CONSIDERATIONS ON THE DECISION PROCESS WITHIN THE ENTERPRISES

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The process of taking decisions is focused on the increase of the competitiveness of a company, namely of its maintenance on a market of competition and evolutive, in conditions of profitability. The quality of a decision is essentially influenced by the available information, by its relevancy and credibility and the ability of the person who takes a decision to use them. An important role in taking decisions is represented by the classical and probabilistic logical reasoning, useful tools and the assessment regarding the stability of the economic measures. The performance rate of the internal environment and of the external environment specific to a company have priority in substantiation of the decisions.

1. Considerations on the decisions

In the theory of decision, the so-called optimality and satisfaction criteria are encountered. The optimality can be mathematical and logical. The mathematical optimality is defined by the maximum and minimum values of the commensurable indexes. Examples:
 - the rate of the economic efficiency of an investment → maximum value
 - cost → minimum value

The logical optimality is also named the paretian optimality (Vilfredo Pareto) and it represents the social consensus: „ the achievements of a person must not affect in a negative manner those of any other person". In the case of two companies that cooperate, both of them must win in order for the issue to be solved in an optimal way.

The satisfaction criterion (sufficiency) is necessary because, even if a version to include optimality can be achieved, in some cases this might not be satisfactory.

The concept of decision is used in a large scope of senses:
 - from the time of a simple reaction to the economic decisions;
 - from the elementary psychic acts to the complex processes of deliberation and choice (the conduct of the consumer);
 - from the individual activity to that of the collectivities (the group decision).

The process of taking decisions is a process of mental elaboration, of processing the information that is received, followed by a selection between more versions from which one is chosen. There is no process of taking decisions without information.

From the perspective of the business management, the decisions are divided in two categories, based on the stage of a business:
 - The decisions to draft a new business. It refers to the way of conception and the building of a business and mainly contains: the choice of a field, the establishment of the objectives, the establishment of the organizational structure, the establishment of the necessary resources and of the main indexes of earning capacity.
 - The decisions regarding the operation of an existing business that contain the main stages of the strategic, tactical and operational management.

The establishment of the typology of decisions involves two different aspects:
 - the typology of decisions per se, done based on certain criteria assigned beforehand;
 - the typology of the persons who take decisions based on certain individual peculiarities expressed in that respective process.

In conclusion, the process of taking decision is a mix between the logical types for classification of the decisions and the psychological peculiarities of the persons who take decisions.

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From the point of view of the process of taking decisions, the essential problem is represented by the selection at each level of decision of the relevant information, in which absentia a lot of decisions are wrong.

In the selection of the relevant information, an increased attention must be given to the usefulness in direct connection with the importance and credibility, according to the relation: usefulness = importance x credit.

An information of maximum credibility and of zero importance has a zero usefulness in taking a decision, and one of huge importance but wrong has also a zero usefulness.

2. Concepts regarding the types of reasoning in process of taking decisions

The classical logical reasoning operates only with two „truth values":

true – is shown using the figure 1

fals – is shown using the figure 0

On this ground, all the assertions are included in two categories. There is a third category of assertions: those who are not entirely true or false, whereon the classic logical reasoning has no answer.

The probabilistic logical reasoning. The probabilistic logic takes into account the assertions from which none is entirely false and neither entirely true. The assertions are ordered in relation to their degree of truth, stating how much or how less one is plausible compared to another. The probabilistic logic is not limited only to two truth values (0 and 1) but uses an infinity of values expressed by figures between 0 and 1. The main characteristic of the probabilistic logic is that it provides the best type of answer regard the available information.

The probabilistic logic provides the degree of trust that we are entitled to give to an assertion.

Example: Question: How will the turnover of a company for the n year reach? (question asked on October of the year n – 1)

Answer:

Classical logic: The turnover will reach ROL 85 billion

Probabilistic logic: The turnover will reach ROL 85 billion with a degree of trust of 0.9.

Let us consider an experiment that can lead to N various events. Let us presume that from the N events we consider n→ favorable, respectively the appearance of any of these events is that we are interested in.

The objective probability P(E) of the event E is defined by the relation:

$$P(E) = \frac{n}{N}$$

If E appears in all of the N possible events, then P(E)=1→ certainty. If E does not appear in any of the N events, then n = 0 and P(E)=0→impossibility.

Let us start from the structure of the Romanian economic agents, according to the table presented below:

Table 1.1

Number of employees	Share from the total
0 – 50	97,16
over 51	2,84
Total	100,00

In this experiment, N = the total number of companies.

In terms of probability, if we consider an urn with N balls, corresponding to the N economic agents, with two colors suiting to the companies with more than 51 employees (black) and less than 50 employees (white), we can say that if we take out at a venture a ball from this urn, the probability to have a white ball is 97,16% and the probability to take out a black ball is 2,84%.

The result of any experiment regarding the N elements is subjected to the basic relation $N = \dfrac{n}{N} + \dfrac{(N-n)}{N}$, where $\dfrac{n}{N}$ = the share of the positive results = p (probability of success) and $\dfrac{(N-n)}{N}$ = the share of the unfavorable results = q (probability of failure).

The basic relation that results is: $p + q = 1$

3. Useful tool in the process of taking decisions
Dashboard

The dashboard is an ensemble of relevant information regarding the results obtained in the field that is administrated, presented in a synthetic manner, preset and conveyed in an effective way to the beneficiaries. For each level of decision, the dashboard that gathers the relevant information represents the support of the processes of taking decisions.

The dashboards are peculiar:
 - to the strategic level of an enterprise (General Manager);
 - to the particular functions of an enterprise (managers on fields).

The most important dashboard is that referring to the strategic level of a company that always contains three sections corresponding to the three environments of an enterprise:
 - the general external environment that refers to: the factors related to the intervention of state, factors related to the economic conjuncture, technological factors, social factors, judicial settlement;
 - the particular external environment , that includes the structure of the competition, the commercial structure of the markets and technological structure;
 - the internal environment, with analysis on the directions: marketing, human resources, technology, financial and exploitation.

The ability to select the relevant information for the strategic dashboard is an attribute of the management of performance (the table 1.3).

The typology of the information related to the environments of an enterprise

Tabel 1.3

No. crt.	Environments of the enterprises	Types of information
1.	**The general external environment**	• The inflation rate • The average monthly salary • The unemployment rate • Strikes at the main suppliers • The rate of exchange RON/ EUR • The monthly rate of the interest of loans • Changes in the prices of utilities • Changes of charges and taxes • Funds for the development of the enterprises provided by EU
		• The evolution of the market share regard that of the competitors • The rate of the general profit of the main

2.	**The particular external environment**	competitors • The back payments of the main competitors • The result of exploitation of the main competitors • The financial expenses of the main competitors • The labor productivity at the main competitors • The share of the salary expenses in the added value at the main competitors • The geographical areas of interest of the main competitors • The debts of the main competitors
3.	**The internal environment**	• The rate of the exploitation result (Exploitation result/Turnover, %) • The rate of the salary expenses (Salary expenses/Net added value, %) • The rate of the back payments (Back payments/Turnover,%) • The rate of the financial expenses (Financial expenses/Turnover,%) • The ratio between back payments and debts • The rate of general profit (Gross result/Turnover, %) • The rate of indebtment (Total debts/Total assets,%) • The labor productivity (The net added value/number of employees) in comparative prices • The rate of self-financing capacity (Capacity of self-financing/Turnover,%) • The level of wages of the staff in comparative prices • The bank account (RON and currency) • The period for the recovery of debts (Debts/Turnover x 365days) • The dynamics of the turnover in comparative prices • The intensity of export (Revenues from export/Turnover,%) • The degree of defrayal with cash of the monthly expenses of exploitation,% • The energetic efficiency (Energetic expenses/Net added value,%)

The selection of the information must be correlated with its periodicity: at the appearance, day, week, month, quarter, year.

The first five rates from the **internal environment** assessed in a dynamic manner define in a percentage of over 80% the performance of any company, irrespective of its field of activity. Therefore, we appreciate these rates as being of high priority in taking decisions.

We appreciate some of the rates that were presented as having alarm thresholds, for example: the rate of the back payments PR/CA ≥ 50 % or the rate of the financial expenses ChF/CA ≥ 25% that represent alarm thresholds referring to the inability of payment; the rate of the salary expenses ChST/Va net = 80%, at a bigger value, the company recording losses in exploitation; the degree of defrayal with cash of the exploitation monthly results Ga < 80 %, that represents the financial safety of a company; the rate of indebtment DT/AT = 60%, that represents the measure of the degree of defrayal of the debts by the total asset of a company.

On the ground of the afferent data of the **particular external environment,** the manager makes a dynamic assessment of the fixed market, induces its degree of concentration, makes the static and dynamic diagnosis per each company, determines the trend and takes the right decisions in the establisment of the company's strategy to act on the actual and potential markets. The competitive management converts the economic agent from an entity prevailing **introvert** (inclined to himself, to his internal problems), to an extravertit entity (open to the global environment, with fast feedback and adaptive).

4. Minimal statistical abstract for the assessment of the stability of the economic measures

The simple sequence of statistical data is a sequence of numerical data which measure the value of a characteristic quantity of the phenomenon that is analyzed.

Example: A company whom is measured the value of the turnover of every year. The statistical sequence is the following: $y_1, y_2, \ldots y_n$, where y_i – the turnover in the year „i" and n – the number of years.

The basic indexes of a static sequence are:

The arithmetical mean: $\bar{x} = \dfrac{\sum\limits_{1}^{n} x_i}{n}$
The standard deviation: $S = \sqrt{\dfrac{\sum (x_i - \bar{x})^2}{n-1}}$

The coefficient of variation is defined as the percentage rate between the standard deviation and the mean $V = \dfrac{S}{m} \times 100$

The coefficient of variation takes values between 0 and 100%.

If V = 0, it means the lack of variation

If V→ 0, the variation of the characteristic is small

If V→ 100%, the variation of the characteristic is big

No description of a social – economic phenomenon is complete in the absence of the computation of the mean, of the standard deviation and of the coefficient of variation.

The most important error in the assessment of the economic and social events is the exclusive use of the mean as an index of estimation.

Example:
Levels of monthly wages (ROL):

    a.   2.000.000   2.500.000   3.000.000   3.500.000   4.000.000

$\bar{X} = 3.000.000$ S = 790.569   V= 790.569 / 3.000.000 x 100 = 26.4%

    b.   1.000.000   2.000.000   3.000.000   4.000.000   5.000.000

$\bar{X} = 3.000.000$ S = 1.581.139   V= 1.581.139 / 3.000.000 x 100 = 52,7%

c.   1.000.000   1.500.000   2.500.000   4.000.000   6.000.000

$\overline{X} = 3.000.000$ S = 2.031.009   V= 2.031.009/ 3.000.000 x 100 = 67,7%

In the three cases, the mean $\overline{X}$ is the same, but the wage policies are very different. The measure of the difference is given by the coefficient of variation V, % = S/mx100.

The most important index of the impact of the disturbing factors is represented by the coefficient of variation V. On the whole, irrespective of the number of the terms, a coefficient V that is bigger indicates an increase of the influence of the perturbing factors.

The increase of the coefficient of variation represents the greatest danger, because the large variations hide the causes.

Bibliography
1. Drucker, P., The Effective Executive. The Definitive Guide to Getting the Right Things Done, Meteor Press Publishing House, Bucharest, 2007
2. Grădinaru, D., Grădinaru, P., Ghiţescu, T., Simulations and Management Projects, Sitech Publishing House, Craiova, 2007
3. Grădinaru, P., Management, University of Pitesti Publishing House, 2002
4. Nicolescu, O.(coordinator), The Decision System of the Organization, Economical Publishing House, Bucharest, 1998
5. Nicolescu, Ov., Verboncu, I., The Profit and the Managerial Decision, Economical Tribune Publishing House, Bucharest, 1995
6. Stăncioiu, I., Militaru, Gh., Management. Essential Elements, Teora Publishing House, Bucharest, 1998
7. Verboncu, I., Dashboards. Theory, Methodology, Applications, Tehnical Publishing House, Bucharest, 2001