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Decision-making in crisis situations

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DECISION-MAKING IN CRISIS SITUATIONS

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In the modern world there is a steady increase of crisis situations that are the effect of multi-faceted threats, which may have a negative impact on functioning and safety of the society. Such threats may lead to occurrence of a crisis, that is, generally speaking, an accumulation of various adverse circumstances. The different meanings ascribed to the word “crisis” indicate that there is no single definition that would fully explain the concept. By the dictionary definition a crisis is *a situation that is disadvantageous for someone or something*¹. Crisis is also *a dangerous situation which revealed hazardous circumstances leading to loss of human life or material losses*². Finally, if we consider the national security terminology, a crisis is *a situation arising from a disruption of a stable development process, which might entail loss of initiative and inevitability to accept adverse circumstances and which requires decisive, comprehensive remedies*³. Crisis typically features several characteristics. These include⁴:

- actual, credible threat;
- sufficient scale of the threat;
- sudden and unexpected adverse event;
- pressure of ongoing events, lack of time;
- lack of certainty concerning development of the situation and applied response methods and techniques;
- ongoing escalation of events.

¹ M. Szymczak (ed.), *Słownik języka polskiego PWN* [PWN dictionary of the Polish language], Volume 1, Warsaw, 1978, p. 1066.

² J. Piłżys, *Zarządzanie kryzysowe* [Crisis management], PPH ZAPOL, Szczecin, 2007, p. 18.

³ *Słownik terminów z zakresu bezpieczeństwa narodowego* [Dictionary of national security terms], AON, Warsaw, 2002, p. 62.

⁴ K. Sienkiewicz-Małyjurek, F. R. Krynojewski, *Zarządzanie kryzysowe w administracji publicznej* [Crisis management in public administration], Difin, Warsaw, 2010, p. 22.

There is no doubt that a crisis is associated mostly with certain obstacles or difficulties which people try to overcome, with the use of methods different than usually employed. It should also be emphasized that a crisis touches all spheres and circumstances of human social existence.

A "crisis situation", on the other hand, is defined as: *a set of external and internal circumstances influencing a given system in such a way that a process of change is initiated and continues in the system that disturbs the balance of the system, which is then recovered by means of remedies (extraordinary actions)*⁵. According to the law, the term means *a situation that adversely impacts safety of people, security of property on a large scale or safety of the environment and that puts significant restrictions on the actions of the relevant institutions of the public administration due to the inadequacy of assets and resources*⁶.

It should be noted that colloquially a crisis is quite often understood as synonymous with a crisis situation, in spite of various differences such as⁷:

- crisis is an element of a crisis situation;
- each crisis is a crisis situation, but not each crisis situation includes a crisis element (crisis phase);
- unlike a crisis, a crisis situation at the time of its occurrence does not have to entail changes in the core of an organization, but is a challenge to subjective perception of its normal functioning.

Threats that might be encountered nowadays include: natural, industrial, traffic or construction disasters, as well as many other incidents directly related to human activities. In particular international terrorism and military threats should be mentioned here as well. Accordingly, it might be assumed that threats influencing the level of security are caused by the forces of nature and direct human activities. The most frequent natural threats are such phenomena as: drought, floods, fires, strong winds, seismic activity (earthquakes), landslides, massive precipitation, extreme temperatures and human or animal contagious diseases. Occurrence of the listed phenomena is characterized by high complexity, large area of impact and typically depends on random circumstances⁸. Threats related to human activities are mostly those brought about by various technical failures (damage or destruction of industrial, construction or transportation facilities), social events (unrest), typically caused by the country's internal situation and terrorist incidents⁹

⁵ R. Wróblewski, *Zarys teorii kryzysu, zagadnienia prewencji i zarządzania kryzysami* [An outline of the theory of crisis and issues related to prevention and management of crises], AON, Warsaw, 1996, p. 10.

⁶ The Act on Crisis Management of April 26th, 2007, article 3 (the Journal of Law of 2011, no. 22, item 114).

⁷ E. Nowak E, *Zarządzanie kryzysowe w sytuacjach zagrożeń niemilitarnych* [Crisis management in case of non-military threats], AON, Warsaw, 2007, p. 38.

⁸ Ibidem, pp. 21-24.

⁹ Ibidem, pp. 24-26.

understood as *illegal use of force or violence against people or property in order to intimidate or coerce the government, the civilian population or parts of those, to advance political or social agenda*¹⁰.

The literature on the subject includes also more general classification of types of crisis situations, as shown in the table below (table 1).

Table 1. Types of crisis situations

Type of crisis	Type of crisis situation	Source of crisis
Environmental	Changes in the natural environment	Sudden changes in the nature
Economic	Drop of the standard of living	Decrease of the GDP
Physiological	Acute life-threatening situation	Shock, poisoning, burning, heat stroke, etc.
Political and military	War	Military assault, act of aggression
Psychological	Sudden life changes, in particular traumatic or chronic	Death of a close family member, accident, sudden illness, lack of adaptation to social changes, decrease of social interactions, etc.
Social	Strikes, protests, rallies, riots	Problems with distribution of wealth – social inequalities

Source: A. Kurkiewicz, *Zarządzanie kryzysowe w samorządzie. Podstawy organizacyjno-prawne* [Crisis management in local administration. Legal and administrative principles], Municipium SA, Warsaw, 2008, p. 15.

What is particularly important is that in case of a crisis the relevant uniformed services or other designated state institutions have to observe strictly specified procedures and measures for prevention and warning concerning the threats and for removal of their possible effects. Accordingly, the skill which seems to be essential in such situation is the ability to act correctly (rationally) and according to the standard management procedures.

The literature on the subject has various interpretations of the concept of “management” which leads to its many definitions. For example, R.W. Griffin believes that management can be defined as *a set of activities (including planning and decision-making, organizing, leading, and controlling) directed at an organization's resources (human, financial, physical, and information), with the aim of achieving organizational goals in an efficient*

¹⁰ B. Hoffman, *Oblicza Terroryzmu* [Faces of terrorism], Bertelsmann Media, 2001, p. 27.

and effective manner¹¹. A. K. Koźmiński claims that *the core element of management is overcoming diversity and transforming of a potential conflict into cooperation*¹². According to J. Kurnal management is a *particular kind of leadership based on organizational authority arising from the possession of material assets*¹³. We might conclude then that management is rational and conscious shaping of relations between various elements of an organization system, with management functions used for the purpose of putting of tasks into order. The management functions today include planning, organization, leadership (motivation) and control.

Many theorists and practitioners of management claim that planning is the most important function of management in organization, as it is the process that determines the goals and selects the means for achieving them. Without a robust plan an organization cannot operate, also because the managers cannot coordinate rational utilization of all (human, financial, material etc.) assets which are needed by (or available to) the organization. It should be noted that the final state of the planning process is decision-making, which allows transition to the next management function, i.e. organizing.

The organizing process consists mostly of coordination, putting in order and harmonizing all assets which may be used by the organization to reach its goals. At the same time the managers have to consider their environment – both at the moment and in the future. Having that in mind, we may conclude that it is essential that the organization is well designed, i.e. it has a structure that will be most fit for the accepted strategic plan and the available resources. The basic elements for organization building are¹⁴:

1. Delegation of work – individuals are responsible for particular tasks.
2. Departmentalization – joining tasks logically and effectively.
3. Hierarchy – who reports to whom.
4. Coordination – integration of work of different departments for the effective achievement of the organization goals.

Another important element of the organizing process is establishing the organization structure. It shows relations between all elements which are needed to build the organization. Designing of the organization structure does not have a consistent interpretation. It refers both to creation of a new structure from the ground up as well as reconstruction of an existing one.

The main task of the managers in the leading process is to influence the employees and motivate them so that their work is more effective and

¹¹ R. W. Griffin, *Podstawy zarządzania organizacjami* [Management], PWN, Warsaw, 1998, pp. 36-39.

¹² A. K. Koźmiński, W. Piotrowski, *Zarządzanie. Teoria i praktyka* [Management. Theory and practice], PWN, Warsaw, 1996, p. 130.

¹³ J. Kurnal, *Zarys teorii organizacji i zarządzania* [An outline of the theory of organization and management], PWN, Warsaw, 1969, p. 125.

¹⁴ J. Stoner, R. Freeman, D. Jr. Gilbert, *Kierowanie* [Management], PWE, Warsaw, 2001, p. 306.

aligned to the organization's goals. The manager's job is to entice employees to achieve common goals that have been established in the planning and organizing stages.

Control is typically viewed as a process aimed to assure that the actual activities match the planned ones. The essence of control is systemic observation of current actions and possible application of corrective measures in order to facilitate or increase their performance. Control is particularly essential if the organization environment undergoes changes. It includes the following elements¹⁵:

- determining standards of effectiveness;
- metrics of current effectiveness;
- comparing the effectiveness with accepted standards;
- in case of deviation – adopting corrective measures.

In the view of the above, it should be noted that crisis management is a particular kind of management. It is so as it relates to proper management of crisis situations which might influence safety of the society. According to the reference sources crisis management is *the total sum of system solutions for protection of the population, applied by the public authorities at all levels, in cooperation with specialized organizations and other institutions in order to prevent situations that might pose a hazard to life or health of citizens or threat to their environment*¹⁶. R. Wróblewski defines the concept as *the process of management within a state to prevent crisis situations and, in case of their occurrence, to direct the development of sudden and dangerous events that threaten the vital interests of the society*¹⁷.

It is assumed that crisis management includes:

- prevention of events that disrupt the organizational configuration of security or its protection;
- preparation, i.e. creation of plans for crisis response and for functioning of the public administration and methods of protection of main elements of the security configuration;
- response;
- reconstruction¹⁸.

¹⁵ J. Stoner, R. Freeman, D. Jr. Gilbert, *Kierowanie...*, p. 26.

¹⁶ K. Zieliński, *Bezpieczeństwo obywateli podczas kryzysów niemilitarnych oraz reagowania w razie katastrof i klęsk żywiołowych* [Safety of citizens during non-military crises and response to incidents and natural disasters], AON, Warsaw, 2004, p. 29.

¹⁷ R. Wróblewski, *Zarys teorii kryzysu, zagadnienia prewencji i zarządzania kryzysami* [An outline of the theory of crisis and issues related to prevention and management of crises], AON, Warsaw, 1996, p. 39.

¹⁸ J. Prońko, *Przygotowanie organizacji do funkcjonowania w sytuacjach kryzysowych* [Preparation of organizations for functioning in crisis situations], [in:] B. Wiśniewski, B. Kaczmarczyk (eds.), *Zarządzanie kryzysowe. Uwarunkowania teoretyczne, prawne i organizacyjne* [Crisis management. Theoretic, legal and organizational circumstances], vol. I, PWSZ, Legnica, 2012, p. 70.

Thus it is worth emphasizing that the main purpose of crisis management is to provide safety to the population by minimizing the possible threats and, in case they occur, to undertake rational actions to minimize their effects. It also should be noted that effective crisis management, i.e. such that is directed toward achievement of established goals, depends on the accurate transfer of information, clearly specified procedures and professional staff management.

In case of actual threats providing safety to the citizens involves acting under pressure of time and unexpected events. This in turn invokes in people negative emotional states which are typically identified as stress, defined as the state or changes in the body that are brought about by detrimental stimuli that disrupt physiological and chemical body balance (homeostasis)¹⁹.

The reference sources typically distinguish two types of stress – biological stress and psychological stress. The concept of biological stress has been introduced in 1936 by H. Selye, a Canadian physiologist and university professor in Montreal. He called the factors that entail stress – “stressors”. They directly influence human behavior, i.e. people’s thinking and acting. It should be noted that there are two basic types of stress. Stressors positively affecting the body – *eustresses* – which motivate people to specific actions and stressors negatively affecting the body – *distresses* – which prohibit or disturb performance of important tasks²⁰. As stress increases, the general well-being and health level of a person increases. However, if the stress level increases even more, it eventually reaches the maximum point as far as benefits are concerned. The point is called the optimal stress level. If the point is crossed, stress becomes dangerous for human health.

Maximum stress tolerance, i.e. maintaining its level which is optimal for a given person depends mostly on biological characteristics, experience, current health and age²¹.

Psychological stress is caused by various external factors which significantly disrupt or prohibit achieving or satisfying certain values. Typically these are new situations which have not been encountered by a given person before, therefore he or she has significant problems with solving them. This is caused by the fact that the person does not have sufficient knowledge or that such situations are especially hard. They might relate e.g. to selection of a specific strategy for action with uncertainty concerning its effectiveness, awareness of risk or sustained loss²².

¹⁹ J. F. Terelak, *Człowiek i stres* [The man and stress], Branta, Bydgoszcz – Warsaw, 2008, p. 23.

²⁰ H. Selye, *Stres życia* [The stress of life], Warsaw, 1963, pp. 31-40.

²¹ J. Darmetko, *Stres pola walki* [Stress in the combat field], [in:] *Zeszyty Naukowe WSOWL*, no. 2 (148) 2008, p. 9.

²² W. S. Gumułka, W. Rewerski, *Encyklopedia Zdrowia* [The Encyclopedia of health], vol. I, PWE, Warsaw, 2000, p. 1097.

Human psyche is the basic force that drives every person. Its knowledge is necessary to master the ability to maintain the appropriate level of engagement and motivation in situations which are dangerous and which require maximum psychophysical effort. Action in such conditions may be disrupted by many factors, especially when the person acts under pressure of time or when the decision concerning the actions entails serious consequences.

An important factor which might influence efficiency of actions undertaken by appropriate services, guards and agencies in crisis situations is the process of making optimal decisions, particularly under risk and uncertainty.

For the purposes of this article the concepts related to “decision” and “decision-making process” need to be shortly described.

Research results confirm the view that decision-making, perceived as an essential part of management processes, is variously defined. In general, it is a process of conscious and non-random choice of one option for action. According to J. Zieleniewski, decision-making is *performing non-random choice for action, where non-random selection is prioritizing one element before others based on some reasons*²³. Therefore decision-making is a special case of choice, special in that, firstly, it should lead to a specific action, that is, the discussed set includes goals and/or methods (directions) of operation. Secondly, the choice has to be conscious, based on non-random criteria²⁴.

Obviously, the result of the decision-making is a decision. It has, just like decision-making, different definitions. For example, T. Pszczołowski defines a decision as an *internal action which is a free choice of one of possible future behaviors. Decision is a result of decision-making, that is transforming intents into goals*²⁵. J. Rudniański, on the other hand, describes decision as a *choice of one action among a number of actions possible to undertake in a given moment* (to be more precise: Decision is a choice of one action among a number of actions which seem to be possible in a given moment) or conscious refraining from choice, which is a choice in itself²⁶. However, it should be noted that decision-making is not only the choice itself. The process of decision-making is recognizing and defining the core elements of the decided situation, identifying alternatives, choosing the best one and acting

²³ J. Zieleniewski, *Organizacja zespołów ludzkich. Wstęp do teorii organizacji i kierowania* [Organization of human teams. Introduction to theory of organization and management], Warsaw, 1976, p. 406.

²⁴ J. Supernat, *Techniki decyzyjne i organizatorskie* [Techniques for decisions and organization], Wrocław, 2003, p. 17.

²⁵ T. Pszczołowski, *Mała encyklopedia prakseologii i teorii organizacji* [The concise encyclopedia of praxeology and theory of organization], Warsaw, 1978, p. 44.

²⁶ J. Rodniański, *Przed decyzją* [Before the decision], Warsaw, 1965, p. 58.

on it²⁷. In the classic decision process conventionally several stages are identified, such as:

- identification of a decision situation;
- determining the decision problem;
- constructing the decision model;
- determining decisions which are allowable, sufficient or optimal;
- act of choice – making the final decision.

Decision-making process is a social process due to the preferable participation of those executing the decisions, but also due to hierarchic and functional relations between various management positions. Those relations give rise to information and decision-making systems, which include a number of different management positions.

The conclusions in the references on the subject confirm that many theorists of management acknowledge decision-making to be the most important element of the management process. Such view is shared by the management practitioners, as the effectiveness of their actions is often measured by the results (effects) of undertaken decisions. On the other hand, the subordinates of managers at all levels are interested in the decisions made by the management not only because most of those decisions pertain to themselves, but also because they want to participate in the decision-making²⁸.

A decision situation is encountered when a specific decision problem occurs, with many possible factors that might influence its solution. Consequently, several options are identified, each of which has certain advantages and disadvantages, and only then application of the proper decision strategy allows to choose the option which (supposedly) will be the best. It is not too complicated in a situation where the choice of one of the alternatives entails more or less benefits. The problem is significantly more poignant when the number of possible options to be analyzed is higher and the decision is made under risk or uncertainty and when the decision influences the future not only of the decision-maker, but also of other people. These are the situations that are encountered in crisis management.

Research indicates that decisions made under risk are characteristic of the crisis management. This is due to the fact that officers of the relevant organizations often participate in events where certain hazards are present, including the threat of loss of life.

In order to describe the characteristic features of decisions made under conditions specified above it is useful to define the concept of risk more precisely. What is risk? A dictionary definition states that risk is a possibility or probability of failure, an undertaking which result is unknown, uncertain or

²⁷ R. W Griffin, *Podstawy...* p. 268.

²⁸ A. Peszko, *Podstawy zarządzania organizacjami* [The basics of organization management], Kraków, 2002, p. 83.

problematic. T. Pszczołowski defines risk *somewhat differently, noting that risk is the degree of probability of occurrence of events independent of the acting person, which he or she cannot precisely predict or cannot effectively prevent, but which would render the action completely or partially ineffective, disadvantageous or economically unviable*²⁹.

The characteristic feature of decisions made under risk (probabilistic decisions) is that their results are uncertain. It means that the decision-maker may only determine the probability of occurrence of a given event and negative or positive effects which may be brought about by the choice he or she made³⁰. In general, risky decisions are defined as a choice among risky options (actions) which entail a specific set of possible results (consequences), where the probability of each of those results is known.

Very often the factors used by the decision maker to assess the probability of occurrence of a given event are: frequency of their occurrence, e.g. "in the past years...", opinions of experts and his own, subjective evaluations based on experience and competence of the person making the decision. Here the heuristic³¹ methods of probability assessment should be mentioned. They show how everyday people are making such assessments – often useful but not guaranteeing complete accuracy. This is due to the fact that people tend to be overly optimistic, which means they overestimate the probability of occurrence of positive events.

Interesting views on the subject are presented by Tversky and Kahneman, who describe four basic discovery heuristics:

- availability – assessment of probability of occurrence of an event which is present in memory. It is easier to bring it back to consciousness and it is more emotionally loaded, which causes overestimation of certain probabilities and underestimation of others³²;
- representativeness – classifying of a given object by its similarity to a given prototype, i.e. the most popular item in the given category. The heuristics may be a good way to quickly respond to important questions, however there is a problem of dismissing important information due to the assessment based only on similarity. Such way of thinking is unconscious and usually applied automatically;

²⁹ Słownik języka polskiego [Dictionary of the Polish language]. vol. 3, Warsaw, 1981, p. 155.

³⁰ T. Tyszka, *Decyzje. Perspektywa psychologiczna i ekonomiczna* [Decisions. Psychological and economic perspective], Wydawnictwo Naukowe Scholar, Warsaw, 2010, p. 26.

³¹ Heuristics (which is derived from a Greek word meaning "ability to make discoveries") is an ability to detect new facts and relations between the facts, in particular making hypotheses which lead to discovery of new, scientific truths; an ability to detect, search for and uncover historical materials.

³² M. Lewicka, *Myślenie i rozumowanie* [Thinking and reasoning] [in:] J. Strelau (ed.), *Psychologia. Podręcznik akademicki* [Psychology. University handbook], vol. 2. *Psychologia ogólna* [General psychology], Gdańskie Wydawnictwo Psychologiczne, Gdańsk, 2000, p. 304.

- anchoring – use of perceptive mechanism of assimilation. While estimating the results people use certain prominent perception points (anchors) and then modify the obtained result with additional information, although often the modification does not compensate the assimilative effect of anchoring³³;

- simulation – belief on the development of events based on a mental image. The easier it is to picture something mentally, the more likely it seems to be. On the other hand, random occurrences are seen as less likely.

It should be noted that decision-making under risk requires that the decision-maker may determine the probability of occurrence of a given event and its consequences. Accordingly, many theories have been developed describing whether people should take risks or not. The most popular principle is the theory of perspective, which has wide applications, also as it relates to the phenomenon known as mental accounting. It is also important that people in assessment of probability of various events use heuristics, i.e. particular simplifications applied during decision-making. Quite often they are very useful, but sometimes they might lead to serious mistakes. The above statements indicate how important is the ability to make decisions under risk, as seen from the perspective of crisis management.

To characterize decisions made under conditions described above it would also be useful to define precisely the concept of uncertainty. What is uncertainty? According to dictionary, it is lack of confidence or security, doubt³⁴. T. Pszczołowski describes uncertainty differently: he notes that uncertainty is a lack of strong conviction that something has been, is or will be a certain way; as far as it pertains to one's own action – lack of conviction that the given mode of operation together with the use of the given resources will allow achievement of a certain goal³⁵.

The conditions of utter, total uncertainty refer to complete lack of knowledge concerning the consequences of the undertaken action. Additionally the decision maker does not have a way to determine the chances of an event i.e. the probability of occurrence of particular states of affairs. In particular, it refers to a situation in which the results depend on the free choice of a person. Most often this occurs in situations in which uncertainty is related to collective (group) decision-making. It leads to a situation where individual decision-makers influence each others' proposed solutions. Such situations often are considered in the theory of games. In that sense uncertainty is a value on a scale between extreme certainty (probability equal one) and extreme uncertainty (probability equal zero).

³³ Ibidem, p. 304.

³⁴ Słownik języka polskiego. [Dictionary of the Polish language]. Vol. 2, Warsaw, 1981, p. 347.

³⁵ T. Pszczołowski, *Mała encyklopedia prakseologii i teorii organizacji* [The concise encyclopedia of praxeology and theory of organization], Warsaw, 1978, p. 134.

The present difficulties notwithstanding, there are many ways to solve decision problems in situations which are determined by many decision-making criteria. While they do not fulfill all rational postulates which are used for the choice of actions, using any of them signifies accepting a specified, limited concept of rationality. The criteria used for decision-making under uncertainty are examined by the theory of individual decision-making. The results of assessed actions are completely unpredictable – it is often said that it is playing with nature, which consequences cannot be fully assessed by humans.

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PODEJMOWANIE DECYZJI W SYTUACJACH KRYZYSOWYCH

Abstrakt: Zdolność do podejmowania optymalnych decyzji w warunkach kryzysowych jest szczególną umiejętnością, którą powinni posiadać funkcjonariusze i pracownicy służb, straży i agencji, realizujący zadania w konfrontacji z sytuacjami, stanowiącymi zagrożenie dla społeczeństwa. Rozwój cywilizacyjny społeczeństw, w tym także procesy globalizacji sprawiają, że sytuacji kryzysowych może pojawiać się coraz więcej. Zatem istotnym problemem jest odpowiednie przygotowanie określonych osób do podejmowania racjonalnych działań w sytuacjach kryzysu. Należy również podkreślić, że działanie w omawianych warunkach związane jest z presją czasu, zaskoczeniem czy ryzykiem, a to może przyczynić się do pojawiania się u ludzi negatywnych stanów emocjonalnych. Należy zatem pamiętać, że osoby odpowiedzialne za podejmowanie decyzji w takich warunkach muszą posiadać umiejętności zachowania odpowiedniego poziomu zaangażowania i motywacji w sytuacjach niebezpiecznych i wymagających maksymalnego wysiłku psychofizycznego oraz posiadać znaczną odporność psychiczną.