RISK, INFORMATION AND THEIR MANAGEMENT

Marie Černá

INTRODUCTION

In connection with new findings, which were noticed in the twentieth century, an industrial society was gradually transformed into an information society and further into the knowledge-based society. As was written in [7]: “Current population is known as “knowledge-based society”.” The terms “knowledge” and “knowledge-based society” are used quite often in connection with researches that are currently done by many institutions. Due to the fact that knowledge is generated by transforming information, one can consider that research in the field of knowledge and issues associated with them still remains attractive.

1 RISK

Risk is a term mentioned in many types of literature. This word of Italian origin was used in connection with shipping and later also in other branches like mathematics (the likelihood of winning at gambling and boat insurance). As the courage to take the risk or the possibility of loss was this word used later. Currently, we see risk usually as the possibility of loss or as a failure in implementing an operation.

We don´t have the only definition of risk. Literature offers many different types of such definitions. According to [9], risk can be defined as: “possibility of loss or injury; someone or something that creates or suggests a hazard; the chance of loss or the perils to the subject matter of an insurance contract; a person or thing that is a specified hazard to an insurer; an insurance hazard from a specified cause or source; the chance that an investment (as a stock or commodity) will lose value.”

The second one, used in [10], defines risk from the information technology expert point of view. It is actually the definition of information risk.

“Information technology risk, or IT risk, IT-related risk, is any risk related to information technology. This relatively new term due to an increasing awareness that information security is simply one facet of a multitude of risks relevant to IT and the real-world processes it supports. Generally speaking, risk is the product of the likelihood of event occurring and the impact that event would have on an information technology asset.”

If we talk about risk, we usually mean something negative by this word. The risk has two aspects: negative and positive. The first possibility was described above and the second one represents the fact that risk can be seen also as a positive thing, as an incentive or an opportunity to find better alternative solution of any problem. During all activities that we perform, we can identify different types of risks. The risks can be classified differently. Used type of classification depends on the author’s point of view. Some of the possibilities that are mentioned below were selected by the author from available literature.

Classification of the risks:
- Internal and external risk.
- Subjective and objective risk.
- Frequently occurring and rare risk.
- Financial and non-financial risk.
- Static and speculative risk.
- Stable and instable risk.
- Financial risks, security risks and environmental protection risks, risks of information systems, project risks, etc.
- Business risks, financial risks, risks of the management of human capital, property risks, IT risks, risks in science and research, corporate governance risks, etc.
- Financial risks, operational risks, risks connected with management, risks connected with internal and external environment, risks connected with transactions, information risks.
- ...

If we focus on information risks (IT risks), we can divide them further to:
- Risks connected with the possibility that the quality of information will be threatened.
- Risks connected with the possible loss of information.
- Risks connected with the mistake while working with information.

2 RISK MANAGEMENT

Definitions of risk management can be found in many professional publications. Risk management should become commonly performed activity used not only by large companies, but also by the small and medium sized enterprises. Not every client is the client, with whom everyone wants to cooperate. That is the reason, why we need to collect information that could help us to avoid cooperation with possible future inconvenience and losses. This issue is not the only one risk management deals with. Risk management examines risks and their management in many areas of human activity. It consists of several parts:

- Risk analysis, which is further divided into:
  - Identification of assets, determination of the value of identified assets, identification of threats and vulnerabilities, and determination of the significance of threats and level of vulnerability.
- Risk assessment.
- Treatment of risks.

Risk analysis represents the identification and assessment of factors, which could threaten the individual actions carried out by the company. It consists of the identification of risk factors (risk sources), development of the scenarios, determining the probability and the consequences of the effect of risk factors. The analysis of costs connected with any undesirable event is usually a part of risk analysis. This phase of risk management process forms the basis of risk management. The term “risk analysis” is connected with terms like asset, value of the asset, threat, probability of threat, vulnerability, precaution and risk.

The asset represents for the company everything with the value that can be influenced by the risk factor. Information risk management deals with the information as if it was the asset of the company. Value of the asset is its basic characteristic. Threat represents the condition, which can cause loss or which can negatively influence the safety of asset. The probability of its occurrence is always examined. Vulnerability is seen as a security weakness in the company that is not itself the reason for loss, but it enables threat affecting an asset. Precaution is then everything that was proposed to reduce the impact of threats. Risk is defined using many different ways and its calculation is made using various formulas like for example the one used in [1]. Symbols used in this formula are:

\[ R = a \times h \times z \]

Another formula, described in [8], is used directly for calculating the information risk, where:

\[ \text{Information Asset Risk} = C \times I \times A \times (T \times V) \]

The phase of risk analysis is followed by the risk assessment. Output of this phase should be the list of risks that describes, which threat can influence risky assets, how does the level of vulnerability look like and which financial impacts are under consideration. The final phase of risk management process, which is called "treatment of risks", represents designing activities leading to the elimination of risk or at least to reduction of its frequency. The risk report is prepared and then distributed to the managers and to workers, who will be entrusted with the implementation of proposed measures.

The structure of risk management process introduced above is prepared by the author using the documents referred to in the literature that deals with this issue. Another possibility how to divide the risk management process is described in the following picture adapted from [2].
Accurate and correct implementation of all phases of risk management is necessary, if we don’t want to solve future problems that we probably could avoid in a case of faultless implementation of each phase of risk management mentioned above.

3 INFORMATION

Information represented and still represents scarce and important asset for the companies. It is always necessary to know how to treat it. It represents the base for all decision-making processes that take place inside the company and influence adjustments in the settings of existing processes and the ways for setting up the new ones. This will also contribute to success or failure in achieving the goals set by the company.

"Information could be seen as data, whose meaning is given by their recipient using his available knowledge; information represents the result of recognition and thinking that re-initiates creative thinking and acting. Information can be seen as the source with specific characteristics - in contrast to other sources that are fully consumed during the application process, information represents the renewable source that even generates itself." [3]

Companies should be able to ensure the security of information and to work with those risks that can occur in connection with collection, storage or mediation of information. Such risks are usually called information risks (IT risks). If we talk about this type of risk, we usually describe the risks connected with the security of information, less often are mentioned risks connected with "soft factors" that are represented for example by the recipient’s state of mind, or his ability to decode the information correctly (to understand its original meaning).

Risk and risk management is very extensive issue connected with number of other areas researched by different scientific disciplines. The relations between risk management and disciplines like project management, information management, etc. have been researched and described - e.g. in [6].

4 INFORMATION MANAGEMENT

The universally accepted definition of information management doesn’t exist. It may be caused by an ambiguous understanding of the term "management", by an ambiguous understanding of the term "information" or by the effect of the change in understanding the term "information management" during the period since its establishment. This explanation is described in [6] and is still used by many other sources of information related to information management or information risks.

The term "information management" was used for the first time in 1966 [6]. Since that day it passed through three development stages. During the first stage information management was seen as a discipline focused on solving technical problems. The second phase was focused on the efficiency of labor in the economy. This phase is also connected with the first use of the term
"transdisciplinarity" of information management. The last phase focuses on achieving goals of the organization using computing and information systems and applications of information technologies.

Information management, in its current concept, is relatively new developing discipline, which needs to find its position between other existing disciplines. It has become an integral part of business management activities. It seems that the information management is a discipline, which is described and well known by the managers of the companies. Reality doesn’t look like that. If you ask managers or other executives of small or medium sized enterprises, whether they ever heard about information management (information risk management), they will most probably say not. The situation in large companies may be different, but it is a question that should be answered by the research different from the one I plan.

CONCLUSION

Information risks belong to those types of risks that are often discussed in connection with the safety of information systems in companies. There are many known sources of information risks, but as was mentioned in different kinds of literature, human factor can be seen as the most significant one. This indicates that "soft factors" connected with information risks should represent issue interesting for further research. Another problem is the fact that this type of risk is usually studied in relation to disciplines like risk management, project management, human resource management etc. Other disciplines (e.g. accounting) that may cooperate with information management on information risks management are not usually studied. That is why I would also like to find out the relations between information management and such disciplines and describe them in detail, if they really exist.

My future research plans are focused on collecting, analyzing and interpreting information and findings connected with possible cooperation of information management and other rarely discussed disciplines. First step will be preparation of questions for expert interviews that should be made with professionals in the field of informatics and economics in selected small and medium sized enterprises. Then the possible ways to improve the cooperation between such disciplines and the ways to improve management of information risks should be suggested. The findings of proposed qualitative research may be used as the basis for further research in this field.

REFERENCES


Adresa autora (autorů):
Ing. Marie Černá, Západočeská univerzita v Plzni, Fakulta ekonomická, Katedra financí a účetnictví, macerna@kfu.zcu.cz
Abstract
Risks can occur at any stage of the process or the provision of mediation services. It is necessary to be able to solve situations connected with them quickly and effectively using the best solutions provided by risk management. Risks are usually not isolated. We meet them as a complex of different types of risks. Risk is usually seen as a specific threat that can influence assets of the company. Information represents the basis of all decision-making processes. Information also represents the most important and scarce asset. This article describes growing importance of information and problems connected with information management. Those problems are usually solved using the tools of risk management. We use also the help of information management (cases connected with information risks). Currently, the emphasis is put on knowledge, which is closely connected with information. This is the reason why this article proposes research focused on linking information risk management to other business activities.

Key words
Information, Information Management, Risk, Risk Analysis, Risk Management

JEL Classification
M15