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UNCERTAINTY DECISION MANAGEMENT - A KEY ELEMENT IN THE CONTINUATION OF THE COMPANY'S ACTIVITY

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Abstract: *In a world of organizations with different typologies, more and more attention is paid to decision-making in conditions of uncertainty, because decision making is an art, but also a science of finding compromises. In management, the decision is particularly important because it offers the possibility to carry out efficiently the company's activities in close connection with the environment in which it operates, to establish and achieve the established objectives. It can be concluded that the managerial decision represents a special form of the decision and constitutes the most active and dynamic expression of the management. The paper aims to use research methods such as observation, synthesis, analysis, grouping and investigation, but also other tools of scientific knowledge to conduct a study on decision management in conditions of uncertainty in a Romanian company. The company recognizes that the success or failure of initiatives, challenges, often depends on how decisions are made. The company is based on a democratic leadership style characterized by a high degree of participation of the work team in making important decisions such as collective and collegiate decisions. This democratic style presupposes a management achieved through objectives, results. The organization is characterized by flexibility, adaptability, high motivation and competence of staff. With the data taken from the company, the graphic material of the work was made, they are interpreted so that the conclusions of the study result. A rich bibliographic material and sites presented at the end of the work on Bibliography were studied.*

Key words: *management, decision, uncertainty, Romanian company, success, failure.*

1. THE CONCEPT OF MANAGERIAL DECISION AND ITS CHARACTERISTICS

The decision represents in the opinion of most specialists in the field the most important element of the management of an organization.

It can be said that decision making is the central activity of the manager. The rest of the activities are carried out to ensure the correct decision-making or, if the decision has already been accepted, to implement and monitor its effectiveness.

Over time and the evolution of management, specialists have tried to define the concept of managerial decision, taking into account all the elements that arise in the decision, achieving a general definition, according to which the decision is the course of action consciously chosen. from a number of variants to achieve one or more objectives.

The decision is present in the managerial area at all levels and has an unlimited scope of inclusion [1].

The difference between the managerial decision and the ordinary, everyday decision of each individual, lies mainly in the level of complexity and in the increased difficulty of the managerial decision in relation to the personal one.

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A managerial decision will be taken correctly and will lead to the achievement of the established objectives, if it meets a series of conditions [2]:

- be the result of choosing from at least two variants;
- be scientifically substantiated;
- to be taken by a person authorized for this purpose;
- be well established, so as not to allow for separate interpretations and to be corroborated with previous decisions on the same subject;
- to be taken at the optimal time;
- to be characterized by simplicity, clarity, exact form, natural succession of notions.

The primary factors that influence the managerial decision are [3]:

- the decision maker can be a manager or a management body that adopts the decision in a certain context, due to its competencies and responsibilities;
- the decision-making environment consisting of exogenous and endogenous elements of the organization that directly or indirectly influence the outcome of the managerial decision.

In practice, in the case of economic agents, the managerial decision comes in two forms:

- decision act;
- decision making process.

Table 1 shows the differences between the decisional act and the decision-making process.

Table 1

Differences between the decisional act and the decision-making process

Characteristics	**Decisional act**	**Decision making process**
Presence in the life of the company	It predominates quantitatively	Qualitatively predominates
Time consuming	Reduced (seconds, minutes)	Great (hours, days, weeks)
Complexity	Low	High
Repetition	Repetitive character	Rare
The variables involved	Known	Most unknown
The basis of the decision-making act	The experience and intuition of managers	Certain employees are consulted to outline the decision-making situation

The decisions we make in our lives whether it is business, savings / expenses, health and lifestyle or relationships, parents, etc. it involves luck, uncertainty, risk and occasional deception.

On closer inspection, it can be seen that in most of our decisions, we do not bet against another person, but we actually bet on the antithesis of all future versions that we have not chosen.

There are two approaches to the decision-making process [4]:

- Descriptive theories that expose the process as it is done in reality by the management of the company based on certain notions and managerial concepts, which emphasize the role of employees through motivation, active participation and determination of results;
- Normative theories show the methods and means by which the organization's management should substantiate, adopt and apply effective decisions.

The set of criteria for classifying the decision includes a series of characteristics according to which variants are made, evaluated and compared later, in order to adopt the optimal variant.

Different criteria can be used such as: profit, price, quality, return on investment, duration of a production cycle, degree of utilization of production capacity, etc.

A classification of decisions can be made according to the degree of knowledge of the decision maker regarding the result of the different alternatives. Thus, there are decisions in conditions of certainty, risk and uncertainty (Table 2).

In the case of conditions of certainty and risk there are different optimization techniques, but in the case of uncertainty, theoretically there is not enough data for the decision to be made. The reason is that, by definition, decision-making means choosing between alternatives, and if these are not known, the choice is impossible. In practice, the decision is made by using the reasoning and information available, estimating the values and probabilities of possible outcomes. Thus, uncertainty turns into risk.

Ignoring the risk and uncertainty in the decision could make a firm feel better in the short term, but the total cost

Table 2

Explanations on the status of the result

The state of the result	**Explanations**
Certainty	There is only one result for each alternative and there is complete and precise knowledge about it.
Risk	There are several possible results for each alternative and a value and a probability of achieving the results can be attached to each.
Uncertainty	Neither the number of results, nor the values, nor the probabilities are known.

to the quality of the decision-making process will be huge. If it can find ways to become comfortable with uncertainty, it will be able to see the world more accurately and be better at it.

A more objective firm will gain in the long run compared to a more biased.

Rational behavior consists in choice the most appropriate means to achieve the proposed goals [5].

The action must be followed by control because it is necessary to verify the extent to which the decision corresponds to the factual situation and to be able to intervene in a timely manner with the necessary corrections [6].

Decision-making methods and techniques can be classified as follows:

1. Methods and techniques for optimizing decisions under certainty (ELECTRE, global utility method, additive method, Deutch-Martin algorithm, decision table, decision simulation);

2. Methods and techniques for optimizing decisions in conditions of uncertainty (optimistic technique, pessimistic technique – A. Wald, optimality technique, proportionality technique – Bayes-Laplace, regret minimization technique – L. Savage;

3. Methods and techniques for optimizing decisions in risk conditions (decision tree, mathematical hope method).

Three main trends are currently coexisting [7]:

- presenting achievements in the form of case studies (in books, magazines, programs), serving as models for managers;
- design and use of decision techniques and methods (decision tree, ELECTRE, decision table);
- elaboration of complex concepts, with unitary character in which to integrate methods, techniques and case studies.

The issue of rationality has a basic place in any conversation about abilities human knowledge, decision and action.

The rational model has a normative character regarding the mode in which decisions should be made for them to be accepted as such "rational."

Formal criteria may function as necessary, but not sufficient, conditions for evaluation rationalization of decisions.

Rational choice theory assumes that tastes and preferences are relatively constant characteristics of individuals, and that they possess a complete knowledge of them [8].

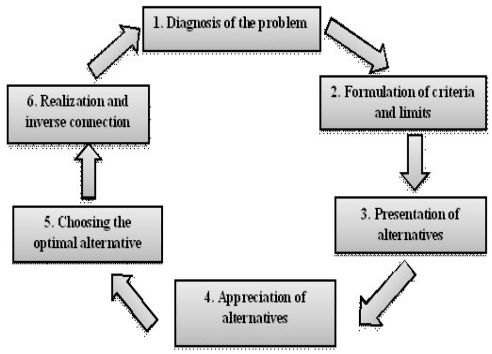

Fig. 1. The algorithm needed for rational decision.

Based on information from the literature, the author proposes the rational decision algorithm shown in Fig 1.

The human brain was not built for rationality.

The human brain has evolved to generate certainty and order, so we feel uncomfortable with the fact that luck plays an important role in our lives [9].

We recognize that luck exists, but we oppose the fact that, despite our best efforts, events may not act in the desired manner.

We feel comfortable imagining the world as an orderly space, where chance does no harm and events are perfectly predictable. It took evolution to see the world like that. The elaboration of the order of chaos was necessary for the survival of humanity.

Uncertainty not only improves the search for truth within groups, but also causes those around them to reveal useful information and / or conflicting opinions.

Risk is a social, economic and political category in the origin of which lies the uncertainty with which it can cause damage as a result of hesitations in adopting the decision. This can turn into a brake in carrying out and developing economic activities by decreasing the turnover and admitting some material losses. So the risk expresses a possibility of a disadvantageous event, translated as a probability of loss, danger.

In practice, in making decisions are found that the operations corresponding to the different stages are not always strictly delimited and the order of their approach is not rigid.

2. THE DECISION MAKING PROCESS WITHIN A ROMANIAN COMPANY

The company under study specializes in road freight transport, with 4 permanent employees and one collaborator. Full-time employees are 3 drivers and a route coordinator. The accountant performs the part-time activity 2 hours / day.

The company is certified by the Romanian Road Authority (ARR) with a domestic and international transport license that has a validity period of 5 years with the possibility of renewal.

All vehicles have ABS and ARS (for stability control). In order to know their position at any time, the GPS (satellite tracking) system was installed on all vehicles.

The company provides the following services:

- National / international transport of general goods on any route;
- Transport of clothes on hangers;
- Refrigerated transports;
- Repairs;
- Storage, handling.

3. SOCIETY'S OWN CONDITIONS IN DECISION-MAKING UNCERTAINTY

3.1. The human resource of the company

The organization noted the key role of human resources in the processes operated by the organization, but also its characteristics significantly different from those of other types of resources (material, financial, informational).

The involvement of the entire staff of the organization was a key element in the company's path from survival to success.

In addition to moments of success and satisfaction, they also faced many challenges in identifying the resources and solutions that customers expected from them. Failures and tense moments were not lacking, but they played an important role in forming the team and most of the time, they only strengthened the relationships with customers.

The company plans and coordinates the transport and distribution activities, maintains the relationship with the transport suppliers and with the employees, makes reports, develops new economic relations, all to deliver the goods in the shortest time, at the best price to the customer but at the same time optimizes transportation costs.

In order to be able to do these things successfully, the company must be constantly aware of what is happening in the field and is based on a well-cohesive and motivated team.

Optimizing transportation costs, optimizing processes and costs in daily activities are not only tasks for a freight company, but also personal goals of each employee.

The organization is a long-lived company that has a young spirit and an enthusiastic and determined team to achieve always excellence in freight services. This is supported not only by them but also by customers, partners and even competitors.

The "open door" policy is promoted, which does nothing but lead to better and more efficient communication and can lead to decisions at the right time for carrying out activities.

The company is convinced that you cannot achieve performance without a team that you can rely on and that will motivate and inspire you. Involvement is the quality that the transport manager seeks in every member of his team. The moment you are involved you can better understand what is happening, the source of the problems and you can make informed decisions. In the team there is a relationship with the "cards on the face". Nothing is hidden and any topic is discussed, including when it is wrong. It is considered a great quality to realize that you were wrong and to admit it. The sooner you realize your mistakes, the sooner they can be corrected. He tries to communicate as much as possible with the team, although time is a strong enemy.

Any problem has at least one solution agreed by both parties and is constantly trying together with colleagues or partners to find solutions that allow the development of the activity in optimal conditions.

On the communication side, it has been learned over time that it is appropriate to listen, but also the need to make yourself easily understood. There are many people involved in road freight transport, and efficient communication is sometimes the key to success.

Communication, flexibility and availability are essential. To these human qualities are added such as integrity, fairness, respect for society, partners and customers, dedication and, last but not least, teamwork. Every individual has his importance in the chain of success, but the analyzed company believes in teamwork, and their team is more than the sum of the values of individuals. Because freight transport cannot be done alone, working with people brings the greatest satisfaction, but also some of the greatest challenges.

3.2. Adoption of decisions in conditions of uncertainty to the company under study

Decision making at the studied company is a dynamic and constantly developing process. Each decision is made in the environment characteristic of an organization and all decisions involve a few basic steps.

The company is aware that the quality level of a decision is largely influence by the available information, their relevance and credibility but also by the decision maker's ability to use them.

The company respects the Brenard and Priou principle [9]:

$$Utility = Importance \times Credibility. \tag{1}$$

In this sense, information of maximum credibility and zero importance will have zero utility in the adoption of the decision, and one of great importance, but erroneous will also have zero utility.

The saying goes, "The truck's wheel spins 24 hours a day, 365 days a year." Anything can happen at any time in 365 days, and the outcome of that unexpected situation depends on the decision made, and there must always be the ability to make quick and relevant decisions.

Now, after many years of work in this field, the lesson is just as valid. There is a possibility that at any time of the day a decision is needed and a decision made at 3:00 in the morning can avoid unnecessary workload in the following days. At the same time, flexibility must not be overlooked. It is necessary to always distinguish between staying firm and giving up.

The company analyzes each situation separately, multidimensional, in perspective, studying the possible options to finally make the optimal decision.

Among the most important requirements strictly observed within the company are the following:

- having concrete information that reflects the reality of the organization;
- framing in the optimal period of elaboration and operationalization;
- empowerment;
- precise wording of the decision;
- coordination of decisions.

In the company analyzed in the decision-making process, the algorithm presented in Fig. 1 is used.

According to the way of adopting the decisions within the analyzed company, the programmed and the unscheduled decisions can be identified.

Scheduled decisions are repetitive and routine decisions.

Unscheduled decisions taken at the company are those taken in unstable conditions or in unique situations. To solve these problems, there are no pre-established procedures at the company, either because they have not been met before, or because they are very important and complex.

Multi-participant decisions are often made in the company because they are considered valuable, because group decision-making leads, compared to the individual decision, to find more and better solutions but also because the business is a family one.

Many of the decisions taken at the analyzed organization are in conditions of uncertainty. In this case, the information is missing and the objective determination of the probabilities regarding the possible results thus becomes difficult. Confidence in the success of the decision taken in these situations is lower, because historical data are missing.

The company decision makers are faced with the most heterogeneous risk situations such as: contractual risk, investment risk, decisional risk, bankruptcy risk.

The risk assessment in the managerial decisions in the given enterprise includes the appreciation of the internal and external environment of the enterprise, analysis of the organization of the enterprise: strategies, planning, budgets, control, economic and financial analysis.

The method of elaboration and selection of decisions used within the company is the decision-making meeting where problems are solved, perspectives are exploited, information is transferred or some attitudes are harmonized.

Another way of making a decision is the decision tree method, used to optimize decisions in risky conditions.

In addition to these methods, the company uses the correct problem definition technique, starting from the premise that most of the errors in solving the problems are due to their incorrect definition.

The reverse technique is used by the company to look at the problem from a different point of view than the classic one, approaching the problem from tail to head.

Transport service planning involves a supply schedule, in which the time factor is extremely important.

Means of transport are allocated according to the orders received or the supply schedule resulting from traffic analyzes, a dynamic reallocation of which is sometimes necessary.

Plans include, as appropriate, fuel supply points and quantities, food, water, lubricants and other consumables, crew exchanges, etc.

Obviously, the company would like to carry out its activity on the basis of contracts with as long a duration as possible.

The following example was presented to show how decisions are made in the company under conditions of uncertainty.

It is well known that uncertainty is always subjective, as it depends on the perception of the decision maker.

In fact, the uncertainty is similar to the risk and the decision-making procedures in risk conditions are also used in the presence of uncertainty.

The company followed the steps in the rational decision-making process by proceeding as follows:

- Identify the problem

The company owns two trucks and three trailers. Two trailers are tank type and are intended for the transport of chemicals for a customer with whom he has a contract concluded for one year and subsequently renewed. The third trailer is a van with a fully convertible tarpaulin. Another customer was served with this vehicle and the business was also completed on the basis of a contract concluded in conditions similar to the one presented above. The business was going well, but a potential customer for the van emerged from the market study. The new client offered more advantageous conditions than the one with which the business had been done, but he did not want to conclude a contract for the transport of prefabricated steel products.

Being a small company, both customers could not be retained. The van trailer was the only vehicle that could be used either for the old customer for whom it was transporting construction materials under a contract or for the new one who wanted to transport the prefabricated steel in the country. The contract had been concluded for one year and was terminated the following month, and could be renewed. The question was to decide whether the van business would proceed as in the past or the new customer would be chosen.

- Generating alternative solutions

Two alternative solutions have been identified:

- Keeping the old client;
- Starting business with the new client.

- Select the optimal variant

After identifying the alternatives, each was analyzed in terms of their feasibility and consequences.

Keeping the old client provided security as the collaboration lasted for several years and was regulated by contract.

The new client offered conditions that are more advantageous but did not want to conclude a contract mentioning that he would need 2 trips per week because the distribution is made in several localities and requires time for execution. The potential customer is a stronger economic agent than the existing customer is, a fact proven by the evolution of the main economic indicators.

In this stage of evaluating the alternatives, the company uses whenever possible mathematical models to facilitate the choice of the optimal solution but also the participatory way in making decisions.

Structured in the format of a decision tree, the following elements are identified as Fig. 2 shows.

The firm appreciates that it is extremely important to understand that a rational behavior with a von Neumann-Morgenstern utility function is what dictates to it the maximization of the expected value of the utility and not of the utility of the expected monetary value. A von Neumann-Morgenstern utility function $u = \sqrt{c}$ was assumed, where c represents the expected weekly income.

Thus for an income of 1000 the utility is $\sqrt{1000} = 31.62$, for 12000 utility $\sqrt{12000} = 109{,}54$ and for 6000 utility $\sqrt{6000} - 77{,}45$.

$$U_{current\ customer} = 1 \times 31.62 = 31.62, \quad (2)$$

$$U_{potential\ customer} = 0.6 \times 109.54 + 0.4 \times 77.45 = 96.68. \quad (3)$$

Using the method of calculating the probability distribution, the expected value for the two variants is obtained:

$$E_{current\ customer} = 1 \times 1000 = 1000, \quad (4)$$

$$E_{potential\ customer} = 0.6 \times 12000 + 0.4 \times 6000 = 9600, \quad (5)$$

This option was adopted and worked by generating an increase in revenue over time compared to the period in which business was conducted with the other customer.

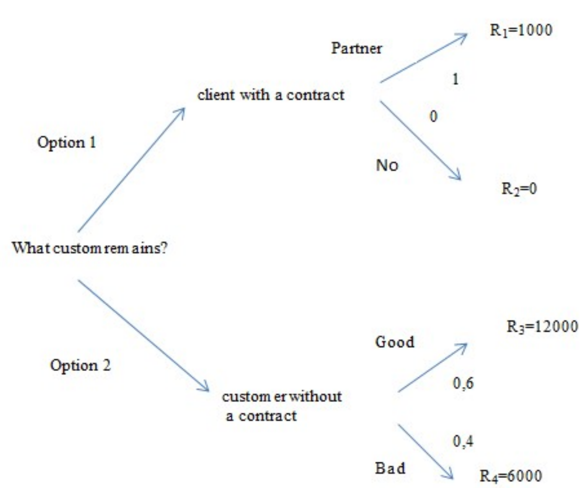

Fig. 2. The decision tree.

It is noteworthy that the company could consider hiring a new driver, purchasing another vehicle and keeping both customers.

The company respects customers and does not risk, proving maturity in thinking, in making super-optimistic decisions that would burden the activity, in the conditions of the turbulent times in which we live.

4 CONCLUSIONS

The company under study is small but relies on a motivated human resource.

The market is constantly monitored to use the opportunities presented, proof of identification and negotiation with the potential customer.

The decisions to be taken are adopted in a participatory manner.

Making decisions in conditions of risk and uncertainty it can be achieved by several methods, the decision tree occupies a place important.

The company uses mathematical models in optimizing the choice of the optimal variant, so a scientific approach in decision making.

There is a concern for anticipating the course of events that occupy a leading place in the company. Never invest resources without compromising the expected results, in relation to the objectives pursued.

The company relies on information media, flexible organizational structure, communication channels, etc.

There is a coordination of the team's efforts to identify solutions starting from customers, but not to undermine the chances of financial performance, respectively obtaining profit.

The company recognizes the importance of information as the basic raw material for substantiating decisions and uses various sources of information to take advantage of market opportunities. Thus, the employees are subscribed to the CARGO transport magazine, with a monthly online publication where articles related to the national / international transport activity are presented. Other articles, publications, sites in the field are studied in order to be informed with the latest news and to be able to turn them into assets as far as possible.

The existence in the team of two employees with higher economic education offers the possibility of scientific management of the problems that appear in the company activity.

Communication in the company is optimal ensuring a pleasant working environment given that the business is a family one, the interest is common and the management is participatory.

Weekly discussions are held about the problems encountered, the news found and solutions are thought for improving the activity taking into account both the possibilities of the company and the opportunities or dangers outside the company.

The company also uses intangible factors for motivation, such as influence in decision-making, success, recognition of the role in the company, job security, membership, etc.

The company successfully uses the "listen and respond" technique, which involves active and sustained communication between all employees. Communication is encouraged, creating an environment in which any employee feels they can ask questions, state opinions and requests to which they will surely receive answers and help.

The quality of the work of the human factor in the analyzed organization is essential for the effectiveness and efficiency of the decisions taken.

The acceptance of risk within the company is done knowingly based on analysis and forecasting. Risk control is performed to see if financial regulations have been complied with and if the types of management tools have been used correctly. Performance analysis involves measuring them because of hedging risk and uncertainty exposures.

The proof of the efficiency of the decision-making process in the analyzed company also results from the evolution of the main economic indicators, as follows:

- turnover increased in 2019 by 52% compared to 2018, and in 2020 compared to the same reference year 2018 increased by 33%, due to the restrictions generated by the pandemic;
- profit in 2019 exceeded twice the value recorded in 2018 and in 2020 there was a decrease of 10% compared to 2019;
- profit rate in 2019 almost doubled and in 2020 it registered an increase of 0.36%.

The decision-making process at the analyzed company is oriented towards increasing the competitiveness, i.e. maintaining it on a competitive and evolving market in conditions of profitability.

Within the company, decision-making techniques have developed over time due to the need to obtain good decisions.

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