PREMISES OF USING INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) IN COMMUNICATION WITH STAKEHOLDERS: RISK MANAGEMENT PERSPECTIVE

Jacek WOŹNIAK[*], Wioletta WEREDA[**]

Abstract. *The ICTs functionality determines the way of implementing various management functions. Today, basically almost every enterprise uses specific ICT technologies, even simple and with low functionality. This is mainly due to the necessity to improve and support information resource management processes, which are of particular value in contemporary socio-economic conditions. ICTs are therefore a pillar of the company's communication processes with different classes of stakeholders. In turn, in the processes of communication, the risk management processes become particularly important. This is due to from the fact that specific risk areas determine the specificity of communication processes with stakeholders and applied ICT technologies. The research scope is the compilation of both communication and risk management processes conducted by the NewConnect enterprises. The research objective is to identify basic premises of using ICTs by NewConnect enterprises in communication with stakeholders in a framework of risk management processes.*

Keywords: Information and Communication Technology (ICT), Stakeholders, Risk, Management.

1. Introduction

Information and communication technologies include computer hardware (computers with software) and computer networks (communication systems using, among others, Internet technologies) [1]. ICTs are currently widely used in management processes in various types of business entities. Practically speaking, in principle no modern enterprise is

[*] Military University of Technology in Warsaw Faculty of Cybernetics, Institute of Organization and Management, jacekj.wozniak@wat.edu.pl

[**] Siedlce University of Natural Sciences and Humanities, Faculty of Economic and Legal Sciences, wertedawioletta|@tlen.pl

able to operate efficiently and without specific (even simple) ICT technologies. The ICTs functionality determines the way of implementing various management functions. Without the correct integration of various (simple or technologically advanced) ICTs with basic and auxiliary processes, it is difficult to achieve the set goals in set conditions, e.g. time, cost, reliability, quality etc. Key elements of the said integration are the processes of communication between individual process implementers.

In the processes of communication between enterprises and stakeholders, risk management processes become particularly important, which on one hand indicate which factors (positive and negative) affect business processes and communication processes, and on the other determine the basic actions to be taken to either neutralize factors negative or constructive use of positive factors – in the context of ICTs implementation and application.

The research scope is the compilation of both communication and risk management processes conducted by the NewConnect enterprises. The research objective is to identify basic premises of using ICTs by NewConnect enterprises in communication with stakeholders in a framework of risk management processes. The research tools are the Individual In-Depth Interviews and cognitive maps.

The article consists of five main parts, which in turn concern: (1) the role and place of ICTs in the processes of enterprise communication, (2) identification of the leading risk areas related to the company's communication processes with stakeholders, (3) methodology of the research, (4) empirical results of the research, as well as (5) discussion and conclusions.

2. ICTs in communication processes

Communication processes are both the basis for the implementation of processes, and define the conditions and rules for the use of specific ICTs, as well as are improved as a result of the use of these technologies [2]. What's more, the processes of communication in enterprises using ICT are associated with the identification of specific opportunities (in the form of organizational and business benefits) and threats (in the form of potential material-financial-intellectual losses) [see: 3, 4, 5]. Information and communication technologies, through improving communication mechanisms between process providers, are able to determine the creation of added value for the company's stakeholders (internal and external) [6]. It

is possible, among others through [on a base of: 7, 8, 9, 10, 11, 12, 13, 14, 15, 16]:

- providing an access to the information resources for relevant entities (employees);
- supporting the processes of identification the information needs of the enterprise, data acquisition, collection and processing (e.g. aggregation, exploration, visualization), updating data and information, forecasting, as well as knowledge creation and diffusion;
- the information and managerial/process integration of the enterprise;
- the formalization of the core business processes, as well as increasing the reliability of the decision-making processes;
- raising the "intelligence" of the enterprise by sourcing the knowledge repository, as well as increasing its flexibility (agility).

In the processes of communication between the company and its stakeholders, ICT can be used, among others on stages of [on a base of: 17, 18, 19, 20, 21]:

- identification, specification and evaluation of the sender's and recipient's attributes – it is necessary to take into account: (1) knowledge acquisition processes and participants in communication processes (stakeholders) with special regard to their needs, possibilities, limitations, requirements, knowledge, professional competences, etc. and (2) the role and importance in the communication processes from the point of view of achieving the goals of the company and its stakeholders;
- identification of channels of communication, their evaluation and increase of capacity – it should first of all take into account the basic bottlenecks in communication processes, indicating what information resources should be made available to individual recipient classes (asymmetry of information), as well as supporting processes transmission of data and information and their operational processing;
- identification of information needs of the sender and recipient of the message – based on the analysis of the history of events;
- analysis of the context of communication processes – especially in the aspect of identifying specific patterns of stakeholders' actions and trends taking place in the environment, e.g. increasing interest of certain stakeholder classes in accessing knowledge resources,

sharing knowledge or implementing specific ICT technologies in the company's information system (also in the area of increasing the information integration of the enterprise with stakeholders);
- identification and analysis of the conditions of the feedback processes (from the recipient to the sender), as well as increasing the efficiency of knowledge creation processes, e.g. as a result of increasing the information integration of the enterprise with stakeholders and supporting the diffusion of knowledge.

Nowadays, the basic directions of development of ICT technologies are [22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32]: Internet of Things, Cloud Computing, Big-Data systems, data exploration systems, mobile technologies, Wi-Fi, as well as Web 2.0 technologies. Of course, only the basic directions of ICT development are indicated above. It is worth emphasizing here that specific ICTs support the functioning and communication of enterprises in sharing economy conditions [33], among others in the scope of: (1) sharing knowledge resources or access to specific knowledge repositories available to individual process participants (company stakeholders), and (2) using ICT to share material resources (in this case ICT becomes a meta-resource, which describes other resource classes that the company shares, e.g. means of transport, machinery, manufacturing employees, managerial staff etc.).

3. Risk areas in communication processes with stakeholders

In order to identify the basic areas and activities related to risk management in the processes of communication of contemporary enterprises, attention should first be paid to the specificity and dimensions of communication of entities with different classes of stakeholders located in the environment (Tab. 1). It results from the fact that the dimensions of communication indicate which areas of activity are crucial from the point of view of effective, planned and efficient implementation of goals (both short- and long-term). Thus, it is possible to determine the basic risk classes that are associated with the entry of enterprises in relations with stakeholders [34], as well as actions that enterprises should undertake in order to counteract the threats and take advantage of opportunity factors.

Table 1.
The communication dimensions with stakeholders
[on a base of: 35, 36, 37, 38, 39, 40, 41, 42].

Communication dimensions	Examples
The internal organizational environment and market area	
Market	Cooperation with stakeholders in the field of identification, implementation and development of services important from the point of view of e.g. the functioning of local communities or commercial clients, as well as creating new market needs.
Financial	Acquiring funding/co-financing for the start-up and/or development of service activities.
Intellectual	Applies to acquiring knowledge resources from external specialists (e.g. as co-organizers or control units of innovative projects/initiatives).
Structural	Shaping the principles of team work, e.g. reconfiguration of the organizational structure through including individual projects/initiatives of entities/external employees, including specialists in the field of environmental protection, finance, culture, etc.
Tangible & infrastructural	It is connected with the development of technical infrastructure (e.g. office rooms, machinery park) and acquisition of materials necessary for the implementation of innovative services.
Relational	Shaping lasting relationships with stakeholders (e.g. on the basis of systematic project financing, or information and human resources).
The general environment area	
Economical	Refers to the interaction and location of enterprises and entire industries in the country's economic system, as well as the use of financial support from international organizations, e.g. from the European Union.
Cultural	It is connected with the response of enterprises to changes in the purchasing behavior of clients/local communities and the general level of "development" of culture in a given location and its development needs and possibilities.
Regulations	Concerns the adjustment of enterprises to changes in the law, e.g. in the field of labor law, freedom of economic activities, protection of the environment, protection of the intellectual property, etc.
Technological & technical	It is connected with development trends and the use of modern ICT technologies in conducting business activities, knowledge management and shaping relations with stakeholders.

The leading dimensions of business communication are the stakeholders:

1. financial dimension – related to the implementation of the main commercial activity of enterprises, i.e. seeking effective sources of financing processes, generating profits and ensuring liquidity;
2. relational dimension – regarding the need to include external entities in the company's management processes (e.g. in order to obtain financing and information resources from partners, competitors, clients etc.); it is also important to create and develop by companies "social" business models (e.g. using crowdfunding and crowdsourcing), as well as to take care of the development (in terms of sustainability) of local communities or entire cities; The company's search for market niches and the use of public support for innovative and "forward-looking" entities is also crucial here;
3. structural dimension – related to the functioning of the enterprise in network systems, e.g. clusters and strategic alliances; it is important in this case to design a proper internal configuration in the company, based, for example, on teamwork and design;
4. regulatory dimension – enterprises from various industries and sectors are obliged to comply with the law.

The other dimensions listed in Table 1 are to some extent derivatives of the above-mentioned leading dimensions and result from their implementation. For example, the market dimension is determined by the specificity of economic, financial, regulatory, relational and cultural dimensions. In turn, the intellectual dimension is conditioned by the following dimensions: structural, market, cultural as well as technical-technological and communication. At this point, it is worth paying attention to the special role and importance of globalization and glocalization processes [43], which constitute a kind of socio-formal "matrix" for the development of cooperation between contemporary enterprises.

The dimensions of cooperation specified above are the basis for identifying key risk classes, especially in the area of implementation of innovative processes. The basic risk classes can be included here as [see also: 44]: financial risk, operational risk, regulatory risk, personnel risk, market risk as well as configuration risk. Examples of specific risk areas for the above-mentioned basic communication dimensions of enterprises are presented in Table 2.

Table 2.
The example risk areas for the leading communication dimensions with stakeholders (own study).

Communication dimensions	Example risk areas
Financial	Too much financial effort; high costs of employees' acquisition and communication; lack of adequate financial resources and financial liquidity in the area of communication; too high ICTs' costs, the need to increase the budget for communication and innovation.
Structural	The instability of the workforce (impermanence of employment); forcing the adverse conditions by larger companies as customers; frequent market changes; impermanence of network structures/clusters; lack of trust in clusters.
Relational	The "unstable" customers; the withdrawal of the project partner or customer; incompetent and not paying contractors; mistakes in the design of employee teams; high staff turnover and loss of enterprise knowledge.
Regulations	Changes in the law that enforce changes in enterprise's core processes because of the problems in communication (both in the physical and informational approaches); increase in bureaucratic processes in the enterprise; too many unexpected and adverse changes in legislation which block off the efficient communication with stakeholders.

At this point, it should be noted that the examples listed in Table 2 do not exhaust the full catalog of potential risk areas that may exist in modern enterprises as a derivative of the implementation of communication processes with stakeholders.

4. Methodology of the research

The empirical study was conducted on a targeted sample of enterprises operating on the NewConnect market in Warsaw. It is the Over The Counter (OTC) market with the alternative economic turnover, which is organized by the Warsaw Stock Exchange. The NewConnect market was launched on August 30, 2007 [45]. The NewConnect market offers more liberal formal requirements and information obligations than the WSE Main Market, and thus cheaper capital acquisition. NewConnect may be the start of a stock market career for listed companies [46]. Companies listed on the NewConnect markets are primarily characterized by [45]:

- small or medium size (mainly start-ups or young companies);
- high growth potential and flexibility;
- operations undertaken in innovative industries and sectors that reflect market niches;

- a desire to quickly raise capital for development;
- difficulties in obtaining financing for development.

The research scope is the compilation of both communication and risk management processes conducted by the NewConnect enterprises. The research objective is to identify basic premises of using ICTs by NewConnect enterprises in communication with stakeholders in a framework of risk management processes. The research tools are the Individual In-Depth Interviews (IDIs), and the cognitive maps. The other components of the survey methodology are presented in Table 3.

The structure of enterprises included in the IDI survey – in terms of the criterion of the leading business profile – is presented in Table 4. Two entities from each of the following industries were involved in the study: trade, computer science, financial services, manufacturing, as well as building & construction. In general, the surveyed enterprises are classified in three sectors: trade, services and manufacturing. The largest number of entities belongs to the services sector – 5, slightly less to the manufacturing sector – 4, and the least to the trade sector – 2 entities. The structure of enterprises included in the IDI study reflects the structure of the subject activity in the entire population of enterprises operating on the NewConnect market (as at the beginning of the survey, i.e. March 1, 2018).

Table 3.
Methodology of the research (own study).

Components	**Specification**
Entity carrying out the study	Research Institute IPC Limited Liability Company with its registered office in Wroclaw, ul. Ostrowskiego 9, 53-238 Wroclaw.
Period of study	2 months (March – April 2018).
Scope of study	The whole Poland (16 voivodships).
Respondents	Managers or managers responsible for IT, environment or innovation, employed in NewConnect-listed companies (1 respondent per business).
Criteria for selection of research sample	The criterion of leading business profile. In the IDI research the chosen groups were: trade, computer sciences, manufacturing, financial services, advice and training, building & construction.
Groups of stakeholders	4 groups: internal stakeholders, institutional clients, individual clients, as well as other entities, e.g. external processes' subcontractors, intermediaries, shareholders.
The size of the research sample	$N = 11$ enterprises.
Structure of the questionnaire	The questionnaire included: 11 opened questions.

The study includes nine basic types of ICT used in the processes of communicating with stakeholders, both traditional and modern (Tab. 5). The group of traditional ICTs is included in the study: telephone communication, e-mail accounts, Internet technologies, teleconferences, as well as Intranet and Extranet technologies. However, modern ICTs are: social networks, external memory cases, external messengers, and enterprise's / corporate portals.

Table 4.
Specification of the research sample – IDI research (own study; N=11).

Leading business profile (NewConnect classification)		**Number of enterprises**
Trade		2
Services	**Computer science**	2
	Financial services	2
	Advice and training	1
Manufacturing/ industrial processing	**Manufacturing**	2
	Building & construction	2
In general		**11**

On the basis of IDI interviews, three cognitive maps were developed (based on the material coding of transcripts from interviews), which concern:

- the approach of the surveyed enterprises to communicate with stakeholders;
- major risk factors and relationships between them;
- approach to risk management in the surveyed enterprises.

Cognitive maps were the basis for the identification of hidden cause and effect relationships [on a base of: 47, 48, 49, 50], about which the respondents could not be directly asked, e.g. actions and factors taken into account in the framework of risk management and general risk perception, activities related to the implementation and development of specific ICT technologies or activities undertaken and resources used in the processes of communicating with stakeholders. It is worth emphasizing here that such issues are crucial in identifying the premises of using ICTs by the surveyed enterprises in the context of risk management.

Table 5.
Basic ICTs used by surveyed enterprises in the communication processes (own study).

ICTs' class	Basic ICTs used by surveyed enterprises
Traditional	Telephone communication; e-mail accounts; Internet technologies; teleconferences; Intranet and Extranet technologies.
Modern	Enterprise's/corporate's portals (personalized user accounts); external messengers, e.g. Gadu-Gadu, GTalk, Hangout, Skype etc.; external memory cases, e.g. for storing and sharing documents; social net-works, e.g. Facebook, Google+, LinkedIn, Twitter etc.

The cognitive map consists of the following elements: (1) nodes, i.e. factors, (2) marked directional arrows, i.e. arcs, as well as (3) causality coefficients, which determine the strength and type of influence on each other (positive influence is indicated by "+", And negative "–", while the strength of influence is determined by the thickness of the arc: thin dashed line – weak influence, thin solid line – medium impact, thick solid line – strong influence) [51]. The basic functionalities of the cognitive map as a research tool are as follows [on a base of: 52, 53, 54]: determination of the impact of factors on themselves (identification of not only direct but also indirect impact), holistic view on specific issues, application of quantitative (econometric) or qualitative (expert opinions), identification of problems in the enterprise (scientific case study), as well as specification and improvement of information and decision-making processes in this enterprise.

5. Results

The surveyed enterprises, despite the fact that they are, by definition, innovative, progressive, willing to take risks and focus on building complex and multi-faceted relationships with the environment, are not fully inclined to use large-scale and high-tech telecom technologies in communicating with various stakeholder groups (Tab. 6). In most cases, enterprises use simple and public solutions/technologies, available globally and offered by global suppliers. Companies tend to develop their own solutions that support the processes of communicating with stakeholders much more rarely – if they do, they are either simple communicators and databases, or complex IT systems, e.g. for the documentation and data analysis on logistics processes. The basic stakeholder groups for which ICTs are implemented are customers and employees. This situation may

come as a surprise, because such groups of stakeholders as investors, shareholders, government administration agencies, or local communities and business partners are basically marginalized in respondents' statements. The surveyed enterprises are listed on the NewConnect market (within the Warsaw Stock Exchange), thus they are participants of the capital market.

The surveyed enterprises lack a noticeable attitude to the implementation and development of modern communication technologies with stakeholders. First of all, traditional and well-known technologies are used, which do not generate problems in the current operation of employees. In this way, enterprises strive to reduce the technological risk. Simple and proven ICTs are more predictable and safe, even if they do not generate above-standard organizational and managerial benefits for the managerial staff or owners. This state of affairs may also result from the size of enterprises (the study is dominated by small and medium-sized entities) and the scale of their business (local or national). So there is no need to "keep up with" global standards in the field of ICTs modernity.

It is also worth noting that IT outsourcing (external servers, cloud computing, etc.) is quite commonly used in the surveyed enterprises (Tab. 6). As a result, it is possible to limit the costs of applying certain ICTs and at the same time increase the effectiveness, efficiency and flexibility of the communication processes with key stakeholders. Thus, the surveyed enterprises use the experience and potential of external entities in improving the processes of communicating with stakeholders. Such an action may also (but does not have to) neutralize specific categories of risk factors, e.g. related to enterprise information integration, the use of advanced analytical methods to match market offers to customer needs, and storing and protecting stakeholder data.

Taking into account the specificity of the approaches of the surveyed enterprises to the processes of communicating with stakeholders, it can be seen that activities related mainly to (Fig. 1) have the greatest impact on their implementation:

- implementation of IT outsourcing and simultaneous development of own ICT infrastructure;
- development of the website and instant messengers;
- acquiring global technologies;
- ensuring high quality processes of communicating with stakeholders,
- implementation/purchase of modules/systems dedicated to the given enterprise;

- implementing solutions supporting operational management;
- lengthening communication channels and increasing their complexity.

Table 6.

General approach to use the ICTs in communication processes (own study; N =11).

No.*	Branch/sector	General approach (opinions of respondents)
E1.	**Financial services**	"ICTs are used in ongoing work and communication with external stakeholders and employees. First of all, these are technologies: e-mail, website, online contact form with clients, simple relational databases and office packages. We use electronic document flow".
E2.	**Manufacturing**	"We primarily use tele information technologies for conversations with clients and for bank transfers. In principle, we use them for everything. We use, among others e-mail accounts, spreadsheets, instant messengers and a website. We do not use specialized internet applications, in-house databases and information flow technologies".
E3.	**Trade**	"ICTs are used in establishing relationships with employees. We mainly use e-mail accounts. In communication processes, we use rather simple, ordinary tools that are commonly available. We have customer databases on external servers, thanks to which we can process historical data and manage customer relations. We have developed our own IT system that we use in the processes of communicating with clients and employees".
E4.	**Advice and training**	"In the processes of communicating with clients, we mainly use e-mail accounts, website, online form, etc. We also use cloud computing technology – for all kinds of contacts with employees. We use both advanced and simple ICTs. In dealing with clients, we also use databases, replenished every day".
E5.	**Manufacturing**	"We use ICT technologies on a wide scale, practically in every aspect of our company's operations and in communicating with different classes of stakeholders. Most often, we use relatively simple technologies, e.g. one-dimensional databases. In communicating with stakeholders – mainly clients – we implement and develop technologies that are both generally available on the market and dedicated to our company".
E6.	**Computer science**	"Information and communication technologies are strictly related to the profile of the company's operations. We mainly use ICTs when dealing with employees and major clients. We create our own software, mainly for the purpose of communicating with employees – they are simple solutions, e.g. communicators".

No.*	Branch/sector	General approach (opinions of respondents)
E7.	**Building & construction**	"We mainly use such technologies as: e-mail accounts, fax, Internet, website, mobile phones with Internet access. ICTs really help our company to function today. They certainly simplify them and reduce operating costs – including by improving the communication processes with stakeholders that are cheaper. We mainly use simple ICT technologies, but we also have an implemented warehouse system that improves communication with suppliers and customers".
E8.	**Building & construction**	"ICTs are mainly used to communicate with employees and potential clients. We mainly use instant messengers and websites. We mainly use simple, technologically advanced solutions".
E9.	**Computer science**	"We use ICT primarily to send e-mails, because it is very fast and practical contact with our clients and business partners. We also use the website. When dealing with employees, we use our own communicators – employees praise it. We use simple applications and spreadsheets as well as complex IT systems".
E10.	**Financial services**	"Information and communication technologies are needed for contacting the companies we serve, external advisors, tax office and social insurance office. We use simple ICTs that we support via the Internet, e.g. instant messengers, spreadsheets, e-mail accounts".
E11.	**Trade**	"We mainly use ICTs to be able to quickly communicate with the client. We use these technologies, which are the most popular on the market today and are used by young people in the 24/7 mode. We mainly use e-mail accounts and online forms. This is the most secure and fast form of contact with our clients. Although our company is large, it has a huge reach, we use the simplest technologies because they reach all customers".

* The names of the surveyed enterprises (E) cannot be given to the public information.

However, it should be emphasized that not all of the above activities may have a positive impact on the development of the communication system of enterprises with stakeholders. An example can be here, among others lengthening communication channels and increasing their complexity (Fig. 1). This results in lowering the efficiency of information and decision processes (e.g. as a result of acquiring too many data and information from cooperators and impossibility of their efficient processing, as well as the emergence of so-called information "noise" resulting in the creation of "false" knowledge. It is a particularly important problem area, because information and decision processes positively

influence the strengthening of relationships with clients and employees of the enterprise.

An interesting example of a negative impact on the development of communication processes with stakeholders is the implementation of simple ICTs. This is related to the fact that such activities, despite the increase in the costs of obtaining and maintaining technology, to some extent limit the development and quality of IT infrastructure (Fig. 1). In this way, the company creates a low-functionality infrastructure that is unable to meet the new potential challenges in the field of information and decision-making processes and communication. What's more, the development of IT infrastructure conducted in this way limits the development of strategic management – instant messaging, forms, spreadsheets, etc. are not able to meet, among others, the requirements of strategic planning and support in the long-term development of the company.

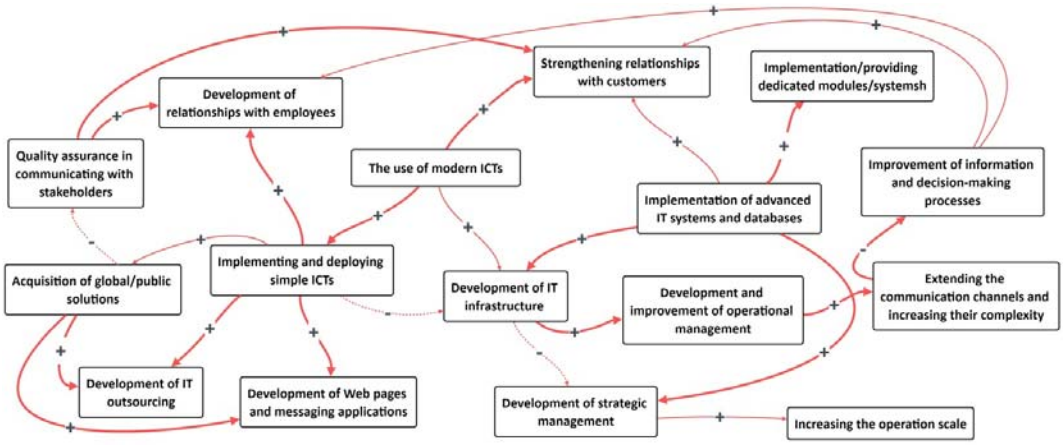

Figure 1. Cognitive map # 1 – the leading approach to communication with stakeholders (own study; N =11).

At this point, it is also worth referring to the problem of acquiring technologies available globally and strongly standardized in terms of functions (offered by global suppliers). This type of activity may cause a decrease in the quality of communication processes with stakeholders, including as a result of the lack of adjustment of these technologies to the needs, capabilities and requirements of both the company and individual stakeholder groups. Thus, in the communication processes appears so-called "information gap" or "knowledge gap".

Considering the problem of basic risk factors related to the functioning of the surveyed enterprises, it can be seen that they mainly concern (Fig. 2):

- increase of production (processing) capacity and implementation of innovative processes;
- obtaining and processing data on clients and contractors;
- ICTs functionality and optimization of information and decision-making processes;
- increase in the costs of implementing and maintaining ICTs and operating activities;
- creating the brand image among various stakeholder groups;
- managing dependencies on contractors.

The most important positive risk factors (including opportunity factors) in the surveyed enterprises are: outsourcing of innovative processes (R&D), acquisition and analysis of data on stakeholders, increase in the value of the brand, as well as the expansion of the functionality of the ICT technologies used. In turn, the most important negative risk factors (including threat factors) are: problems with protection of intellectual property and personal data, increase of IT outsourcing costs, volatility (instability) of the market, as well as low solvency of contractors (Fig. 2).

The following factors have the strongest (positive) impact on strengthening and maintaining the market position of enterprises: intellectual property protection, increase of the brand's value and its recognition on the market, data analysis and creation of knowledge, as well as the effectiveness of implementing ICT technologies. In turn, a strong negative impact on strengthening and maintaining the market position has a factor related to the low solvency of counterparties (Fig. 2).

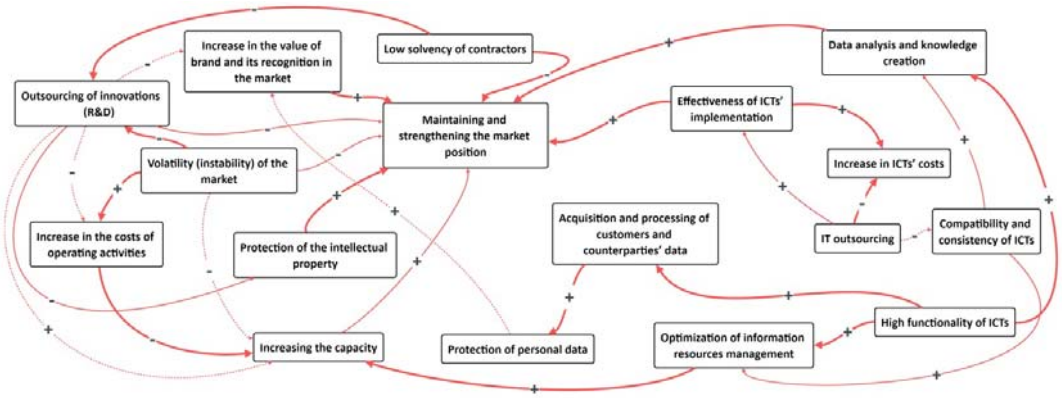

Figure 2. Cognitive map # 2 – the main risk factors and relationships between them (own study; N =11).

In general, it can be noticed that the risk factors indicated by the respondents concern the following problem areas:

- knowledge resources, implementation of ICTs, intellectual capital and innovative processes;
- management of information resources, with particular emphasis on data acquisition;
- market changes, financial resources management and the brand/company value;
- entering the network activity structures (including through the implementation of outsourcing);
- regulatory changes, mainly in the aspect of personal data protection and patent protection.

The risk factor that exerts the negative influence on other factors is the volatility (instability) of the market – it can negatively affect the following factors: innovation outsourcing (R&D), increase in operating expenses, production capacity (volume), and creation of a strong market position. Another example of dominating negative factors are IT outsourcing, outsourcing of innovative processes and low solvency of contractors (Fig. 2). It is also worth noting that the risk factors listed above belong to the leading risk classes related to the core business of enterprises, as well as the implementation of information and decision-making processes and communication with stakeholders.

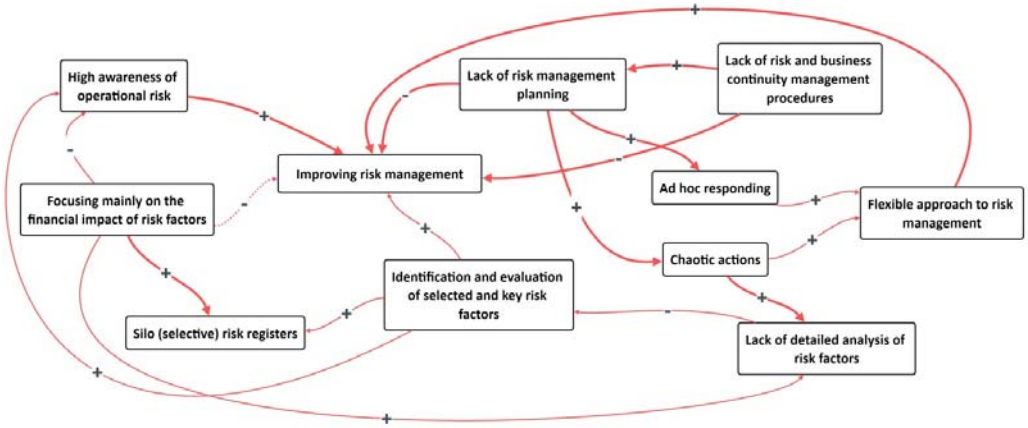

Figure 3. Cognitive map # 3 – the leading approach to risk management in surveyed enterprises (own study; N =11).

Taking into account the specificity of risk management processes in the surveyed enterprises, it is worth noting that (Fig. 3):

- risk management is simplified, mainly related to the processes of identification of basic (key) risk factors, as well as ad hoc response

to emerging risk factors (changes) inside the enterprise and its environment;
- risk management is silo/fragmented but not integrated/holistic.

The activities exerting the strongest positive impact on improving risk management processes are: high operational risk awareness and ad hoc response and the application of a flexible approach to risk management. Activities that exert the strongest negative impact on improving risk management processes are: lack of planning, lack of risk management procedures and assurance of business continuity, lack of detailed analysis of risk factors, as well as concentration mainly on the financial consequences of risk factors (Fig. 3).

6. Discussion and conclusions

By juxtaposing the three cognitive maps described above, it can be seen that:

- despite a simplified approach to risk management, the surveyed enterprises undertake activities in the area of identification of key risk factors – thanks to which it is possible to determine the main areas of improvement of communication processes with stakeholders; such areas in the case of the surveyed enterprises include, among others: market relations with clients and cooperating entities, creation of knowledge and innovative processes, financial management;
- due to the silo approach to risk management processes and the necessity to undertake fragmentary activities, the analysis of data and information is of particular importance – it is one of the basic premises for the use of ICT in the processes of communication with various stakeholder groups; it is worth mentioning here the reduction of the costs of business processes and increasing the financial effectiveness of communicating with stakeholders as a result of using specific (also traditional) ICTs;
- an important premise for the implementation of ICT is the provision of protection to the acquired, processed and transferred information resources to particular stakeholder groups – this is of particular importance in the case of the surveyed enterprises entering network structures, e.g. through the use of innovation and IT outsourcing;
- a simplified and operational approach to risk management and focusing only on key risk factors creates a convenient "environ-

ment" for using only simple and traditional ICTs; therefore – the specifics of the risk management system determines the needs and requirements of the company with respect to the functionality of the ICTs used;

- application of a "chaotic" approach to risk management requires reducing the "information overload" of the company, hence the excess of data and information – for this purpose it is necessary to implement technologies that increase the patency of communication channels (e.g. web forms and e-mail accounts);
- wanting to develop relationships with clients and employees – while "rejecting" planning processes in risk management – it is necessary to systematically develop the ICT infrastructure, even for simple and cheap technologies; this is mainly due to the fact that the requirements and needs of these groups of stakeholders are constantly evolving and changing along with the conditions of the environment; therefore, if you want to match the offer (e.g. commercial) and the form and content of messages, it is necessary to improve the quality of knowledge creation, shorten the information flow time and understand the stakeholders' needs/preferences regarding the use of ICTs and ensure that the company matches these needs/preferences.

To sum up, the basic premises for the use of ICT technologies by the surveyed companies from the NewConnect market in the processes of communicating with stakeholders relate primarily to the financial aspects of the functioning of these enterprises, and focus on operational management. The shaping of determinants for innovative processes and the creation of network structures is also of particular importance here. The necessity of implementing and developing ICTs in the surveyed enterprises is determined by market changes to which enterprises must adapt flexibly. It should also be emphasized here that the use of ICTs is determined by the specificity of risk management processes and the general approach of enterprises to identifying and understanding risk factors.

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