specialists develop a free-lancer mentality. They tend to see themselves as service providers who temporarily provide services to various purchasers whom they treated as clients rather than employers or superiors. They do not seem to identify themselves with the employer, taking into account solely their own benefits and perceive themselves as one-person firm [Koźmiński 2004, p. 46-47]. The approach offered in this paper takes into consideration all of the above-mentioned phenomena.

Furthermore, the analytic tools should be adjusted to the nature of the discussed issues. For problems concerning networking in management certain methods of network thinking have been developed. They possess the characteristics of systemic approach, but at the same time (without excessive formalization and simplification) allow to study the issue in its whole complexity. The paradigms and methodologies concerning the problems connected with management as well as their applications have been discussed by [Piekarczyk, Zimniewicz 2010] and they can serve as a tool to illustrate, elaborate and generalize the issues referred to in this paper.

Ecosystems

Ecosystemic approach in management is a fairly young phenomenon, nevertheless, it has already been studied widely and theoretical models have been abundantly put forward. The historical background of the emergence of "ecosystem" as a notion was studied by James Moore [Moore 2005]. Mirva Peltoniemi discusses the ecosystemic approach in the context of complex adaptive systems [Peltoniemi, Vuori 2004]. The same authors have proposed the theoretical framework for the analysis of ecosystem management [Peltoniemi 2006]. This article, though, refers to the approach based on biological analogies which have been proposed and are developed by Iansiti and Levien [Iansiti, Levien 2004b]. Their perspective on the idea of ecosystem is especially useful for the considerations contained in this article, as they based this model of ecosystem on the thorough research into ecosystems in the domain of ICT. Their paradigm is fairly straightforward, but at the same time it allows to succinctly and accurately describe and explain the observed interdependencies. Here are some of the notions used in the further parts of the article:

DEFINITION (based on biological analogy)

Ecosystem is created by a large number of participants interdependent on one another in terms of effectiveness and survival. The difference between the ecosystemic and traditional approach lies in the fact that the analysed unit is not the trade, but the ecosystem in which the organization participates, determined by the power and kind of its relationships. The strength of relationship also brings about

the division between what is called "the keystone" which is a crucial species and "dominator", the notion which describes the domineering species in an ecosystem. ICT domain can be also considered as a complex ecosystem with several keystones such as, citing after Iansiti, IBM, Microsoft, Sun, Intel.

The keystone is the source of value and a pivot for the whole ecosystem. Its position depends on the strength of relationships, but not the extent to which it is present in the ecosystem. By contrast, the dominator's position is ensured by its extensive participation in the ecosystem, which can be disadvantageous to the ecosystem's desirable attributes like abundance and diversity. In extreme cases the whole ecosystem is encased within one company which then constitutes simultaneously the keystone and dominator in the ecosystem.

What is also emphasized in the idea of ecosystem is the fact that in spite of considerable diversity of forms of cooperation within the ecosystem, all members of the network run the risk of suffering the same fate. It is then essential not only to study a given ecosystem's position on the competitive market, but also to look into its network's internal characteristics which, all factors combined, is referred to as the ecosystem's "health". The health of the ecosystem can be measured by means of three factors: its productivity, robustness and the capability of niche creation. The below case study analyses the relationships in two large ecosystems created by IBM and SAP.

SAP Ecosystem

An action undertaken by SAP company shows that it places a great emphasis on the importance of creating customer value by consistently and purposefully building its ecosystem. The information website on the company's homepage is entitled "SAP ecosystem/ partners. Customer-oriented SAP ecosystem: essential to deliver exceptional results". Further quote: "The merits of SAP ecosystem: linking customers, partners and individuals. SAP ecosystem offers an organized set of actions and initiatives which enables the customers to access a diversity of relations and resources containing solutions and services provided for partners and communities supporting SAP's innovations".

IBM Ecosystem

IBM company does not describe its structure as ecosystem, which is justified in the light of the below case study. As opposed to SAP, IBM appears to hold the position of a keystone as well as a dominator, which seems to adversely affect customers and partners.

3. Network building model − proposition

General structure of the model

Creating a network means constant decomposition of the existing structures – actions consisting in defining or discovering nods, building or reconstructing relationships (ties) as well as initiating flows between nods in a given organization

and chosen elements of its environment. The activities discussed in this paper revolve around IS. One of the vital functions of the networking process is: creating patterns of effective cooperation by performing tasks, retaining them within the newly-created structure and dynamic launching. Despite earlier remarks on blurring of the boundaries between the organization's internal and external network, the mechanisms governing the emergence of these networks are in real life somewhat different [Dolińska 2010, p. 62]. Therefore, in the following model we will differentiate between:

1. External network – extending the company's boundaries by relating to chosen technological ecosystems. This element may evolve from simple relations with providers into complex interorganizational network. In the latter case, the network could be studied by means of tools devised especially for describing complex interorganizational networks. A rather straightforward model which could be applied to the study of building and analysing interorganizational networks is offered by Crotou and Bergeron [Croteau, Bergeron 2009], whereas an extensive one can be found in the works of Ranaei [Ranaei et al. 2010].

2. Internal network – from the perspective of the general approach to the creation of a network is a special kind of horizontal integration. According to [Ghostall, Gratton 2002], the afore-mentioned integration possesses various aspects. Apart from the operational one, which is the focus of this article, there also exist intellectual, social and emotional aspects which all affect the creation of internal network. Obviously, the nature of nods and relations created within the newly emerging network results from the analysis of specific obstacles to IS development and, in response to this, the inclusion of good practices in IT management (e.g. TOGAF, ITIL, IT Governance, agile methodologies). Apart from these, one can use general analytic tools supporting the process of designing internal organizational networks offered by ONA methodology (Organization Network Analysis). Additionally, the ever-present traces of contacts in IT tools enable the discovery and exploitation of real-life on the organizational level but not always formalized ties and flows.

The division between the external and internal network is purely conceptual, since on the implementation level all nods are interconnected and resemble the pulsating system which extends not only over IS but also over the outside network, making an organic whole (they permeate into one another). Nevertheless, the different nature of the nods and relations in these two kinds of networks forces their separate analyses.

External component of the network

Mechanisms of external network creation must rely on the specific characteristics of the ecosystem built around a given platform. However, we should also mention some other general factors which may later influence the networking process and should be also considered when choosing a platform. Rankings prepared by such companies as Gartner and Foster show that there are no permanent leaders in the IT domain as the positions of different producers tend to be changeable. Therefore, the dependence on a single platform would be unjustified and risky. Still, the cooperation with a wide range of platforms would be disadvantageous. We can, then, limit the

excessive diversity by cooperating with several ecosystems using to our advantage the competition between them and at the same time securing safety of the further development and reasonable costs.

When choosing the ecosystem to connect with, it is advisable to consider not only the technological aspects of the offer but also those components of the ecosystem which foster the development of IS and make the cooperation more secure and more effective. Good examples of these are: development strategy connected to the vision of the market development, the effectiveness of the implementation processes, innovativeness, its influence on shaping the market, its participation in creating and supporting open standards, models and referential processes and general analytical business competences.

It seems that these characteristics are gradually becoming a standard on the competitive market and they are less and less useful for differentiating between ecosystems.

A difficult task of choosing an ecosystem might be, nevertheless, approached more systematically employing the criteria of health introduced by [Iansiti, Levien 2004a]. Apart from the basic criteria mentioned earlier in the text (robustness, productivity and capability for niche creation), he also suggested sustainability, predictability, lifespan of its members, continuity and moderate ageing.

The usefulness of the analyses grounded in ecosystemic model can be assessed on the basis of examples which can be found in studies by [Hartigh et al. 2006] and [Iansiti, Levien 2004a].The following paper does not include the discussion of various forms of cooperation on the strategic, tactical or operational levels, which have been widely discussed in other sources and can be deemed classic in the domain. It should be emphasized that undertaking actions in line with the networking model in question builds trust, which in turn allows to limit formalization and thus to simplify and open more opportunities for establishing different types of contacts. Thanks to it, instead of limiting to the choice of several variants of cooperation classified and described in the literature, one can create an organic and dynamic structure which would be tailored to the specific demands of the company.

Internal component of the network

Generally, all the activities connected to IS should support its development and its correct operation. These activities could be, of course, formalized but this seems to be rather pointless. A vast part of these activities may consist in planning and implementing very complex modifications (in different areas and with different scope) in the relation between the organization and the system. The field of management science offers different frameworks for organizing these activities. These are: general rules of change management, project management, agile methods, processing approach, recommendations of the platform producers referring to operating procedures, methods and good practices in the IT domain, e.g. ITIL or TOGAF.

Moreover, as an auxiliary tool we could use methods developed specifically for creating internal networks, so called ONA (Organization Network Analysis). Since the considerations presented in this paper refer to IS which are already on a certain stage of advancement (organizational and technological one), we have a significant amount of knowledge resources to draw upon. The system registering incidents and problems being solved becomes a part of the organization's database of knowledge of IS. It contains information about nods, relations and flows in the network. Within its scope, a database is created collecting information about the IT system and the processes that it supports. It includes such elements as: instructions, system documentation and descriptions of the solved problems. It could even contain an architectural description of the company, for instance in a form suggested by [Ross et al. 2006]. Apart from these, we also have access to the information about the system which is made available within an ecosystem by the producer of the platform, partners and the community of users.

Due to the specificity and dynamism of operations around the IS, it seems vital to build a reconfigurable network structure which would integrate and optimize these actions, particularly where business and IT meet. This will obviously bring decomposition of formalized functional structures. One possible way to describe the functioning network is by means of roles which will constitute, at the same time, nods in the emerging network.

Business Area Owner fulfils a function of Department Manager. He is the decision-making nod on the strategic level. This is the way we deploy the network on the organizational structure: we divide different kinds of company's activities into sectors according to departments' responsibilities and mapping them onto the units of the system. Business System Owner fulfils a function of the manager of the key unit. He is the representative of the Business Area Owner on the tactic level. Key User operates within the system on the level close to the middle-rank manager of organizational unit

On the IT side we can list: Business Area Analyst, System/Module Administrator, Technical Administrator and in terms of developmental tasks System Architect and Solution Architect. A very important aspect of the newly created network is its connection to system implementation projects being simply a temporary reconfiguration of part of the organization. Successfully formed relationships and acquired competences as well as the trust built at the time of carrying out of implementation projects are the assets of the company and should be projected on network structures. Thus, they should be a significant source of information for reconfiguration of the network. On the other hand, the network itself should have the ability to efficiently generate implementation project structures which would meet the demands of a given task. In other words, certain patterns of cooperation ought to be developed in response to the parameters of a given task [Halloway, Parmigiani 2010]. show a simple example how the task structure, described by means of three

categories: duration, diversity and uncertainty, translates itself into the choice of partners and relations in order to attain a given goal.

4. Case study of a non-IT company

Company X, a non-IT organization in relation to ICT ecosystems

When referring to a company as a non-IT organization it is assumed that the main scope of the company's activity is not the IT domain, and the ICT is not its main technology. The main goal of IT unit in such a company is creating and maintaining IS compatible with the demands and capabilities of the company. The system should facilitate management and core processes as well as achievement of the company's goals.

Company X is a stable organization, operating on a regulated market. It is not under pressure of competition. Nevertheless, the changeable information needs a result from the regulator's activity. The company is divided into three branches in different locations operating to some degree independently. It is made up of ten to twenty units of different size spread over south-western Poland. The company employs over 1000 people. The responsibility for the IT infrastructure in the company is held by the IT unit led by a CIO reporting to a Member of the Board of Directors. It consists of 30 employees, including 4 managers and 15 specialists. As far as IT infrastructure is concerned, according to the phases of IT infrastructure development suggested by [Ross et al.2006, p. 176-196], the company is on an advanced stage of level 2 referred to as IT Standardization Architecture.

Implementation of two large IT platforms in Company X

To demonstrate the usefulness of the proposed model, a study of the implementation process and the exploitation of the implemented platforms has been conducted. Two implementation projects have been chosen for the research: SAP's (SAP ERP Platform) and IBM's (Maximo Platform). As it can be seen from the following table the scale and specificity of both projects have similar parameters to chosen aspects of the process.

None of the projects was well-prepared, which can be inferred from the fact that the scope, duration and the amount of financial resources were being repeatedly radically changed without any objective reasons. This, nevertheless, allowed the observation of the mechanisms of networking process presented in this paper. The emerging obstacles stimulated the initiation of the mechanisms described in the model. In the context of the presented model, it was the process of network creation that made the projects different. Initially, the contacts between Company X and SAP concerned SAP Net weaver platform. Joint projects, initiated mainly by IT department of Company X, led to launching SOA strategy (Service Oriented Architecture), on SAP Net weaver platform. The cooperation resulted in the joint presentation of implemented solution during Polish part of "SAP Net Weaver Technology Tour"and the description of the success story in SAP Info Magazine. At that time, though, both

Table 1. Main parameters of analysing projects

CHARACTERISTIC	SAP	IBM
DURATION	05.2009 – 05.2010	since 2008
PROJECT MANAGEMENT METHOD	Extended ASAP (SAP's standard implementation method)	The elements necessary for monitoring of the implementation process and communication compatible with Prince2
PROCEDURAL SCOPE	Basic financial and accounting operations, approximately 15 processes	Chosen processes belonging to the main activity of the company and several auxiliary processes, altogether over 10 processes
PROCESS CHARACTERISTICS	Basic accounting processes; standardized; a possibility to use references	Core business processes of Company X. Complex, multi-variant, feeble attempts at standardization
CHARACTERISTICS OF IMPLEMENTATION	Replacement of several functioning systems, fairly complex data migration	Replacement of existing systems, very complex data migration. Support for the newly created areas of activity with the necessity of standardization and formalization of the processes.
TARGET NUMBER OF USERS (FOR THE SCOPE BEING IMPLEMENTED)	Approximately 120	Approximately 120
TARGET NUMBER OF USERS OF THE PLATFORM	200	200
NUMBER OF WORKING TEAMS	7	4
NUMBER OF REGULAR PARTICIPANTS IN THE PROJECT ON COMPANY X SIDE	Approximately 60	Approximately 50
NUMBER OF REGULAR PARTICIPANTS IN THE PROJECT ON THE EXTERNAL PARTNER'S SIDE	10	10
INTEGRATION REQUIREMENTS − NUMBER OF INTERFACES	5	2

Source: project documentation.

the burden of running the project and the benefits from it were seen in Company X as concerning merely the IT unit. In reference to the model described in this text, we could say that the external component was rather vestigial, whereas the internal component connected with SAP existed only in the form of a small IT team. The change was brought by the decision about the implementation of SAP ERP, which required significant involvement of people beyond the IT unit and to a great extent complicated the operations in the company. The project was extended during its realization in response to the gaps which were found in the course of the process.

The project spread over new areas, as a result of which, new participants, internal as well as external ones, were included, increasing the complexity of the process as well as the risk involved. In spite of all the modifications introduced during the realization of the project and relatively short time of its realization (about 7 months), the project was completed and the system became a part of IS of Company X. Currently, SAP platform is stable and constitutes a crucial element shaping IS in Company X (for instance, it dictates the standards of documentation, current service, change management) ensuring, at the same time, the possibility of extending the IT support for all the ranges of different processes in the company. Obviously, the achieved level of compatibility was influenced by many factors, which will not be considered in further discussion focused solely on the aspects directly connected with the presented model.

IBM's Maximo platform was introduced to Company X to support the basic business processes. The company had been purchasing equipment from IBM and the cooperation had been going very smoothly. It seemed that introducing Maximo platform would just widen the scope of successful partnership. Launching a new platform for supporting basic business processes required increased participation of the company's employees from business units and the process met a lot of obstacles. There were attempts to solve the emerging problems by means of internal project mechanisms (escalation of the problems to the producer, involvement of the sponsor's authority to encourage the participation of the employees). Nevertheless, the project has not been widely accepted within the company. In case of cooperation with IBM ecosystem, it is very hard to observe the formation of any network or development of any relations. In response to numerous escalations on the company's part, IBM could only offer numerous coordinators and specialists, coming and going. Finally, several functionalities were implemented. The platform functions, not without problems, with one more significant implementation still in progress.

5. Implementation phase of network creation in Company X

A very complex, badly-prepared and centrally run project allowed the insight into the SAP ecosystem. Above all, it revealed the truth about the health of the ecosystem. The responsibility for the implementation was carried by SAP, which both wanted and was able to effectively (meaning "in short time") find and include new competent partners for the realization of subsequent tasks of the project. The wealth and the diversity which the ecosystem offers, generate various possibilities of networking. The table below shows the effects of this process measured by the increase in the number of permanent relations.

Well thought out and well-tried standard method of implementation allowed, with the project still in progress, to create a strong external component of the network (by means of key users and administrators the functional units of the network were connected) and thanks to this fact the project did not remain isolated. A part of

the network built during the project was after mild reconfiguration projected onto the system maintenance structure, creating, thus, an extensive internal component around SAP.

Table 2. Development of client's partner relations of the implementation with SAP ecosystem

Type of partner	Number of relations before the implementation of SAP ERP	Number of relations after the implementation of SAP ERP
Stand-alone consultant	3	6
Small partner	1	3
Medium partner	1	2
Large partner	0	4

Source: project documentation.

When it comes to IBM and its Maximo platform, attempts to activate the network of partners who could support the project turned out to be fruitless. During many years of implementation, thanks to numerous escalations, subsequent groups of IBM specialists from different IBM units were dealing with the project. Soon, the isolation and competition between different units of IBM became evident. Additionally, the project was being hindered by the IBM's uncontrolled complexity in terms of structure, function, project-matrix complexity and formalism. During the whole implementation process, contacts with only two IBM partners have been successfully established.

Unfortunately both Company X and IBM lacked patterns for stimulation of networking around the platform. There were no model organizational roles for Maximo, whereas the endeavours to copy SAP models failed. Neither Company X nor IBM created network structure on which the project could be based which resulted in the isolation of the project. After many interventions, it was possible to implement several isolated functions on Maximo platform. Currently (in 2011) there is one more, relatively big implementation project still in progress (gradually coming to an end). To this day, though, the platform has not created the effective network structure in Company X.

The table below presents the comparison of the chosen features of ecosystems around the platforms which are considered significant for the implementation of the model. The comparison only includes the aspects which clearly differentiate one ecosystem from another.

As a result of the implementation process and Company X's activity connected to SAP platform, a network compatible with the suggested model has been created. The described structure does not constitute constant division of competences on the basis of contract with an external service provider. The created network is based on a stable core team (it consists of inner and outer specialist), its dynamism is to

Table 3. Comparison of chosen SAP and IBM ecosystems in Poland (in the area of ERP software

FEATURE	SAP ECOSYSTEM	IBM ECOSYSTEM
Keystone or dominator?	Keystone, intentional ecosystem construction/formation	Keystone and dominator. Strong rivalry within the company as well as with partners
Development of the ecosystem in Poland	Yes, developed since 1990, variety of partners permits real choice	Poorly developed, most competences and resources involved come from abroad
Predictability	Yes, definite and overt development policy.	Chaotic purchase of tools, inability to convert the tool into the product for customers
Methods of implementation, procedures connected to operation of the platform	Yes, stable, tested method, with instruction for effective construction of the network around the platform	Methods of implementation limited to technical aspects and training, without support for the organization.
Formalism of contacts, the level of stiffness/ flexibility and complexity of the procedures	The customer could omit this inconvenience, transferring the complexity of contacts onto the chosen partner	The burden of carrying out the procedures is eased by transferring this task to IBM employees

Source: own elaboration based on literature and experience from cooperation.

a vast extent determined by its members bringing their own creativity, commitment and the will to learn new things into the maintenance process. Of course, the functioning of the network and effects of the cooperation are monitored, but in practice, there is no need to cite the obligations of the contract. In contrast, the networking process around IBM's Maximo platform remains still in its initial phase.

Obstacles to networking and their consequences

While SAP platform provided us with a positive example of networking, IBM's Maximo platform can offer insight into the aspects which constitute obstacles to the successful completion of the process. The conclusions have been drawn on the basis of the proposed model in rather general terms, without considering the influence of other factors. The main impediment in case of Maximo was the lack of healthy and diversified ecosystem around the platform, which blocked the development of the external component. There were also no models for initiation of network structures around the integrated system which made it impossible to implant the project in the organization's structure (internal component). Additionally, the lack of precise, uniform version of processes in the implementation process resulted in the confusion and lack of effective procedures. All these led to even sharper division into different roles into business, IT, provider as well as to the increase in bureaucracy and control mechanisms which resulted in the deepening of the isolation of the project within the organization and ended in the failure of the undertaking.

Of course, the failure could be assigned to other factors such as the lack of determination on the part of the sponsor, Project Manager's lack of experience,

insufficient resources, etc. In a non-IT company, however, integrated structure projects are not an isolated set of activities, but they constitute a part of its fundamental, regular activity which can be made more effective by means of networking.

6. Conclusions

Although the isolated nature of the case study demands that we are cautious about generalizations, the examples described in the text demonstrated the effectiveness of networking in many aspects of activity around IS. That is why the issue is worth considering in the wider context, to display the significance of the assumptions made in this research and to describe the working of such a model. It could be a springboard for constructing a more general approach.

From the perspective of the management mechanisms the created network reduces certain organizational frames (e.g. formalization, extensive control mechanisms) and thanks to loosened structures (one can act according to different scenarios, not according to an imposed sequence of steps) increases the flexibility and effectiveness of self-organization (individual characteristics of an employee can be utilized). It needs to be emphasized, though, that the effective implementation of the suggested model of network creation was made possible thanks to specific characteristics of the analysed case. First of all, as pointed out by [Iansiti, Levien 2002], in the ITC domain there exist a great range of various ecosystems. Secondly, Company X is a non-IT company and IS is not a source of competitive advantage. Thus, when creating the network, there were no additional barriers connected to competition: keeping the company's solutions secret, pressure on sophisticated solutions that would put the company ahead of all others in the market. The employees of the IT unit also fulfil an important function. As demonstrated in Jemielniak's research [Jemielniak 2008, p. 75] in which he juxtaposes bureaucracies with professions, the effect of dynamic compatibility between the system and the company is often attained thanks to some characteristics of the cooperating specialists. Also specificity of activities performed around IS is important. The implementation project does not constitute an isolated, stand-alone activity. It is preparation of the subsequent part of IS for exploitation. Therefore, on the one hand, it is easier to receive the support from organization, and on the other, to transfer the successful methods to the organization.

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ZASTOSOWANIE PODEJŚCIA EKOSYSTEMOWEGO I SIECIOWEGO PRZY TWORZENIU ZINTEGROWANEGO SYSTEMU W FIRMIE

Streszczenie: Artykuł opisuje sposób budowania zintegrowanego systemu informatycznego w firmie nieinformatycznej, opartego na ekosystemach sieciowych wytworzonych wokół dużych platform informatycznych. Zaprezentowane studium przypadku pokazuje wpływ usieciowienia na efektywność utrzymania, wykorzystania i rozwijania zintegrowanego systemu informatycznego w firmie nieinformatycznej, rozwijanego na bazie dwóch dużych platform informatycznych.

Słowa kluczowe: ekosystemy biznesowe, sieci wewnątrz- i międzyorganizacyjne.