RISK MANAGEMENT IN CRISIS SITUATIONS

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Abstract

Risk is considered as a phenomenological variable, which makes that this concept is interesting to investigate in terms of how people understand it. However, if a risk is equated to a threat, it relates mainly to the uncertainty and variability of the specific actions results. A prevention or mitigation system for possible threat effects should be created by taking into account the experience and the dynamics of the threats to safety development at the international, regional, national and local levels. Such a system should be based on the rules of risk management in crisis situations.

Key words: security, risk, management, crisis situation

Threats and uncertainty have always been the part of human existence, and, in the past, this part used to be even greater than it is today. The risk of individuals and their families developing a disease, sustaining a premature death, or societies being decimated by famine and plague, was much greater in the Middle Ages than it is at present. Risk semantics is something quite different. Since the early modern period it has been associated with the growing impact of decisions, uncertainties and probability in the process of modernisation. It concerns future threats, which we can see now, stemming from civilisation's success (Beck, Baran, 2012: 15).

A crisis can be defined as a moment, a period of breakdown, a turning point, a time of economic crisis (Kopaliński, 2000: 282). It is associated with an enduring disruption of the regular and goal-oriented activities, upsetting the functional balance, and even with a threat to one's existence. The basic characteristics of a crisis include the surprise factor, time pressure, late response, a loss of control, a danger to important functions, an increase in tension, and information deficit (Gołębiowski, 2003: 10).

The concept of a crisis is very often equated to the concept of a crisis situation; however, these concepts are not identical and there are significant differences between them:

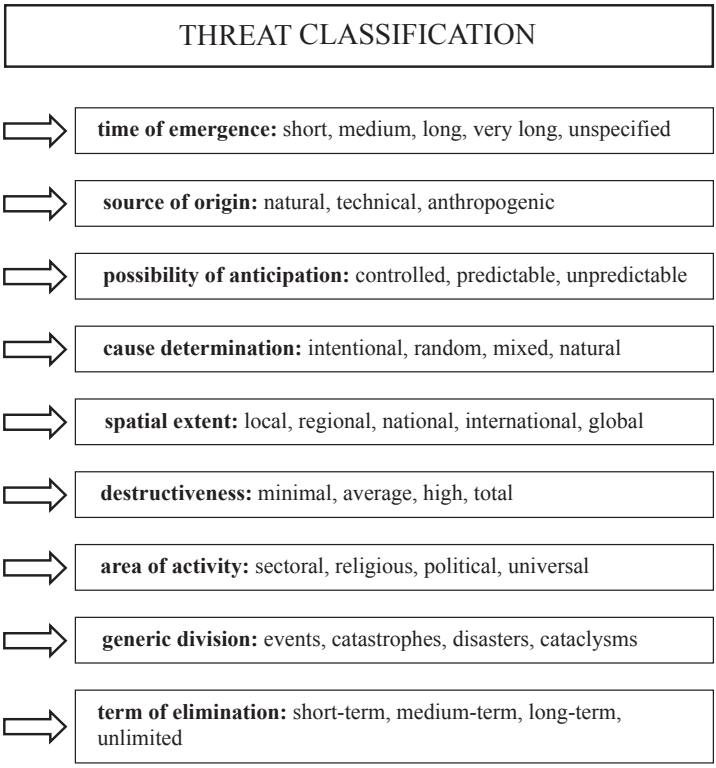
- A crisis is an element of a crisis situation,
- Every crisis is a crisis situation, but not every crisis situation has an element of a crisis,
- The occurrence of crisis symptoms does not have to cause changes to the organisation core, but it poses a challenge for the subjective sense of the operation normality (Kosowski, 2008: 24).

According to K. Krzakiewicz, crisis situations are characterised by the following factors:

- threat of the losses incurrence and the survival of the organisation being in danger,
- loss of control over the ongoing events,
- serious, negative impact on the organisation's resources,
- not enough time to take necessary actions or to react,
- lack of credible information, i.e. the occurrence of uncertainty (Krzakiewicz, 2008: 11-15).
- severity and length of a crisis are conditional on the following factors:
  - correlation between the number and intensity of particular events,
  - number and force of external and internal factors influencing an organisation,
  - intensity of the impact of particular factors on the chain of events,
  - importance of each factor to the organisation's operation (Krzakiewicz, 2008: 11-15).

The taxonomy of threats in crisis management involves the assignment of threats to specific groups, which characterise a given threat. From the perspective of crisis management, not all groups will be prioritised in the same way. While conducting a threat analysis as part of crisis management, the first step is to locate the threat by taking into account its source, and then its destructiveness level and spatial extent (Grodzki, 2012: 71).

Figure 1. Threat classification



Source: Ficoń 2007.

The concept of risk is commonly associated with uncertainty. One of the first authors who made efforts to differentiate between risks and uncertainties was A. Willet. In 1901, in his work titled "The Economic Theory of Risk and Insurance", he presented the economic theory of risk. He based the presented concept on the negation of the randomness of external processes. Willet, being an advocate of philosophical determinism, posited that risk was a measure of the uncertainty degree resulting from an imperfect knowledge of the laws governing external processes. His theory spurred further discussion on the topic of risk and mutual relations between risk and uncertainty (Śliwiński, 2002: 15).

Risk is considered a phenomenological variable, which makes that this concept is interesting to investigate in terms of how people understand it. However, if a risk is identified with a threat, it relates mainly to the uncertainty and variability of the specific actions results. Thus, we have various suggestions concerning distributional risk measures, such as variance, semivariance, standard deviation or variability.

Therefore, it is assumed that we know the distribution probability of selected important environment states with a negative impact on the value of expected action results.

Risk is a function of two variables – the probability of failure and the magnitude of the loss. Probability is also a function of the quantity and quality of information on the economic and social and political processes (Sienkiewicz, 2006: 45).

Risk is an objective phenomenon as it involves real economic phenomena connected with the existence of a threat (danger) stemming from, among other things, the demand fluctuations, the activity of competitors, cooperation conditions, and State regulatory actions. It is also a subjective phenomenon, because it results from the decision-makers' knowledge of economic processes. We are dealing with a risk when the decision results of are not fully known.

In practice, to determine the risk, the following mathematical formula can be applied: **Risk = loss probability x loss value.**

The development of an enterprise involves uncertainties and danger, but it also creates opportunities. Risk management primarily aims at identifying threats and opportunities. The determination of the diversified risk impact extent on the enterprise is of pivotal importance (Kaczmarek, 2008: 11).

Risk management can be defined as a decision making process in a way that ensures the highest level of security by reducing the impact of anticipated factors on the economic entity functioning. Therefore, risk management focusses on the prevention and mitigation of losses.

The concept of risk management should constitute an inseparable part of an enterprise's development strategy. Once drawn up, it will make it possible to plan the organisation's performance taking into account risk factors, and to monitor the extent of the impact of these factors on the broadly-defined financial performance and financial standing (Sienkiewicz, 2006: 45).

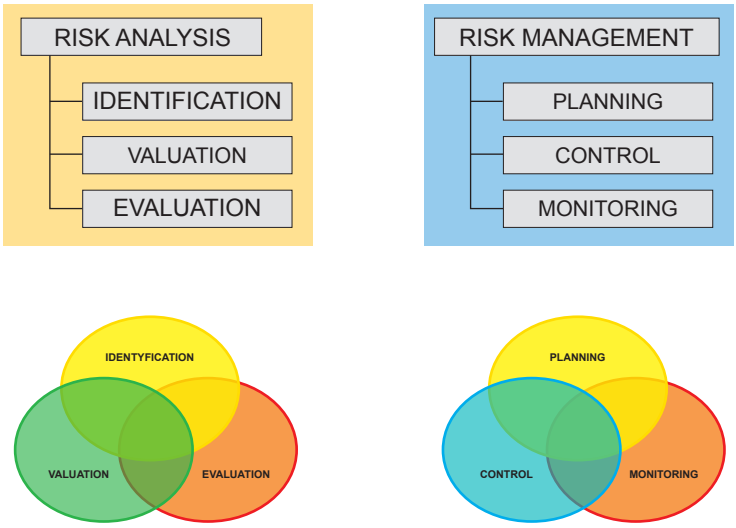
Risk management is aimed at the complete elimination or, at least, the mitigation, of causes and/or the effects of events that can disrupt the organisation's economic processes resulting in a crisis.

There are two phases of risk management:

- Risk analysis (identification, estimation, evaluation)[1]
- Risk management (planning, control, monitoring).

[1] More on the topic: Kaczmarek, Ćwięk 2009: 58.

Figure 2. Phases of risk management



Source: Sienkiewicz 2006: 45.

Risk **identification** is the recognition of all possible risks, including all types of threats, their causes, place and time of occurrence, and consequences. This requires an in-depth knowledge of the organisation, the market in which it operates, and also of its legal, social, political and cultural environments. While identifying risks, it is necessary to describe them, and thus present the characteristics of the threats in a structured way in order to allow their comparison and weighting.

The process of risk identification can entail the following techniques: brain-storming; questionnaires; business analyses, which by discussing specific areas of activity describe internal processes and external factors, which in turn can influence these processes; comparisons with model solutions in a given industry; scenario analyses, workshops in risk assessment; case studies; audits and controls; SWOT analysis, PEST analysis.

Risk **estimation** is a key issue in risk analysis, which determines the appropriate risk approach. The measurement of risk (effect probability) can be qualitative and quantitative. Risk estimation can be based on the probabilistic and statistical methods; sensitivity analysis methods; profile analyses; scenario methods; and operational methods. We can use security models in order to create (construct) risk matrices.

Table 1. Five-point risk level estimator

Probability	Severity of consequences		
	Moderate	**Medium**	**Extreme**
Fairly improbable	Very slight 1	Moderate 2	Medium 3
Probable	Moderate 2	Medium 3	High 4
Highly probable	Medium 3	High 4	Extreme 5

Source: Polish Standard PN-N-18002

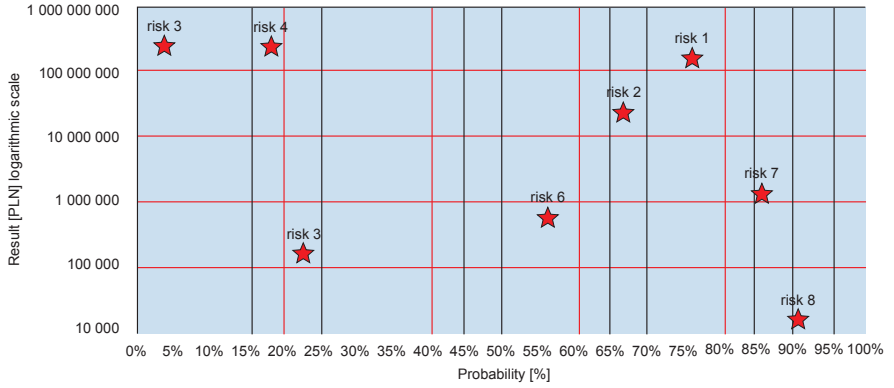
Three-point method

Table 2. Three-point risk level estimator

Probability	Severity of consequences		
	Moderate	**Medium**	**Extreme**
Fairly improbable	Very Slight 1	Slight 1	Medium 2
Probable	Slight 1	Medium 2	High 3
Highly probable	Medium 2	High 3	Very High 3

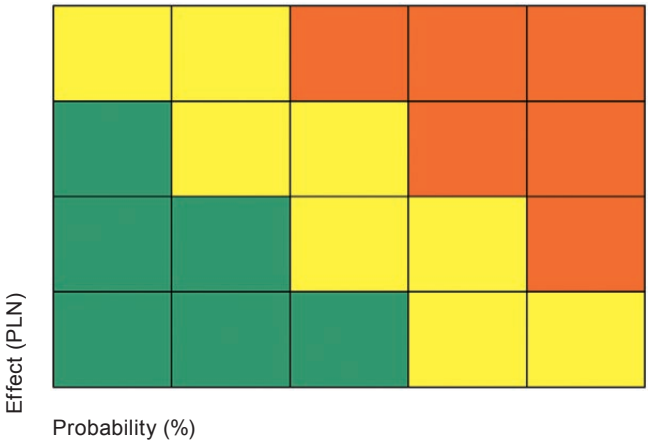
Source: Polish Standard PN-N-18002.

Figure 3. Risk map sample



Source: Sienkiewicz 2006.

Risk maps can be supplemented by the use of colours, which can be put on such maps and warn people, like traffic lights.

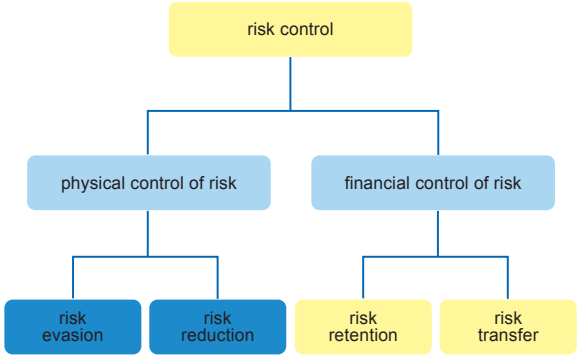


Risk **evaluation** consists of the estimated risk values comparison, which result from its estimation, with the criteria adopted by the organisation. Necessary conditions are specified to acknowledge the level of estimated risk.

Planning consists of the determination of the particular risks acceptable levels (even before risk analysis), and the determination of the possibility to manage different risk types.

Control means the systematic implementation inspection of the adopted risk-management plan through risk verification. It also includes monitoring checking whether the indicators of acceptable risk levels have been exceeded, and making adjustments in the event of a change in risk assessment.

Figure 4. Risk control

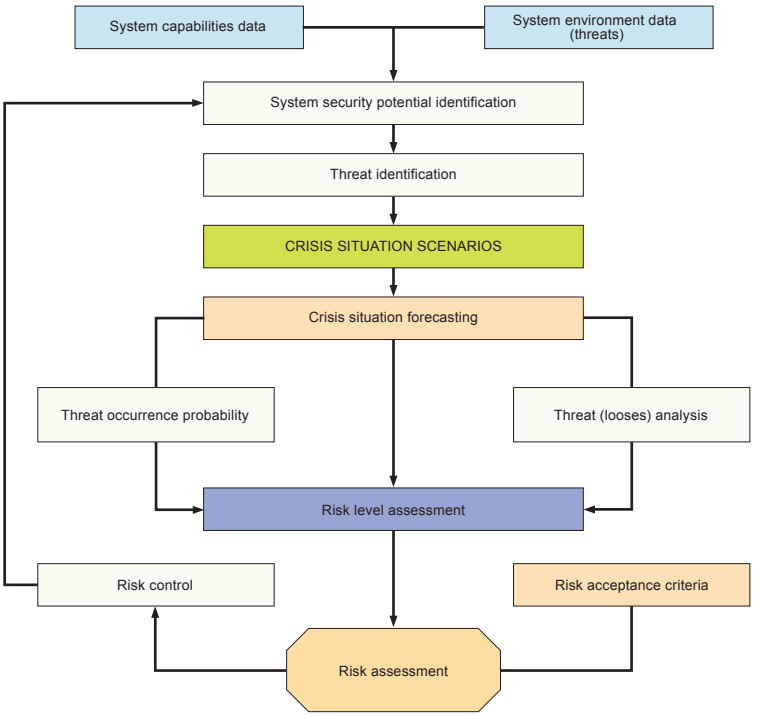


Source: Sienkiewicz 2006.

Monitoring is a process consisting of the investigation whether the appropriate control mechanisms are in the appropriate place in the organisation, and whether the procedures are being observed (correct risk identifi-

cation and evaluation, appropriate solutions in respect of risk procedures). In practice, this takes place by the temporary division of risk-management rules and their compliance with adopted standards[2].

Figure 5. A general model of risk assessment in crisis situations



Source: Sienkiewicz 2006.

Risk assessment is a process of analysing and determining the risks acceptability. It is the result of logical steps made in systematic and systemic research of threats and hazardous events. As a result of such research, actions aimed at risk mitigation are undertaken where it is actually necessary. This process is a subject to the iteration (the act of the step-by-step research repetition) in the risk management algorithm. Next, if it is necessary and practicable, threats are eliminated or mitigated by undertaking measures eliminating or mitigating risks (Romanowska-Słomka, Słomka, 2012: 29).

Risk analysis is concluded by providing the required information necessary to determine the level of the risk. Based on this information, risk evaluation is performed, i.e. the level (value) of the risk is determined.

[2] More on the topic: Bugdol, Jedynak 2012: 132.

Scientists investigating the issue of risk have at their disposal the concepts, definitions and methods suitable also for the individual researcher. They focus their scientific work on the formal aspects of research, and employ scientific methods compatible with the applicable criteria. Furthermore, they must have the appropriate knowledge of the methods used in this field of study. However, while studying risks and crisis situations, one cannot only stick to the criteria of formal logic and disregard such methods as deduction or induction (Kaczmarek, 2009: 51).

In deductive methods the reasoning process consists of going from the general to the specific, i.e. it is a mental process in which, mainly on the basis of the global information, we can reach conclusions on some of its constituents (elements, items). Therefore, it is a mental process based on the assumption of basic rules (premises or axioms), whose legitimacy is acknowledged without reservation, followed by a process of reasoning based on the rules of logic and leading to more specific conclusions (Apanowicz, 2003: 28).

In inductive methods the reasoning process consists of drawing conclusions from the premises forming particular cases. Broadly speaking, it is reasoning from the specific to the general. On the basis of information on some items (processes, events) of a given class, we can reach conclusions on all items.

For the sake of the accuracy of risk assessment, we can distinguish between quantitative and qualitative methods.

Quantitative research consists of a quantitative description and analysis of facts, phenomena and processes. These can be presented in the form of various juxtapositions and calculations, taking into account descriptive and mathematical statistics.

Qualitative research consists of analysing the target phenomena, highlighting elementary constituents, detecting the relationships and interrelations between them, and of specifying their holistic structure (Łobocki, 2003: 92).

The notion of interdisciplinary risk management includes a policy related to risk in various fields of human activity. The adjustment of one's concept to given conditions is an important issue in risk management. Another important factor is the distribution of the clearly defined responsibilities among managers concerning the management of the particular sections and divisions of the enterprise. It is necessary to take into account the existing management model – centralised or decentralised. Furthermore, the implementation of a risk early-warning system is another extremely important issue. Taking the above into consideration, risk management is a logically-arranged collection of rules and regulations, which are constantly and uniformly implemented in respect of the risks entailed with the conducted activities (Kaczmarek, 2008: 96).

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