

CONDITIONS OF THE DECISION - MAKING PROCESS

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Summary:

In the article it has been emphasized, without analyzing the problematic situation, that making decision is becoming an increasingly complex process. This is influenced by many factors, mainly the dynamism of changes taking place and the significant impact of the environment. Information is essential to take correct and effective decisions. It is not always certain (reliable). Uncertainty and risk accompany decision makers and the point is that the decisions are adequate to the ensuing situation and create realistic determinants for achieving objectives – the implementation of the planned tasks. Interdisciplinary knowledge and high competences of persons making resolutions of complex decision problems are indispensable.

Keywords:

decision, risk, uncertainty, information, determinants

INTRODUCTION

Issues related to decision - making have long been in the center of scientific interest of theorists and practitioners. This state of affairs is no surprising. Making decisions is an inherent part of human life. Thus, it is understandable that much has been spoken and written about it. The material that has been published so far constitutes a specific acquis that allows taking a look with a full knowledge of the facts at the organizational structure under development, the information flow and working methods of managers (commanders) as well as various determinants of the decision - making process. The publications provide the basis for further reflection, especially nowadays when we have to function under very complex conditions and during rapid and significant

changes; when it is necessary to adopt solutions in ambiguously defined situations¹. The analysis of many studies also suggests that new conceptual approaches to making decisions are emerging, which more or less adequately respond to the dynamic changes taking place in the organization and its environment². However, the perception of a variety of phenomena is different, which does not allow for a clear definition of the future.

Management (command) always anticipates the future. This implies a close relationship of management with decision-making issues, which constitutes a particularly important subject of organizational and management theory, so important that it is recognized as a distinguishing element as a scientific discipline – the decision-making theory. This theory has its own dimensions. It is, however, essential to apply the theory correctly and to use it appropriately in a specific situation - a problematic situation (a decision situation) when proposing solutions.

Specific knowledge in this area is delivered by the theory of organization and management, which provides practitioners with a collection of empirically validated theorems and lists of issues that should be resolved prior to any operation. Its practical suitability is seen in the fact that theoretical foundations facilitate decision-making, mainly by examining and designing variants of action according to different circumstances. The theory is conducive to increasing the accuracy of the decision, and allows a practitioner to realize certain phenomena that would remain unnoticed without this knowledge.

Making decisions varies in the scope, degree of detail and consequences for a company (an institution) as well as people performing their tasks there. Oftentimes taking managerial decisions is a daily activity, routinized, which is, among other things, the result of constant monitoring of all aspects of both the organization's functioning and changing environment. At other times, deciding requires performing a number of activities and is a complex undertaking; it is a particular type of a specific process. At this point it is reasonable to mention that a decision is for the action what breathing for a human - gives life³.

There are a significant number of organizations in the surrounding reality. They constitute a diversified group in many respects. What is more, various conditions for making decisions - dealing with current and prospective problems exist. All organizations, however, are guided by specific rules of conduct aimed at achieving the objectives pursued, primarily maintaining competitive advantage (defeating an opponent).

People create organizations (all organizational activities) with the aim of executing specific tasks and activities resulting thereof. Entities (people), tools and objects of ac-

¹ [online]. [access: 13.11.2016]. Available on the Internet: http://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/4_J.Zemke_Ryzyko_w_Aspekcie_.pdf.

² Z. Redziak, (2013). *Niepewność w podejmowaniu decyzji*, Journals of Science of AON 2(91), Warsaw, p.103.

³ [online]. [access: 13.11.2016]. Available on the Internet: http://www.broneks.net/wp-content/uploads/2008/12/25_skuteczne_podejmowanie_decyzji.pdf.

tion are considered inseparable components of each organization. In addition, for the proper functioning, existence and development of an organization, various types of relationships are indispensable for linking the entities and objects of action in organizational units. It is not a complex area of human activity.

Emphasizing that contemporary conditions for functioning of organizations are very complicated will not be anything new. But it is worth stressing, since many areas of human life and activity, like modern organizations, have reached a high level of complexity. That is why every decision maker must sometimes solve particularly challenging problems (economical, technological and interpersonal). Under such circumstances, the decision-making function that plays a key role in the enterprise's (institution's) management is becoming increasingly difficult and more responsible. Hence, issues related to effectiveness and efficiency of decision-making have become a fundamental research problems for scientists in many disciplines: it is the subject of concern in praxeology, decision theory, operational research, organizational and management theory, psychology, sociology, and military sciences. Interest in the same problem taken by so many areas of science undoubtedly stems from the fact that good decision-making is the essence of all human activity.

The content of the article concerns a variety of decision-making issues. The aim is to present the variety of determinants that affect making resolutions without defining the nature of an organization and a given decision-making situation. Striving to make the present paper as universal as possible, the nature of an organization, its specificity and its surroundings (conditions of operation) have not been specified⁴. The level of decisions has not been defined as well. By using the terms 'boss', 'manager', 'director' or 'commander', no reference was made to the character or tasks fulfilled. The approach that embraces the whole phenomenon in terms of relationships with the environment as well as its internal structure dominates. This was done mainly in order to make this work universal and possible to use by both practitioners and theorists, or students from different higher education institutions, including military ones.

1. AN ORGANIZATION AS A SYSTEM

Each organization is a sort of system that is capable of performing long-term tasks, being in the state of exchange of matter, energy and information with the environment and striving for a dynamic balance, called an open system⁵. A generalization can be made that the basic characteristics of an organization as an open system are as follows:

- organizations are open systems since they constantly exchange energy, matter, and information with the environment, which, based on feedback, influence the organization, while never being homogeneous;
- organizations are systems deliberately created by people for performing specific functions; they may be designed in the same way as technical ob-

⁴ For example, regarding the determinants of political decision making.

⁵ Cf. J. Penc, *Zarządzanie dla przyszłości – twórcze kierowanie firmą*, Kraków 1998, p. 22.

jects, but the approach to design must take into account the specificity of social elements;

- organizations have a hierarchical structure, i.e. systems are built from subsystems, which in turn are subdivided into lower level elements;
- organizations have the capability of self-improvement, enhancing efficiency, increasing the degree of structuring, as opposed to other systems (e.g. biological and technical ones), which over time reduce the degree of structuring and efficiency and undergo destruction;
- organizations are able to achieve relatively stable states of dynamic equilibrium with the environment. This means that the system maintains its structure during the exchange of power and energy with the surrounding. If, as a result of changes occurring both in the system and in the environment, the balance is breached, the system should change its structure. Otherwise, exchange with the environment becomes unfavorable to the system;
- managerial and inspection functions in organizations are reflected in the processes of regulation and control. An essential role in these processes is played by feedback with the environment that allows the assessment of the system's impact on the environment and feedback within the system, which is essential for the proper functioning of the system.
- organizations are equifinal systems, i.e. similar effects can be realized in various organizational structures and as a result of various organizational processes.

The above features of an organization lead to drawing a number of conclusions. It is significant that an organization as an open system consists of several interconnected subsystems.

It is also justified to emphasize the fact that each organization (a specific system) functions in a close relation with the environment. An organization receives energy from the environment (energy, labor input, raw materials, operating resources, etc.) and information (parameters, indicators, regulations, market information, etc.) through the entries. In turn, through the outputs, the system transmits goods and services produced, information and waste products to the environment. This is enabled by a process of transforming (processing) input quantities into output quantities inside the system. This is achieved by means of available technology, purposefully formed structures, and with the active involvement of the personnel having relevant knowledge and skills.

The information subsystem, the elements of which are contained in management and executive subsystems, plays an important role in an organization, not only in the context of decision-making. The primary function of the information subsystem is the collection, storage, processing and transmission of information that controls the execution process⁶. This means that the management subsystem implements general plan-

⁶ J. Kisielnicki, H. Sroka, *Systemy informacyjne biznesu*, Warsaw 2001, p. 18.

ning, organizing, motivating and controlling functions for the execution subsystem. The management subsystem is therefore a particular subsystem in an organization, and it substantially determines the proper functioning of an organization as a whole.

W. Kieżun, who formulated a thesis that the degree of communication efficiency between the parts of an organization and the environment and an organization as a whole and the environment is directly related to the efficiency of the entire organization, emphasizes the importance of the information system for efficient management⁷.

The management subsystem in an organization can be defined as a set of activities that encompasses a complete cycle of management processes, namely: planning and decision making, organizing, leading (human resources management) and controlling directed at the organization's resources (human, financial, material and information) and performed with a view to achieving an objective efficiently and effectively. L. Krzyżanowski understands the organizational management subsystem *'as an ordered (consistent, mutually non-contradictory) set of formal rules (principles, patterns) and actually applied methods (manners, techniques, procedures) of planning, organizing, motivating and controlling, i.e. performing functions constituting the complementary process of an organization's management'*⁸. The issues related to concepts, patterns, rules, manners, methods, techniques, procedures (algorithms) are resolved in the management subsystem.

The issues addressed once again highlight the special role of a management subsystem in the efficient functioning of an organization as a system. It happens that some of the presented issues are, in the common understanding, compared to a heart or brain. There is no exaggeration in this kind of terms, since they refer to the priority role of this subsystem for the efficiency of an organization not only through the prism of the present but also the future.

2. THEORETICAL ASPECTS OF THE DECISION-MAKING PROCESS

Every activity of human and organization is based on continuous making resolutions and decisions. In the literature of the subject, deciding is understood as conducting the non-random selection procedure, the final result of which is a decision. All decision-making processes have some common features, no matter how complex they are, and regardless of the field they refer to.

However, in any case before the mentioned act of choice is made, a decision problem must occur, from which defining a problem situation begins where a decision maker faces the necessity to choose one of at least two possible variants of action. The way in which a decision problem is formulated translates into a decision adopted. The identified decision problem determines the alternatives that are considered within the problem solving procedure. This means that the correct formulation of a problem controls the further stages of the decision-making process. A decision problem is the realized lack of knowledge that can be expressed in the form of a question or set of questions

⁷ More: W. Kieżun, *Podstawy organizacji i zarządzania*, Warsaw 1997.

⁸ L. Krzyżanowski, *Podstawy nauki zarządzania*, Warsaw 1985, p. 256.

for which an answer is sought because it is not known and the knowledge is desired or necessary to obtain, for purely cognitive or practical reasons⁹. Decision-making is a problem that needs to be resolved by making a decision. The solution to the problem lies in the selection of such an activity, which under particular conditions will allow achieving a given goal, implementing the adopted strategy of action. Making the right decision is intended to help achieve the set objectives.

A decision problem can arise for several reasons. The most common reason is the occurrence of exemptions from the normal state of affairs, i.e. from the state that is considered as desired for a given situation. If differences between such a state and the actual state exist, it is necessary to restore the normal state of things. The exemptions in question are characterized by the place and time of their occurrence, as well as the degree of changes. As a rule, they are related to specific operating conditions of an organization. Decisions are most frequently related to solving problems arising from the influence of the environment and hindering the realization of the organization's objectives. This means the elimination of problems that have emerged on this way. Such decisions are fundamentally different from those that accompany people in family and social lives.

Another reason for the appearing of a decision problem is the need to improve the current status. The purpose of the improvements introduced is known. Decisions meeting the need for improvements are no longer of a regulatory nature, as they result in the change of factual state in the direction set by the adopted purpose of these changes. Hence, steering decisions are here dealt with. Innovative decisions are a special case of steering decisions, aimed at introducing certain developmental changes (production, organizational, technological and economic) in the actual state of affairs¹⁰.

A great number of factors or elements are present in a decision problem. A decision maker occupies a special place among them. This is a contractual term because a decision is taken by an individual, but generally after the collective identification of the problem to be addressed. A decision maker is characterized by decision-making skills, specific knowledge that underpins his/her choices, and must also have an appropriate information system that provides him/her with the information needed to diagnose a given problem and all related circumstances and conditions as well.

The information constitutes grounds for decision-making (Figure 1). It is the basis of right decisions. If relevant information is not obtainable, decisions must be based on assumptions, feelings and guesses. Information is material from which a decision is made and provides a message for subsequent decisions and for persons implementing decisions taken. A decision is therefore a kind of information, carrying, apart from cognition of the reality, the factor of shaping the future.

⁹ http://www.podyplomowe.ue.wroc.pl/pliki/_c/417/podejmowanie_decyzji_w_pewnosci_ryzyka_i_niepewnosci.pdf, accessed on 11.11.2016.

¹⁰ Cf. K. Janasz, (2012) , Decyzje innowacyjne w przedsiębiorstwie, Zeszyty Naukowe Uniwersytetu Szczecińskiego, Szczecin, No 37, pp. 831-842.

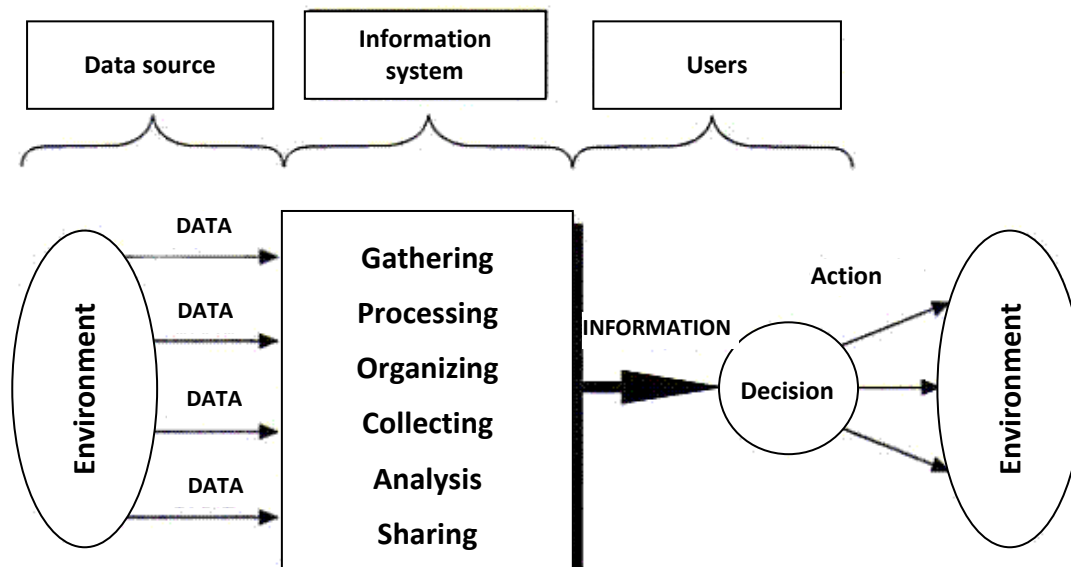


Fig. 1. The role of the information system in an organization

Source: https://www.uci.agh.edu.pl/uczelnia/tad/PSI6/wyklady_html/wyklad01.htm, accessed on 10.02.2017

A decision is always a means to achieve such a state of affairs (purpose, result) that is specified and desired by a decision maker. As a rule, the purpose of a decision is such a state of affairs that the higher management level wants to reach. An organization's own goals are also of great importance. Defining an objective is one of the most difficult steps in the decision-making process; the higher level of management adopts a solution, the harder it becomes. The decision cycle may include multiple goals, sometimes even contradicting each other. Nevertheless, an objective or objectives of a decision should be always transformed into criteria allowing for choosing from among variants of solutions to a decision problem.

Each decision is influenced by a set of external factors that affect the outcome of a decision taken or states that are not under the decision maker's control. In particular, a decision maker may not know the context of the problem at the time of making a decision. This is especially noticeable in military organizations, especially during combat operations.

External factors and the internal environment have an impact on decisions. The internal environment encompasses conditions and forces within an organization that influence the efficiency of decisions to be made. They cause uncertainty and limit a decision-making discretion. Decision makers, on the one hand, have a defined range of powers and resources necessary for making decisions, and, on the other hand, are constrained by the imposed procedures, which is particularly evident in relation to decisions relating to a battlefield or crisis situations.

With far-reaching generalizations it can be assumed that the main factors limiting the freedom of effective decision-making are¹¹:

- pressure and social expectations;
- structural constraints;
- cultural restrictions;
- capital restrictions, i.e. resources;
- time pressure.

Due to the nature of the article and the context of the issues under consideration, the author more firmly emphasizes the pressure of time as one of the factors limiting the freedom of decision-making. Under pressure of time and consequences that may arise, this factor forces the need for a rapid response to the variability of conditions (external and internal) of the organization's functioning. In this situation, no one should be surprised that decision makers are often obliged to make conclusions in shorter time intervals.

Time pressure can restrict a decision maker's freedom by¹²:

- reducing the time to obtain necessary information;
- causing difficulty in analyzing information and limiting the time needed to generate valuable solutions;
- forcing to deal with many problems at the same time;
- making the atmosphere in an organization more nervous;
- inducing stress, which can cause harm to health and irrational behavior.

Z. Redziak's research shows that the mentioned time pressure is a factor limiting the freedom of effective decision-making by managers (commanders), as indicated by a quarter of respondents¹³.

When considering the issues of decision-making, barriers to decision-making rationality cannot be omitted. These include primarily information, resource, competence, social, organizational, bureaucratic and competitive barriers. Such a state of affairs justifies the need for eliminating or at least limiting the shortcomings that have just been identified. First and foremost, efforts should be made to increase the competence of decision-makers, making decisions on the basis of scientific methods, socialization and technicalization of the decision-making process, simplifying organizational structures and using organizational techniques. By analyzing the barriers to making rational decisions, Maria Romanowska points out their three main types: competence barriers, organizational barriers and information barriers¹⁴.

¹¹ K. Bolesta-Kukułka, *Decyzje menedżerskie*, PWE, Warsaw 2003, pp.90-91.

¹² Ibidem, p.105.

¹³ Z. Redziak, (2011). *Czynniki ograniczające swobodę sprawnego podejmowania decyzji w organizacji*, Public Management Naukowe AON, Warsaw, p.332.

¹⁴ M. Romanowska, (2008), *Podejmowanie decyzji w organizacji*, [in:] M. Strużycki (ed.), *Podstawy zarządzania*, the Warsaw School of Economics, Warsaw.

The issues raised are not further discussed in view of the limitations of the article, although they may be a prerequisite for their subsequent inclusion.

3. UNCERTAINTY AND RISK WHILE SOLVING DECISION PROBLEMS

Uncertainty related to the context of a decision problem is characteristic for the management process. The scope of this uncertainty may be smaller or larger, in a particular case it may be even reduced to zero. Due to the scope of uncertainty in the management process, one can talk about decisions made under conditions of uncertainty, risk, and certainty¹⁵. Decision making in uncertainty conditions is much more difficult than choosing under risky conditions¹⁶. At this point it is important to emphasize that risk is a function of uncertainty, and the function has the nature of a simple dependency: the greater the uncertainty, the greater the risk, and vice versa - risk decreases as undefined and uncertainty factors decrease¹⁷. Among other things, these facts suggest that the fuzzy number theory is taken into account in risk management. It is also a useful tool for assessing the capacity to continue activity, used not only by banking institutions, but also when evaluating the implementation of projects.

In the context of the observations made, it may be concluded that the decision-making process should be permanently improved. The course of organized activity must also be investigated, hypotheses verified and practical recommendations and conclusions should be reflected in relevant elaborations. J. Koziół¹⁸ stresses that the conclusions emerging from the theory of decision-making, although they are more and more widely published in professional literature, are not significantly applicable in practice. The reasons for this state of affairs are seen in the way of presenting the aforementioned problems and in the use of the description language extremely difficult to understand by an average decision maker. According to J. Koziół this state of affairs contributes to creating a barrier in the practical application of one or another scientific theory.

It is obvious that the current state of knowledge and abilities to deal with such complex issues, which is undoubtedly a decision-making process, suggests that a decision will always be taken in the face of risk and uncertainty. It is important, however, that our information (image) on a problem situation is as extensive as possible in order to approach the limits. This can guarantee that effects of decisions made will oscillate around 100% success.

J. Koziół¹⁹, focusing on the decision-making entity, argues that the behavior of a decision maker depends to a large extent on the structure of a task and the environment in which the person operates. Every environment (natural, social) can be described as a three-dimensional space. Its features that can be identified (measured)

¹⁵ More: K. Grzesik, M. Karaś, (2014), *Decyzjemenedżerskie w organizacji*, Publishing House of the Wrocław University of Economy, Wrocław.

¹⁶ Cf. T. Tyszka, *Decyzje. Perspektywa psychologiczna i ekonomiczna*, Scholar, Warsaw 2010, pp. 28–28.

¹⁷ A .M .Olkiewicz, (2012). *Ryzyko i jego wpływ na decyzje przedsiębiorstw*, [in:] *Journals of Science of the University of Szczecin*, No. 737, Szczecin, p.557.

¹⁸ J. Koziół, *Decyzje w dowodzeniu*, AON, Warsaw 1998, p. 5.

¹⁹ J. Koziół, *Psychologiczna teoria decyzji*, PWN, Warsaw 1977, pp. 50-52.

include: uncertainty, dynamics and complexity. On a day-to-day basis, there is a lot of evidence that each environment is characterized by a certain degree of uncertainty. According to many researchers this is its most important dimension. The environment also has a certain degree of dynamics, which over time is modified and transformed. The third dimension is a specific level of complexity that describes the level of complication of a given environment. It is assumed that it is all the more complicated, the more variables there are in it.

Every real decision situation involves risks because each decision is made in conditions of incomplete and uncertain information. Unreservedly it can be assumed that historical and diagnostic information is non - complete information, whereas prognostic information is, by its nature, uncertain. Thus, every decision is made under circumstances of less or greater risks. In decision situations the decision maker's subjective attitude to the perceived and realized risk appears: vulnerability to risk (*'risk-taking'*) or risk aversion (*'risk-hedging'*) is manifested as well.

The essence of risk is making a decision, whose effects can be different, e.g. both single (loss) and multi-directional (loss, profit). In the first case, most often the criterion of risk profitability will be to minimize consequences of the loss, and in the second - the choice of the variant with the highest expected surplus of profit over the loss. Peter L. Bernstein and A. Damodaran describe the problem as follows: *'More generally, risk can be treated as a probability of 'doing something wrong'. In a sense it resembles a two-edged sword'*²⁰. However, the Chinese definition of risk is simpler because the word is made up of two characters, one of which means 'danger' and the other - 'chance'.

In the conclusion of this section, it should be stressed that when solving decision problems, uncertainty will be their inherent part, since the occurrence of phenomena that cannot be fully explained gives rise to uncertainty. Such uncertainty is defined as objective, passive because it is not shaped by purposeful action. In turn, the so-called active uncertainty appears in the aspect of the human mind, which performs analytical and decision-making functions. P. Jedynak and S. Szydło interpret the problem as follows: *'The appearance of uncertainty will enable the process of its activation. Uncertainty rejected will again become passive. Undertaken uncertainty will be subjected to an analysis that will examine its nature and elements that shape it as well as seek to ensure relative or absolute certainty through mental efforts. The result of such an analysis may be even more uncertainty, a return to the initial state, or a decrease in uncertainty. Nevertheless, the complete elimination of uncertainty does not seem possible'*²¹. Perception and risk acceptance are complex problems for many reasons. Difficulties in defining and estimating risk are addressed in different fields of science. It should be stressed, however, that risk assessment or risk control is a matter of choice of values. Research on the relationship between risk processes and their consequences is associated with a great deal of uncertainty because, as R. Borkowski emphasizes: 'Science by no means approaches the truth, but it creates partial and esoteric visions in-

²⁰ P. L. Bernstein, A. Damodaran, *Zarządzanie inwestycjami*, K. E. Liber Publishing House, Warsaw 1999, p. 172.

²¹ P. Jedynak, S. Szydło, *Zarządzanie ryzykiem*, Ossolineum, Wrocław, 1997, p. 10.

stead of a coherent picture of reality.²² This causes a series of complications within predicting phenomena, and thus in defining the chance and risk of events.

The problem of risk is of interest to researchers for practical reasons, particularly from the point of view of preparation for risk occurrence that is taking risky activities and readiness to take risk. At the same time, the risk is described as objectively existing, and risk awareness as a way of perceiving it by the acting entity. W. Sztumski believes that: 'Education to risk has become an important moment in shaping the personality at the current level of development of the social sphere and in connection with the turbulent technical, scientific and socio-cultural changes, when together with the democratization process and the tendency towards liberalism, the inviolable so far principles, truths and norms are questioned or even rejected'²³.

It is generally accepted that the risk may be present in the necessary (necessary risk) or voluntary (voluntary risk) activities, while research shows that people underestimate the voluntary risk and overestimate the risk that is necessary. At one and the same time people commonly underestimate risks that they can control and overestimate the risk out of their control.

The risk assessment is therefore dependent on the number of situational and personal-ity factors, among which the theory of decision specifies: vulnerability to risk and aversion to risk. These factors are directly related to perception (perceptiveness) and acceptance (willingness to take) risks. P. Sienkiewicz believes that: 'Risk perception is a process of creating a subjective image of a risky situation in the mind of a person, while the risk acceptance refers to the individual or group attitude to certain values, at the loss of which they are exposed as a result of actions taken'²⁴.

Repeatedly, researchers point out that people are essentially different in terms of 'perceiving' risk, and therefore some attach more importance to how much (how many) can be lost, and others - how significant the likelihood of suffering losses is. In the theory of decision it is considered that the risk bond with only one parameter - the magnitude of loss or its probability - is erroneous and hence it is postulated to include both parameters in research. The perception of risk is closely linked to the awareness of risk, which W. Sztumski defines as follows: 'Risk awareness is understood as the perception of objective uncertainty of the course of processes that are taking place in the world by a given individual as well as the unreliability of his/her actions and creations'²⁵.

The risk awareness is also connected with a willingness to undertake risky activities where success is unpredictable, i.e. readiness to risk. A risk-conscious decision-maker who is ready to take risky actions does not avoid them, reckons with any dangers re-

²² R. Borkowski, (1994). *Teoretyczno-metodologiczne problemy rozważań nad ryzykiem. Społeczeństwo a ryzyko*, (sci.ed. L. W. Zacher, A. Kiepas), TRANSFORMACJE Educational Foundation, Warsaw-Katowice, p. 2.

²³ W. Sztumski, *Ryzyko i świadomość ryzyko. Społeczeństwo a ryzyko*, Warsaw-Katowice 1994, p. 10.

²⁴ P. Sienkiewicz, *Zarządzanie ryzykiem. Społeczeństwo a ryzyko*, Warsaw-Katowice 1994, p. 45.

²⁵ *Ibidem*, p. 14.

sulting from uncertain effects of these actions or the possibility of failure. In short, he/she recognizes that risks cannot be eliminated and considers risk orientation in the process of making strategic decisions as natural²⁶.

It was found that readiness to risk depends on many factors such as the characteristics of a person, the analysis and assessment of the degree of risk, awareness of benefits derived from taking risks, the will to impress others with courage, intention to defend the ethical, ideological, religious values, fear of the loss of authority or failure and disappointment, etc. One of these factors reinforces the willingness to risk, while others weaken it. Therefore, like other personality traits, risk readiness can and should be shaped in the upbringing and educational process. The ability to assess the degree of risk is an essential part of risk awareness, which is generally understood as a consciousness of a threat of uncertainty and possible failure, thus rather a consciousness of negative effects of decisions taken.

According to many researchers, risk awareness should also include positive effects of decisions made. It is even considered that, for practical reasons, 'positive' risk awareness is more important than 'negative' because it generates the so-called 'positive moment of risk-readiness' that is necessary for any forms of intentional activity.

The overall assessment of the degree of risk is influenced by various factors: objective and subjective, rational and irrational. Objective and rational factors should play a key role. However, the awareness of risk in its negative aspect causes a reluctance to take risks. Then it is perceived through subjective feelings unreasonable from the point of view of knowledge of risk, intuition, as well as stereotypes resulting from irrational premises, which are most often transmitted in the process of education and inheritance and are reinforced on the basis of tradition and cultural transmission.

It is known from practice that there is a certain group of people who behave consistently when they face risk, since they prefer a similar level of risk both in the effective and random type systems. The consistency of these people's behavior can be considered as proof that they have a personality trait called 'risk-vulnerability'. Depending on the severity of the trait, there are hedgers who are averse to risk in any decision-making tasks, and those who 'like' risk - it is of positive value for them. Although there is no definite reference to this opinion, most studies conducted by psychologists have proved that there is no basis to support the thesis on the existence of a permanent personality trait called a risk predisposition. J. Koziński agrees with the above conclusion when writing: '... on the basis of knowledge acquired so far, it seems almost certain that tendency and aversion to risk are not personality traits'²⁷.

Another problem is that 'extracting' in people certain aspects of risk can mean quite different things. In the experiments carried out the respondents were asked, among others, to express their opinion on the riskiness of a given lottery, or to compare two

²⁶ E. Urbanowska – Sojkin, (2015), *Orientacja na ryzyko w procesie podejmowania decyzji strategicznych*, [in:] Journals of Science of the University of Szczecin, Szczecin, No. 39 Vol.4, Management, p. 306.

²⁷ J. Koziński, *Psychologia teorii decyzji*, Warsaw 1997, p. 367.

or more lotteries in this respect and order them according to the principle of increasing risk. At other times, the respondents selected the lottery (of a few or more) they would like to play, and on this basis the criteria that they had been guided by in their choices were determined. In most cases the magnitude of the risk assessed was dependent on one of the dimensions of a risky situation, but in different studies the dimensions were different. According to J. Koziellecki, who follows behind Edwards, this dimension is the probability of a loss (a defeat). He also stated that many of the respondents revealed strong preference in terms of determining probability. They preferred lotteries where the probability of losing (and winning) is 50%, and they rejected lotteries with more varied probabilities.

The presented review allows the conclusion that in principle the researchers have not been able to unequivocally resolve what element of a given decision situation fundamentally influences the assessment and perception of risk. There are different reasons for such a situation. One of them is that the issue of perception was not always clearly differentiated from the perception of risk, while it should be emphasized that it is not easy and simple.

Another cause for this may be the unnatural nature of the tasks set to the respondents and too abstract manner of their analysis. This allegation stems from the fact that the tested combinations of the two basic dimensions of lottery risk (loss and its probability), as well as the expected loss or variance, are considered too abstract and 'sophisticated' to allow the respondents to process information in crisis situations. Asking the question of how risky a lottery is or which of the two lotteries is more risky is already trying to figure out how the term 'risk' is understood and used. Therefore, it should not be surprising that the respondents attributed different meanings to the concept depending on situational contexts.

It should be noted that in recent years the scope of research on threats has been widened and methods of assessing their risks have become more extensive. The results of comparative research on risk perception have been considerably deeper than those of risk studies that were limited to lottery experiments conducted under controlled laboratory conditions.

Lech W. Zacher emphasizes that if today there is more and more talk about uncertainty and risk or threats, it is not because one is a pessimist or a nihilist, but in order to change the modern world and the existing reality, to alarm, to accumulate counter-measures to achieve a certain - at least limited in time and space - local progress. Effects of rational decisions can be an example of such progress²⁸.

A decision is the consequence of choosing one of many alternative solutions, without the full knowledge of what consequences it might bring. A decision makes sense only in a specific area of uncertainty. In situations where everything is clearly defined and strictly determined and can therefore be accurately predicted, then decision-making cannot be talked about. The act of will would be replaced by logical reasoning. This is

²⁸ L. W. Zacher, (1994). *Socjologia ryzyka. Próba nowej subdyscypliny, Społeczeństwo a ryzyko*, transformacje Educational Foundation, Warsaw-Katowice, p. 27.

because *'Decisions cannot be taken either in a world in which absolute chaos or a coincidence would occur, or in a world where everything would be strictly determined or could be enumerated. Decisions can only be made reasonably where there is uncertainty and opportunity, possibilities for advantageous or unfavorable decisions, in a world in which risk is present'*²⁹.

J. O'Shaughnessy assumes that *'every problem consists of categories of description, explanation, prediction, evaluation and recommendation for action. Rational methods have been developed for each of these elements that could be useful for solving problems that have no precedent-setting solutions'*³⁰.

4. GENERAL ASSUMPTIONS OF THE DECISION – MAKING PROCESS

The decision-making process aims at solving a variety of problems³¹. In the common sense, a problem is an issue, a matter to be resolved. Being generally understood it is not always a decision problem. This kind of problem (a decision problem - Z.Ś.) is dealt with when a deviation appears *'between what should or could be and what currently is'*³². Such a notion does not fully exhaust the entirety of the subject matter. This reservation is mainly due to the fact that it does not include setting objectives, which does not necessarily involve a deviation. Therefore, when analyzing the literature of the subject, slightly different definitions of *'problem'* can be found. It is sometimes suggested that this term should be understood as a kind of task (situation) that cannot be solved with current knowledge resources (e.g. J. Koziński). Authors or persons identifying themselves with this understanding of *'problem'* claim that the solution may be reached through productive thinking enriching the existing knowledge³³. In this case, the level of mental involvement may vary depending on the complexity (difficulty) of a problem.

Both in the planning process and during the plan implementation, it is difficult to determine unequivocally which decisions and when are to be taken. It is therefore worth following certain rules of conduct. Problems ought to be selected and categorized according to their complexity or the impact on the plan implementation, e.g. by means of the questions:

- Can a problem be coped with easily? This kind of question (doubt) emerges from the fact that a head (a manager, a commander) does not have to deal with everything, decide on everything. If he did, he would *'drown'* in detail, would not focus on issues that matter to the organization. A correctly acting head cannot replace subordinates or limit previously delegated authority;

²⁹ W. Sztumski, *Ryzyko i świadomość ryzyka ...*, op. cit., p. 16.

³⁰ J. O`Shaughnessy, *Metodologia decyzji*, Warsaw 1975, p. 14.

³¹ W. Walczak, *Czynniki i uwarunkowania wpływające na decyzje w zarządzaniu organizacją*, E-mentor No 3 (45) / 2012, [online]. [access: 13.11.2016]. Available on the Internet: <http://www.e-mentor.edu.pl/artukul/index/numer/45/id/933>.

³² W. Flakiewicz, B. Wawrzyniak, *Decyzje kierownicze – Teoria i praktyka*, Warsaw 1975, p. 35.

³³ J. Koziński, *Rozwiązywanie problemów*, Warsaw 1969, p. 14.

- Will the problem resolve itself? Problems should be classified in order of priority. Those placed at the bottom of the list will probably resolve themselves. Perhaps some of the problems will become outdated over time;
- Should I decide everything? When planning, a supervisor ought to consider whether everything is to be planned in detail. Maybe he/she will not be able to or will not have to settle everything in person. It may be justified to leave the margin for maneuver for executives who are closest to the problem they are facing. It is known from practice that those who are closest are most familiar with the matter and are the most competent to decide.

From the presented considerations, mainly relating to the planning process, it is also evident that decisions can be planned and unplanned (ad hoc). They may refer to issues (problems) that can be foreseen and problems arising in the course of plan realization - actions aimed at achieving an objective (objectives) of an organization.

Information plays an important role in the decision-making process. Information has certain properties. A number of characteristics and properties of information can be found in the literature of the subject. Most frequently it is mentioned that information is varied and independent of an observer (objective), is an inexhaustible resource, can be replicated, transmitted over time and space and can be processed without causing it damaged (exhausted). It is also clear from the cited terms (definitions) that the same information has various meanings for different users, which also results from subjective assessment and differentiated impact on processes and phenomena occurring in an organization.

Information is constantly dealt with. Using military terms, it attacks us almost continuously, and its content is varied. The news is indispensable to living in today's world. It is a kind of basis for understanding the occurring transformations and happening events. Information is a factor used by people, living organisms or equipment for efficient and purposeful operation and also a factor that reduces the ignorance of a receiver operating in an environment (external environment).

The value of information is inseparable from its actuality. The greater value (greater usability, preciousness) information has, the more it responds to the specific needs and requirements of its recipient. One of these requirements is actuality. In order to make it possible to take optimal decisions, information must be delivered in time sufficient to take action - to make resolutions. When this is impossible, corrective measures must be applied before a significant deviation from the plan or standard is reached.

No one needs to be convinced that a decision maker must have the appropriate amount and quality of information to make the right decision. In practice, a decision maker is often overwhelmed with irrelevant and useless information. From the enormous amount of original messages, he/she must select information that is useful at a given time and situation, which constitutes a negligible part of the total information received. Therefore, the principle of information selection, also referred to as 'Rule 20-80', is indispensable for any managerial position (also a command post - Z. Ś.). It turns out that only 20% of the information reaching the management concerns key issues

and it decides in 80% on the results of operations. Identifying the critical information pool is the principle of reduction with regard to handling information. The reduction consists in the ability to determine the quality of information for a given type of decision and the abandonment of insignificant information. However, a lot of experience is necessary in order to be able to quickly carry out the reduction of information and to use relevant information for further activity.

A decision is based on information. Problems are faced on the way of its flow, collection, processing, sharing and management. All this makes that it is not so simple to make a rational decision; it is a process consisting of many operations (activities) that should be accomplished not only in the correct manner, but also in the relevant order.

The issue becomes complicated not only because of the complexity of the decision-making process. The rationality mentioned above can also be interpreted in various ways. Prof. T. Kotarbiński distinguishes rationality in the material sense and rationality in the methodological sense³⁴. If rationality in the methodological sense does not give rise to objections, the same cannot be stated with regard to rationality in the material sense. It not infrequently happens that rationality in the material sense is perceived as rational in the substantive sense, which seems to have a specific subtext focused on the substantive side, and thus on facts, events and things as well. This means that when talking about the relevance of a decision, its adaptation to reality, or in other words - about its effect, it regards substantive rationality, i.e. rationality in the material sense. But when talking about the way it was taken, the methodological rationality is in mind.

The opinion on what is understood by substantive and methodological rationality and the relationship between them divides the management theorists into those who are inclined to the conviction of the rational nature of a human and those who do not share this view. The proponents of the view of the rationality and purposefulness of human activity adopt the assumption that a human can make only rational decisions, i.e. optimal - the best possible in a given situation. Others think that methodologically correct decisions are those made in a manner consistent with the knowledge of how to make decisions, which is often understood as a way to follow the assumptions of the theory of decision making. They also claim that the way of making decisions determines its substantive rationality, and from this it can be concluded that the most important factor in improving decision-making is mastering techniques in this field. There is a numerous group of people who are of the opinion that the relevance of a decision in terms of methodology should also indicate its correctness in substantive terms.

In the literature of the subject, the decision-making process is most frequently identified with the problem-solving process. It is generally assumed that deciding is making a non-random, and therefore deliberate, choice of one possible way of proceeding. The decision cycle results in a decision, i.e. the act consisting in choosing one variant of solution from among many (at least two) possible ones in a given situation.

³⁴ More: T. Kotarbiński, *Traktat o dobrej robocie*, Wrocław 1973.

Since decision-making is a sequence of actions, it seems reasonable to explore the views on this subject. J. Kurnal believes that the decision-making process consists of two phases: preparation and taking a decision³⁵. In turn, when defining the decision-making process, W. Kieżun claims that it consists in processing input information into output information³⁶. According to him, the input information includes messages, reports, instructions as well as knowledge and experience, while the output information: directives, ordnances, orders and commands. L. Ząbkowicz presents slightly different position. In his opinion the decision-making steps are: defining the subject matter of a decision and its purpose, gathering necessary information, developing assumptions adopted for the decision, defining principles and ways of implementing the decision, as well as establishing rules and monitoring the decision realization. A. Czermiński and J. Trzcieniecki³⁷ present another interpretation of the decision-making process and they believe that the decision-making cycle includes the following stages: identification of a problem, gathering information, determining the possibility of obtaining a result with a certain value, clarifying the decision criterion and choosing. M. Zdyb's position in this regard is very interesting, since he distinguishes stages instead of phases of the decision cycle. These phases are: identifying and defining a decision problem, shaping the decision (solution), choosing and specifying the decision³⁸. Oftentimes it is argued that the decision-making process consists of the following phases: problem identification and diagnosis, solution search, decision, assessment of change effects.

Since decision-making is a peculiar type of activities staggered over time, according to some authors, the description of the decision cycle consistent with the postulate of 'common sense' should assume the following sequence of consecutive successive actions:³⁹

- formulation of an objective;
- defining the criterion of choice that is a derivative of the objective pursued;
- designing decision options;
- assessment of hypothetical effects of implementation of particular variants with regard to the context;
- selecting, by reference to the criterion chosen, the most appropriate decision option.

The review reveals a fairly wide range of views on the number of phases, stages and decision-making activities. This discrepancy is, however, of apparent nature. The common feature of the distinguished elements of the decision-making process is that they represent a logical sequence of actions leading to an optimum solution.

³⁵ J. Kurnal, *Zarys teorii organizacji i zarządzania*, Warsaw 1994, p. 186.

³⁶ W. Kieżun, *Sprawne zarządzanie organizacją*, Warsaw 1997, p. 299.

³⁷ A. Czermiński, J. Trzcieniecki, *Elementy teorii organizacji i zarządzania*, Warsaw 1974, p. 74.

³⁸ M. Zdyb, *Istota decyzji*, Lublin 1993, pp. 127-128.

³⁹ A. K. Koźmiński, W. Piotrowski, (sci.ed.), *Zarządzanie. Teoria i praktyka*, PWN, Warsaw 2000, p. 92-93.

Solving a decision problem does not always require detailed and complex actions. This is due to preliminary assessment of a problematic situation, the probable result of pilot studies and observed symptoms of deviation. Then, a decision may take a slightly different form with respect to the nature, scope and time of diagnostic procedures. The point is that modern leaders cannot accept solutions and make decisions that are not prepared, are formulated under the pressure of time, based solely on their own experience or confidence in their own infallibility.

5. A LOOK TO THE FUTURE

The author points out again that the times we are living in are a time of vehement transformations, turbulences and turmoil. It is no longer the same 'cozy' world that existed yet until recently. The years, when an organization was able to function smoothly, without any risk of introducing radical changes, has irretrievably gone to history. In the new conditions of an organization's functioning, much more is expected from it. It is imperative that consistent action is taken to safely pass through any turbulence and violent change. It is necessary to be flexible in action, not more than once on the risk threshold. Flexibility should also characterize the decisions made. Future thinking is also indispensable, reflecting on its consequences, both in the near and distant future⁴⁰.

Today's times are characterized by rapid technical progress, which is noticeable at every step, in almost all areas of activity. If one adds unstable political systems, changes in human behavior, dynamically developing and equally fast failing businesses, ubiquitous competition, we have real conditions for the functioning of contemporary organizations. However, the need to anticipate new challenges should be borne in mind, without which it is difficult to imagine not only being a leader, but also surviving on the unpredictable market of the 21st century.

The above discussed facts, in conjunction with previously mentioned conditions of functioning of modern organizations, accentuate the specific foundation on which each supervisor should, in fact is forced to, base every action and decision. Information constitutes such ground. Without information it is difficult to find sources of competitive advantage not only in the real but also in the intangible spheres, the important elements of which are information and informational processes.

Nowadays, one often deals with a virtual organization, which is a dynamic management tool, based on computer networks and possibilities of using information banks, including the Internet. Virtual management is primarily based on developed electronic and IT systems. The main organization's activities requiring the information flow management, planning, production, services, distribution of products and the use of intellectual property and the promotion of manufactured goods and services are carried out through appropriate electronic and information media. In fact, the entire economic activity of this type of companies is based on universal and common computer networks that have links with general information banks and computerized global and lo-

⁴⁰ More: M. Staples, E. Wighart, E. Philips, *Trafnedecyzje*, Warsaw 1997.

cal market participants. This concept perfectly illustrates how necessary information has become in the life of every organization and thus in the work of every manager, and even more, an euro-manager who must be prepared to act on a continent-spanning, or even larger, scale. The decisions made by him/her will also have a high species weight.

Information is everywhere - in every area of life. Deciding on e.g. choosing a route to drive, the manufacturing process and its components, the purchase of household appliances, etc., is based on information. It is the same resource as raw materials or cash for a manager, and he/she must track and manage it so as to ensure its efficient and effective use. His/her decisions are based on information not only possessed but also this necessary to be acquired.

Many tasks assigned to the organization management include the acquisition of necessary information and its skillful use (consumption). Practice shows that the wider and richer the information available to decision-makers, the more easily they can control the real, everyday needs and capabilities of managing an enterprise, and more confidently shape its future and its relationships with the environment. Reliable information and its proper flow have a great impact on people's behavior and operating; it constitutes an art of mobilizing and stimulating everything and everyone contributing to the execution of tasks and influencing the management processes. It makes it possible to capture occurring changes, formulate right assumptions, and select the most likely future operations. In a modern organization, information becomes the basic factor of management, without which it is difficult to solve problems fast and efficiently as well as achieve success. It is relevant to use not only information sourced from the organization itself. Sometimes messages from outside the enterprise are more important. That is why the constant provision of new valuable information about emerging trends, competition, the labor market and, above all, customer needs and tastes, allows the analysis of forces, events, and phenomena that may be essential for creating a company's market policy and development strategy.

Meeting the demands of dynamically changing markets and responding effectively to environmental changes requires a decision maker to have the ability to acquire and process information. He/She must appreciate the role of information as a factor for creating competitive advantage that is indispensable for all decisions. This requirement draws attention to the obligation to equip a company's product with an informational component in the form of what a potential buyer must know in order to buy the product and use it. A modern manager must not forget that information received on the basis of which he/she makes decisions is as significant as information shaped by him/her and addressed to other recipients. Recipients of this information are primarily two groups, of great importance for an organization - employees and customers. It is clear from the general assumptions of human resource management that employees want to be fully informed about everything related to their tasks and personal affairs, as well as to future business activities. Due to this the staff is aware of work objectives, identifies with what and where they do; they regard company's goals as their own. Gained knowledge, skills and qualifications affect their individual attitudes and behav-

iors, which facilitates teamwork and improves the synergy effect. On the other hand, employees are the biggest threat to the company's information resources. Much more often than outside persons they attempt to get into the system and capture important data for themselves - frequently also for competitors. That is why it is important to choose close co-workers who can be trusted and provide certainty that the information will not be passed on to unauthorized persons. In addition, information should be selected so as to encourage the staff to act without fear that the competition will learn the company's strategy and the nature of its decisions made.

Each person has a different vision of the future. The author has emphasized the significance of information that was, is and will be the basis for effective action. The conclusions of the process and the assessment of processes in an organization prove that today's decision-making is very complex. Innovative solutions, which often have a fairly long history, are increasingly being used in decision-making situations, however they are not welcomed in all environments. This reflection refers, for example, to the models of maturity, the already flagged up number theory or the Agile methodologies.

CONCLUSIONS

It must be concluded that the decision-making process is a complex process in which a director (a manager, a commander) of an organization performs a specific role. He/She formulates a decision problem and sets out the desired way to resolve it. He/She also specifies an objective (objectives) of the organization to be achieved as a result of resolving a decision problem. Such resolutions require an interdisciplinary approach to the decision-making process.

The complexity of the decision-making process and the problem (decision) situation makes it impossible to provide a clear model of proceeding. The presented decision cycle model contains such elements (actions) that are suited to tackle identified problems. Repeatedly, however, a slightly different path of conduct may be encountered. Occasionally, mainly due to the nature of a problem and the way in which managerial functions are fulfilled by the head of an organization, some phases can be greatly simplified, at other times - extended. The most essential, however, is to figure out a real way to solve a problem situation.

A multitude of types of decisions exist. There are also many criteria for distinguishing them. What is always meant here is to solve a problem, that is, to choose such a way of acting, which in a given conditions enables achieving a given goal. Effects of decisions made will prove the quality of the managerial function of a person.

By having a well-functioning information system, uncertainty and risk of decisions may be reduced. It is substantial, however, that this system should continue to work so that the set of information needed to make decisions is as large as possible as well as current and reliable.

The decision-making process is essentially based on a cycle of organized activity and abided by the identical principles, laws, and limitations. Scientifically developed tools can find application during its implementation. The process of assisting a decision maker is observed, owing to which he/she can reduce the degree of risk and uncertain-

ty by selecting an option – i.e. making a decision, hence he/she settles an unequivocal resolution.

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