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# Selected Problems of the Decision-making Process in Logistics Companies

Motto

„A logistician is not a human being  
of a different kind,  
it is just that each of us is a different  
kind of a logistician.”  
( - )

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## Abstract

The article emphasises that decision making is becoming an increasingly complex process. This is influenced by a number of factors, in particular by the dynamics of change and the strong influence of the environment. These factors, along with the internationalisation of a number of phenomena, affect the functioning of logistics companies. In order to make correct and effective decisions, information is essential. This information is not always certain (reliable). Uncertainty and risk accompany managers in the logistics industry. In many cases, the complexity of circumstances makes it difficult to ensure that decisions are appropriate to the situation and that they provide a realistic basis for achieving the desired objectives. Interdisciplinary knowledge and a high level of competence of decision-makers in complex decision-making problems are indispensable. Such requirements arise from contemporary conditions. This, in turn, argues for an increase in the competence of the TSL industry personnel.

**Keywords:** decision, risk, determinants, logistics company.

## INTRODUCTION

Contemporary organisations operate in a dynamic and turbulent environment. This fact is not denied by theorists or practitioners. Increasing globalisation,

internationalisation of production and services, accelerated technological development, Industrial Revolution 4.0, demographic changes – these factors, which are increasingly influencing the shape of the new economic system, do not remain without influence on the functioning of modern logistics companies. These circumstances mean that various factors need to be taken into account in the decision-making process. In addition, the decision-makers have to be identified. The staff must have the appropriate skills for the expected tasks, which will be carried out in a dynamic and rapidly changing environment.

The issues of decision-making have long been the focus of academic interest among theorists and practitioners. This is hardly surprising. Decision-making is an integral part of human life. It is, therefore, understandable that much has been said and written on the subject. The available literature provides food for thought, especially today, when we have to operate under highly complex conditions and during rapid and quite significant changes; when it is necessary to make decisions in ambiguously defined situations.<sup>1</sup> The analysis of many studies also allows to conclude that there have been emerging new concepts of decision making, which are a more or less adequate response to the dynamic changes occurring in the organisation and its environment (Redziak 2013, p.103). These definitions are relevant not only to logistics companies.

Having reviewed some monographs, including those that contain research findings, it is reasonable to conclude that most do not directly relate to the TSL industry. We do not see this as a shortcoming. In fact, we believe that since there is a body of material on the theory of decision making, there is a basis for 'overlaying' the specifics or conditions of logistics companies, which will promote rational decisions.

There is a theoretical and a practical dimension to this assumption. However, the point is to use the theory of decision making skilfully in decision making and to use it appropriately in a specific situation – a problem situation (a decision situation). One should have in mind that the theoretical basis facilitates decision making, mainly by exploring and designing options for action depending on different circumstances. Theory helps to increase the accuracy of decisions, it also allows the practitioner to see certain phenomena that would remain unnoticed without the knowledge thereof. All this makes it possible to perceive the future more accurately, because making decisions means anticipating the future. This once again

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<sup>1</sup> [http://www.ue.katowice.pl/fileadmin/\\_migrated/content\\_uploads/4\\_J.Zemke\\_Ryzyko\\_w\\_Aspekcie\\_Zarzadzania....pdf](http://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/4_J.Zemke_Ryzyko_w_Aspekcie_Zarzadzania....pdf), accessed 3.02.2024.

underlines the importance of constantly monitoring all the conditions in which companies operate and the changing environment. At this point, it is worth mentioning that a decision is to action what breathing is to man – it gives life.<sup>2</sup>

Each company operates in its own specific environment and is affected by factors that are not present elsewhere. This, in turn, may give rise to the accusation that not all circumstances have been taken into account or that emphasis has not been placed in the right place. The description of the operating conditions of contemporary organisations may provoke specific reflections. They are usually presented in different ways. This should not come as a surprise to anyone, since the conditions under which economic actors operate are changing so rapidly. Moreover, in today's business environment, where companies are more or less "dependent" on a number of contractors, spread over a large area or even operating in a virtual dimension, it is difficult to present a single condensed picture of what is and (or) what will be in the near future.

We have mentioned the undefinable future in a slightly different context. For we are aware that in some respects this publication will already bear the marks of the past. This is exactly what Wisława Szymborska wrote in her book of selected poems: When I pronounce the word future, the first syllable is already in the past (Ścibiorek, 2021, p. 15).

Regardless of what is said, decisions must be made in every situation. This is an essential area of activity for every manager (supervisor). This task is incumbent on functional persons, regardless of the nature of the company and its conditions. The fulfilment of tasks should lead to the achievement of set goals, primarily to the victory over the competition ("the opponent").

To conclude this part of the article, we would like to point out that the current conditions for the functioning of organisations are very complex. It is worth emphasising, because numerous areas of human life and activity, including the functioning of organisations, have reached a high level of complexity. As a result, every decision-maker has to solve sometimes very difficult problems, e.g., economic, technological and interpersonal. Under such conditions, the decision-making activity, which plays a fundamental role in the management of a given company (institution), becomes increasingly difficult and responsible. Therefore, questions related to the effectiveness and efficiency of decision-making have become

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<sup>2</sup> [http://www.broneks.net/wp-content/uploads/2008/12/25\\_skuteczne\\_podejmowanie\\_decyzji.pdf](http://www.broneks.net/wp-content/uploads/2008/12/25_skuteczne_podejmowanie_decyzji.pdf), accessed 3.02.2024.

fundamental research problems for scientists from many scientific disciplines; in particular, from praxeology, decision theory, operations research, organisation and management theory, psychology, sociology and defence sciences. The interest of so many scientific disciplines in the same problem undoubtedly stems from the fact that efficient decision-making is the essence of all human action.

The content of the article deals with a variety of decision-making issues. Although the title emphasises logistics companies, in many cases the issues presented have a somewhat broader dimension and are often very close to universal issues. This was done mainly to strongly emphasise that the solutions adopted in logistics companies are quite specific, yet embedded in a general decision-making theory.

## 1. LOGISTICS COMPANY AS A SYSTEM

All organisations function in the reality that surrounds us. They are created to fulfil strictly defined purposes. Each of these organisations, as a system, regardless of its operating conditions, fulfils a specific role in meeting social needs. Companies, including the logistics companies, are capable of performing long-term tasks, are in a state of exchange of matter, energy and information with the environment and strive to maintain a dynamic equilibrium (Penc, 1998, p.22). They employ people who are not only involved in achieving the outlined objectives and/or fulfilling a specific function.

Logistics companies need to be familiar with a number of mechanisms if they are to function efficiently and effectively. In order to be successful, it is essential to skilfully apply the lessons learned from the ongoing internationalisation of many processes. The global (globalisation), European (integration) and national (fragmentation) dimensions of the processes taking place are not without impact on what happens in a particular company. The scale of this impact varies and depends on a number of factors, such as those related to the territorial distribution of the organisation, its structure and the nature of its activities (Witczyńska, 2018, p.111).

It is therefore essential to adapt to the demands of the environment and to make appropriate changes. These changes are necessary for the development of the organisation and require its elements to adjust and adapt to the environment. The effort must be made to maintain harmony with the changing environment, which has a significant impact on any logistics company, which, in order to be successful,

must constantly modify its rules of conduct and recognise the changing tastes and expectations of customers – the recipients of its final product.

In the context of the questions raised, it is useful to emphasise the fact that every logistics company (a specific system) functions by remaining in a close relationship with its environment. The company receives inputs (energy, living labour, raw materials, labour resources, etc.) and information (parameters, indicators, regulations, market information, etc.) from the environment through inputs. In turn, through outputs, the system transmits the goods and services produced, as well as information and waste to the environment. This is possible because there is a process of transformation (conversion) of inputs into outputs within the system. This takes place with the help of available technologies, purposefully designed structures and the active participation of people with appropriate knowledge and skills.

The questions raised clearly highlight not only the issues of decision-making, but also the functioning of the information system of the logistics company. The basic function of this system is to collect, store, process and transmit information that controls the executive process, which shall be discussed in more detail in the next section of the article. This means that in this system, the management subsystem performs the functions of overall planning, organisation, motivation and control for the executive subsystem.<sup>3</sup> The management subsystem is, therefore, a special subsystem in the organisation; it is the one that fundamentally determines the correct functioning of the organisation as a whole. The importance of the information system for efficient management is pointed out by W. Kieżun, who formulates the thesis that the degree of efficiency of communication between parts of the organisation and the environment, and between the organisation as a whole and the environment, has a direct causal relationship with the efficiency of the organisation as a whole (Kieżun, 1997).

Today, all organisations operate in a constantly and rapidly changing environment that affects their activities to a greater or lesser extent. This environment is highly unpredictable, surprising, volatile, competitive, with strong customers and tends to accelerate. Changes in the political, economic, social, technological and environmental environment force organisations to constantly adapt to it by applying appropriate adaptation processes.

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<sup>3</sup> [https://mfiles.pl/pl/index.php/System\\_informacyjny](https://mfiles.pl/pl/index.php/System_informacyjny), accessed 31.02.2024.

## 2. THE IMPACT OF GLOBALISATION ON THE FUNCTIONING OF LOGISTICS COMPANIES

We would like to emphasise once again that the current conditions in which logistics companies carry out their tasks are extremely complex. In this situation, with such a variety of conditions, each manager (supervisor) has to solve sometimes very complex problems, for which interdisciplinary knowledge is indispensable. The solution of complex and systemic problems requires qualified managers at various levels, while the proper performance of managerial functions requires professionals who, in addition to knowledge and qualifications, possess certain personal predispositions. The modern manager of a logistics company should not only be an expert in a specific field. He or she must have knowledge and skills in many areas. It is important that one continually improves his or her knowledge and skills once they have been acquired. This is fully in line with the definition of M. Jabłoński, who states that competences are knowledge, skills and attitudes, expressed in the form of behaviours, which are a condition for success in a given work position (Jabłoński 2011, p.42). This author strongly emphasises the need to increase or improve these competences, which nowadays become obsolete relatively quickly (Markowski, 2003, p.16; Drucker, 1992, p.66).

Globalisation and the internationalisation that goes with it are now an integral part of the processes involved in the functioning of the TSL industry. On the one hand, these phenomena lead to the spread of certain cultural, technological and legal processes across regional, national or continental borders, and, on the other hand, to a significant increase in economic links and economic dependencies on a global scale, so that there is an interplay of events at local, national and global levels (Sajkiewicz, 2008, p.13). These factors are not without influence on business transformation. However, in order to effect change, it is essential to have a positive attitude from the entire workforce of the organisation, with management at the forefront. In order to bring about change, employees need to be enthusiastic, convinced of the need for change and convinced of the legitimacy of this undertaking (Ścibiorek, 2005).

The increasingly global nature of production, purchasing and distribution processes is a key 'megatrend' shaping the planning and execution of logistics tasks within new (modern) supply chains. Modern logistics needs to generate the kind of capabilities that will enable it to successfully fulfil the tasks required of it in current and future circumstances. This is made all the more difficult by the fact that these changes

have to meet the challenges of the future, which are very difficult to define clearly. This also applies to issues related to the search for more environmentally friendly solutions, which is one of the current priorities. The search for environmentally friendly logistics solutions is also an impetus for the creation and search for modern and innovative technologies.<sup>4</sup> As a result, the process of modifying the model of logistics functioning and its tasks is continuous, resulting in permanent changes within existing logistics companies, especially in the face of national, regional and global competition (Bujak, 2024, p.2).

In the context of the occurring changes, it is necessary to take a specific (international) perspective on a number of phenomena related to a particular company. It is important to bear in mind that there is no single, universal management style that “works” in all countries and in all industries. To be successful today, one needs to be able to operate in a multicultural environment, which is important for the TSL industry. The results of many logistics companies show that the combination of different cultural elements has a positive synergetic effect. It is no longer enough to know how to do business on a national level. In turn, one needs qualifications, theoretical and practical knowledge of management methods and techniques in an international environment. Creativity, diplomacy and negotiation skills are also important. This once again underlines the need, or even the necessity, to improve skills that are changing along with the occurring transformations.

Globalisation processes have led to the overlapping and intermingling of management systems, resulting in new linkages and interactions in all areas of the life of organisations and societies. Events, decisions and actions in one part of the world have significant consequences for individuals, companies and entire societies, even in remote parts of the world. It is the detachment from national roots and the territorial dispersion of many nodal and yet strategic areas of organisational activity (Malachowski, 2006, p.12). The tightening of interdependencies leads to the shrinking of space-time (compression of time and space). Globalisation is a driving force behind the need for continuous improvement of decision-making processes in logistics companies. There is a constant need to make decisions, which in fact boils down to solving decision-making problems.

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<sup>4</sup> <https://www.sap.com/poland/insights/green-logistics.html>, accessed 2.02.2024; <https://way2send.pl/ekologistyka-jakie-rozwiazania-we-wspolczesnej-logistyce-sa-eko/>, accessed 2.02.2024.

International logistics is one of the fastest-growing areas of science today and plays a significant role in the process of internationalisation.<sup>5</sup> This process is considered as a type of economic activity carried out abroad and is analysed from the perspective of the process of internationalisation of the activities of a given company. The internationalisation of logistics takes place at each stage of the internationalisation of a company. It is now recognised as the epicentre of business transformation, which is aimed at integrating the various activities of management into a coherent whole. As a result of the globalisation of the world economy, the integration of sourcing, production, and marketing between companies on different continents is becoming increasingly important.<sup>6</sup> This state of affairs does not go unnoticed when it comes to solving decision-making problems in logistics companies.

### 3. INFORMATION IN THE DECISION-MAKING PROCESS

The decision-making process aims to solve a variety of problems (Walczak, 2012). In colloquial terms, a problem is an issue or a matter to be resolved. However, in this common understanding, it is not always a decision-making problem. We deal with this type of problem (decision problem – as emphasised by Z. Ś.) when there is a discrepancy “between what should or could be and what currently is” (Flakiewicz, Wawrzyniak, 1975, p. 35). This presentation of the concept does not fully exhaust the issue. This reservation is mainly due to the fact that it does not include goal setting, which does not necessarily involve deviation.

Decision making is always based on a specific set of information available to the decision maker. This person must have an adequate information system that provides him or her with the information needed to identify the problem, all the circumstances and conditions involved.

The above statement follows from the fact that information is the basis of decision-making. It is the basis for accurate decisions.<sup>7</sup> If the right information cannot be obtained, decisions must be based on assumptions, feelings and guesses. Information is the material from which a decision is formed, which is the information for subsequent decisions and for the decision makers (Krztoń, 2017, p.87). Thus, a decision is

<sup>5</sup> [https://mfiles.pl/pl/index.php/Logistyka\\_mi%C4%99dzynarodowa](https://mfiles.pl/pl/index.php/Logistyka_mi%C4%99dzynarodowa), accessed 31.01. 2024.

<sup>6</sup> [https://www.wbc.poznan.pl/Content/339220/PDF/Rogaczewski\\_Robert-rozprawa\\_doktorska.pdf](https://www.wbc.poznan.pl/Content/339220/PDF/Rogaczewski_Robert-rozprawa_doktorska.pdf), p.7, accessed 2.02.2024.

<sup>7</sup> <https://www.logistyka.net.pl/bank-wiedzy/item/83429-uwarunkowania-dzialan-i-decyzji-w-systemie-logistycznym-wybrane-przyklady>, accessed 1.02.2024.

a certain type of information, which, in addition to the knowledge of reality, carries the factor of shaping the future. In the decision-making cycle, there may be different objectives at the same time, sometimes even in conflict with each other. However, the objective or objectives of the decision should always be translated into criteria that allow a choice to be made among the options for solving the decision problem.

Information plays an important role in the decision-making process. Information has certain characteristics. A number of characteristics and properties of information can be found in the literature. The most frequently mentioned are that information is diverse and independent of the observer (objective), that it is an inexhaustible resource and can be reproduced, transferred in time and space, and that it can be processed without being destroyed (consumed). It is also clear from the terms (meanings) cited that the same information has different meanings for different users, which is also a result of the subjectivity of evaluations and the different impact on processes and phenomena occurring in the logistics company.

Information is a factor that people, living organisms or devices use to act efficiently and purposefully; it is a factor that reduces the ignorance of the recipient operating in external environment.

Information is everywhere – in every aspect of our lives. We rely on information to make decisions, whether we are choosing a route to drive a car, a production process and its components, or when we are buying household appliances. For any manager, information is as much a resource as raw materials or cash – one needs to keep track of it, manage it to ensure it is used efficiently and effectively. When making decisions, managers rely on information – and not only the information they already have, but also on the information they need to acquire.

The value of information is inextricably linked to its timeliness. Information becomes of greater value (greater utility, increased usefulness) the more it meets the specific needs and requirements of its recipient. One such requirement is timeliness. In order to make optimal decisions, information must be provided in time for the action – the decision making. If this is not possible, corrective action must be taken before a significant deviation from the plan or norm occurs.

No one needs to be convinced that a decision-maker requires the right quantity and quality of information to make the right decision. In practice, the decision maker is often inundated with irrelevant and useless information. From the vast amount

of primary information he or she receives, the person has to select the information that is useful at a given time and in a given situation, which represents a negligible part of the total information received. This is why the principle of information selection, also known as the “20-80 rule”, is indispensable for any job. Indeed, it turns out that only 20% of the information that reaches management concerns key issues and 80% determines the results of the activity. Identifying the pool of critical information is the principle of reduction when working with information. Reduction involves the ability to determine the weight of information for the type of decision to be made and to dispense with insignificant information. However, it takes a lot of experience to be able to reduce information quickly and to use relevant information in subsequent activities.

**Information is the basis for decisions.** Problems arise along the way of the flow, collection, processing, sharing and management of information. All this means that making a rational decision is not a simple thing – it is a process consisting of many operations (activities) that should be conducted not only in the right way, but also in the right order.

It follows that a relatively large amount of information is essential for a reasonably optimal decision. In addition to this, it is important to keep in mind that the information should be reasonably reliable and timely, which in many cases is of limited availability (Scibiorek, 2018). Nevertheless, our information (perception) about the problem situation should be the greatest possible, approaching the limits of what is possible. This is because it can guarantee that the effects of the decisions taken will oscillate around 100 per cent success.

In addition to reliable information, time plays an important role in the decision-making process. There are many ways of looking at this factor. We shall highlight just two. First, time affects the credibility of information, which can lose its value in a lengthy decision-making process. Secondly, in the dynamic environment in which logistics companies operate, postponing a decision may result in a particular opportunity or business opportunity not being seized.

Reliable information and the right flow of information have a major impact on people’s behaviour and conduct, are the art of mobilising and stimulating everything and everyone involved in tasks, and influence management processes. They make it possible to understand the changes that are taking place, to formulate the right assumptions and to choose the most likely courses of action in the future. Today, information is becoming a fundamental factor in management, without which

it is difficult to solve problems and achieve success quickly and effectively. It is important not only to use information from within the organisation. Sometimes, the news from the company's external environment is more important. Therefore, a constant supply of valuable new information on emerging trends, competition, the labour market and, above all, the needs and tastes of customers, make it possible to analyse the forces, events and phenomena that can be decisive for the creation of a company's market policy and development strategy.

All real-world decision-making situations involve risk, because every decision is made with incomplete and uncertain information. It is safe to assume that historical and diagnostic information is incomplete, while predictive information is inherently uncertain. Every decision is therefore made under conditions of greater or lesser risk.

#### 4. UNCERTAINTY AND RISK

The approximate conditions of contemporary organisations, with a focus on logistics companies, allow us to conclude that a characteristic of the management process is uncertainty about the context of the decision problem. The extent of this uncertainty can be smaller or larger, in some cases it can even be zero. Because of the degree of uncertainty present in the management process, one, therefore, speaks of decisions made under conditions of uncertainty, risk and certainty. At the same time, making decisions under conditions of uncertainty is much more difficult than making decisions under conditions of risk (Tyszka, 2010, p.28). It should be stressed that risk is a function of uncertainty, and this function has the character of a simple relationship: the greater the degree of uncertainty, the greater the risk; and, vice versa, as the indeterminate and uncertain factors decrease, so does the risk (Olkiewicz, 2012, p.557).

The results of a number of studies indicate that there is a need for continuous improvement in the decision-making process. It is also necessary to study the course of organised action, to verify hypotheses, and practical recommendations and conclusions should be reflected in relevant studies. J. Koziół (Koziół, 1998, p.5) stresses that the conclusions derived from the theory of decision-making, despite being increasingly popularised in the literature, are not very applicable in practice, because the decision is always made in a situation of risk and uncertainty. The reasons for this state of affairs are seen in the way the problems described are presented and in the use of descriptive language that is very difficult for the average decision-maker to understand. According to J. Koziół, this state of affairs contributes to

the creation of a kind of barrier to the practical application of one or another scientific theory.

The perception and acceptance of risk is a complex issue for many reasons. The difficulties of defining and estimating risk are addressed in various scientific fields. However, it should be emphasised that risk assessment or risk control is a matter of value choice. The study of the relationship between hazard processes and their effects is fraught with great uncertainty because, as R. Borkowski points out, “science, far from approaching the truth, produces excessively partial and esoteric visions rather than a coherent picture of reality” (Ryzyko (...), 2001, p. 34). This leads to a number of complications in terms of predicting phenomena and thus determining the probability and risk of events. These phenomena are all the more difficult to predict in logistics companies.

It is known from experience that there is a certain group of people who behave consistently when faced with risk, preferring similar levels of risk both in terms of capability-related and random situations. The consistency of these people's behaviour can be taken as evidence that they have a developed personality trait called risk propensity. Depending on its intensity, a distinction is made between risk-averse people, who show risk aversion in all decision-making tasks, and risk-takers, who enjoy risk, and for whom it has a positive value. Although there is no clear response to the above statement, the majority of studies conducted by psychologists prove that there are no grounds to support the above thesis of the existence of a permanent personality trait called risk aversion. J. Koziellecki also confirms the above thesis and states that “...on the basis of the knowledge accumulated so far, it seems almost certain that risk propensity and risk aversion are not personality traits” (Koziellecki, 1997, p.367).

Lech W. Zacher emphasises that if there is more and more discussion nowadays about the risk, uncertainty and threats, it is not because one is a pessimist or a nihilist, but simply in order to change the contemporary world and the existing reality, to sound the alarm, to accumulate countermeasures in order to achieve some local progress, at least such that is limited in time and space. Such progress could consist of, for example, the effects of rational choices (Zacher, 1994, p.27).

## SUMMARY

The times in which we live are full of turbulent change, upheaval and turmoil. It is no longer the same ‘cosy’ world that existed not so long ago. Gone are the days

when logistics companies could operate quietly, without taking risks or making radical changes. In the new environment, much more is required, in particular, of managers. It is essential to be consistent in order to navigate safely through all kinds of turbulence and sudden changes. It is necessary to act flexibly, often on the edge of risk. Flexibility is also required in decision making.

The present reality is characterised by rapid technological progress that affects almost every aspect of our lives. If we add to this the unstable political systems, changes in human behaviour, dynamically developing and equally rapidly failing companies, omnipresent competition, we have the real conditions for the functioning of modern organisations. However, it is important to remember the need to respond to new challenges in advance, without which it is difficult to imagine not only leading but also surviving in the unpredictable market of modern times.

The general conditions of modern logistics companies emphasise the specific basis on which all logistics company managers should, or rather must, base their actions and every decision. This basis is information. Without it, it is difficult to search for sources of competitive advantage not only in the tangible, but also in the intangible sphere, in which information and information processes are an important element.

The selected determinants of the decision-making process emphasise the complexity of the decision-making process and the problem (decision-making) situation. All this means that it is not possible to present an explicit model of how to proceed. The most important thing, however, is to outline a viable way of solving the problem situation.

A well-functioning information system can reduce uncertainty and decision risk. It is important, however, that this system operates continuously, so that the set of information needed for decision-making is as large, reasonably up-to-date and reliable as possible.

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