

LOGICAL MODEL, A PRECEDING STEP FOR THE QUALITY OF THE DECISION-MAKING

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Abstract

The competition challenges make businesses face with the different nature problems. The consequences of this reality are reflected on the business perspective with deep changes in their status and their activity. In this context, the development of successful business, in a certain degree, is conditioned by decision-making. The decision-making in business is an important activity and, as such, it has attracted the researchers' attention for a long time. This is reflected in literature. The literature refers to the decision-making starts in early periods. But if we consider that the decision-making is a very important activity, researchers still continue to develop their decision-making theories which are based on the old theories. The theories of decision making in today's times are enriched as a result of their continued evolution. So there is a numerous literature where various aspects of decision making are treated separately, or linked and coordinated with each other. This paper will treat some problems of decision-making by focusing on presenting a comprehensive picture of a logical decision-making model. Also it will be presented chronologically and through relevant perspectives.

Keywords: Logical model of decision making, decision maker, type of decision, business performance

Introduction

Business management is a difficult managerial endeavor as it is faced with a variety of problems and challenges conditioned upon the environment in which businesses operate. "Companies are currently confronted by exceptional challenges caused by the unpredictability and complexity of their competitive environment" (Sinofsky and Iansiti, 2010). All these factors lead to different kinds of decisions, expanded not only during different time-spans, but also confined in a given reference-period. *So, decision making is very important action.* Garvin and Roberto (2001) and Rosanas (2013) are of

the opinion that decision-making is permanently present in the life of people. In this regard, Rosanas (2013) shares the opinion that decision-making is an ongoing activity as he says: “Decisions are an everyday fact of life”. Such widespread presence of decision-making is dictated by the indispensability of decision-making in the development of the society.

The concept and the problems of decision-making are elaborated by the researchers throughout the years. The theories of decision-making are enriched further nowadays. Theoretical enrichment is a consequence of the ongoing evolution, which starts with the embryonic theoretic forms to end with the modern theories of decision-making.

Thereby, the decision produced solution will result to be sustainable and long-term. In this context, the decisions constantly focus on business key issues and being such alike, they shall reflect management professionalism. Hence, the decision-making is obviously an essential management commitment, accountable for the business fate. Accordingly, Garvin and Roberto (2001) will proclaim: “Decision-making is arguably the most important job of the senior executive and one of the easiest to get wrong”. Therefore, cognition of the business decision-making issues becomes of a paramount importance.

The objective of the paper: This paper represents efforts to plan and present a logical model of decision-taking treating in details the perspective that implicate the process.

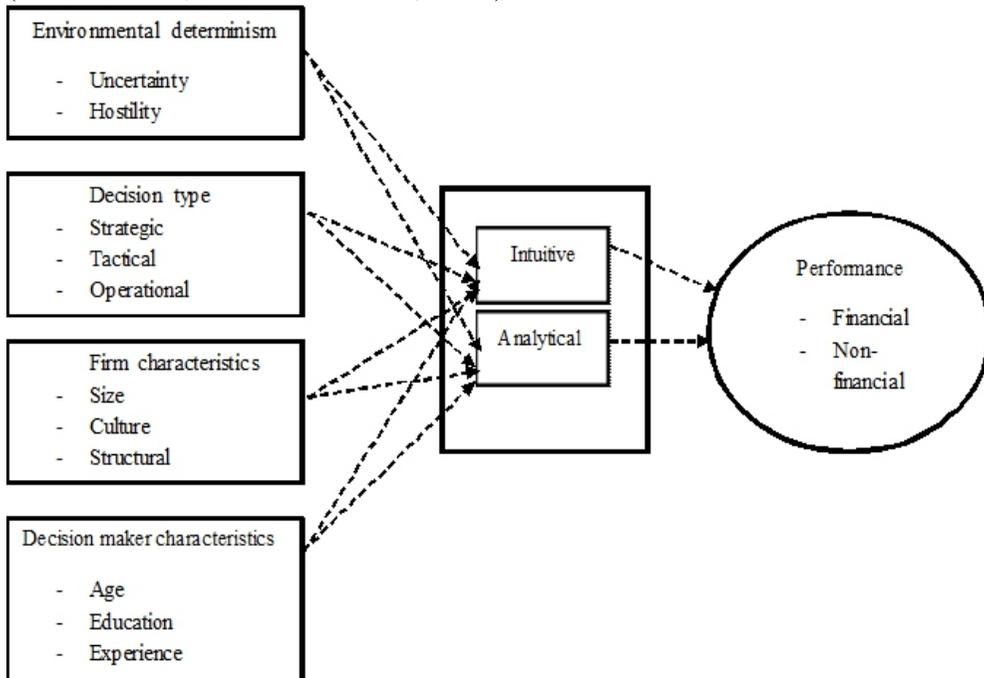
Methodology

The methodology of the paper corresponds to the choice oriented by the defined objective as mentioned above. In this context the methodology considers the collection of secondary data through a detailed study of the literature. The focus of literature study is the analysis through a theoretical approach of problems in decision-making. The paper refers mainly to the study of published texts in the field of decision-taking, scientific articles, reports, scientific journals, which have been basis for providing theoretical facts in decision-taking. The selection of authors has considered the fact that thesis shall support each-other. In some cases the treatments of authors have been facing each-other with the purpose of representing a full frame of this issue (decision-taking).

The decision-making model

Decision-making is a process enabling the development of business towards a lucrative future. According to Sjöberg (2000) “Decisions are crucial in many kinds of action; some would regard them as the most important factor”. Therefore, the business economic development towards success cannot be succeeded without progressing in the decision –making

activity. Progress in the decision-making activity is reflected in the successful settlement of the issue in the focus of decision and its cost. Decision-making is a complex managerial commitment influenced by various factors. Factors, to a large extent, condition the methods used in decision-making. To this regard, Elbanna and Child (2007) have identified some perspectives. Specifically, they stated: “These focus on strategic or management choice, decision-specific characteristics, environmental determinism and firm characteristics.” Additionally, the above mentioned researchers refer to a fourth perspective and concretely, demographic characteristics of the decision-makers themselves. Review of each component of particular perspectives of decision-making addressed above, relies on the reasoning of Elbanna and Child (2007) which leads to a logical model that can be rendered according to an orienting scheme. “A schematic model is a picture or drawing of reality” (Balakrishnan, Render and Stair, 2014).



Decision - making perspectives analytically approached are delineated as following:

Environmental determinism

Environment represents a very important perspective to decision-making, as it affects organizational structures, strategy etc. Additionally, the environment in which business operates is complex. In this framework, Simon (1959) acknowledges: “The decision-maker’s information about his environment is much less than an approximation to the real environment”.

Environment is characterized by random or defining characteristics, considered sufficient. Otherwise, the whole decision-making process and the decision itself can amount to depreciation. Environmental characteristics affect the method that will be used for decision-making. Given the environmental characteristics, Elbanna and Child (2007) and six years later Elbanna, Child and Dayan (2013) defined that the environment in which business operates is presented as possessing two different features, namely environmental uncertainty and environmental hostility. For this reason, Elbanna, Child and Dayan (2013) stated: “For reasons of parsimony, as well as that of maintaining continuity with previous work on strategic decision-making, we chose to focus on environmental hostility and environmental uncertainty as the consequence perceived by senior executives of external complexity and dynamism”.

With regard to environment consideration during the decision-making process, Goll and Rasheed (1997) believed that: “Environmental characteristics or properties have major implications for all aspects of management including strategy, structures, process and outcomes. Several theoretical arguments have been advanced suggesting that environmental context is a key determinant of the appropriateness of rational strategic decision processes”.

Therefore, the environment in which business operates can have positive or negative impact. “Hence, we anticipate that intuition is more likely to lead to unexpected negative outcomes in hostile environments than in munificent environments”. (Elbanna, Child and Dayan, 2013). Positive environment represents a considerable support for decision-making in all its complexity. Goll and Rasheed (1997) believe that: “Although empirical research investigating the impact of environmental munificence on organizational strategies, structures, and processes is limited, past research clearly points to its importance”. The opposite of this situation occurs when the environment is not positive.

Types of decision

Continuity of the decision-making causes every business to make a variety of decisions throughout its existence. So, the manager alone or in group will make different decisions ranging in importance, throughout the professional careers. To this concern, Verplanken and Svenson (2001) emphasize that “Decisions vary widely in importance for the decision maker. Many decisions are unimportant, such as very purchases. Such choices are routine actions, which need little thought, other decisions are more important and evoke active reasoning aimed at acquiring a satisfactory representation of attractiveness so options”. Some decisions can be taken at the same time, other at different phases. To the manager, the totality of the

sedecisions amounts to what is called as "portfolio of decisions" (BazermanandMoore, 2009). By analyzingthe presenceof the portfolio theory of decisions in business, the viewonthe existence of a diversity of decisions is reinforced. The totality decisionsmade in a business, for a provided period of reference, show cause-effect chainof connection,whereas diversitymanifests the need for decision classification.

Classification relates to the joining of decisions according to their common. Decision classification is made by different researchers, based on classification criteria considering their characteristics. In anycase, even the same authormay use more than one classification.

Accordingly, Vercellis(2009) considers some classifications, namely:

- According to goals
- According to the decision preparation requirements
- According to the preparation method

Each of the above classification shasspecificationswhichmustbe studiedand recognized by managers.

According to goals– Considering the aim (goal) the decision focuses on, its importance to the business and the relevant managerial responsibility, Vercellis(2009) and Pownall(2012) classify the decisions in three categories as: strategic, tactical and operational:

Strategic decisions: Decisions are strategic when they affect the entire organization or at least a substantial part for a long period of time. Strategic decisions strongly influence the general objectives and policies of an enterprise. As a consequence, strategic decisions are taken at a higher organizational level, usually by the company top management.

Tactical decisions: Tactical decisions affect only parts of an enterprise and are usually restricted to a single department. The time span is limited to a medium-term horizon, typically up to a year. Tactical decisions place themselves within the context determined by strategic decisions. In a company hierarchy, tactical decisions are made by middle managers, such as the heads of the company departments.

Operational decisions: Operational decisions refer to specific activities carried out within an organization and have a modest impact on the future. (Vercellis, 2009)

Every decision maker shall consider the above classification, because occasionally some errors in decisions may result irreversible or can be difficultly repaired. They need time to be repaired and this brings about higher repairing costs. Such errors are encountered in strategic decisions. While errors in tactical decisions are recoverable, requiring a short repair time and a relatively small costs.

Vercellis(2009) consider several features for each class of decisions and presents them as follows:

| | Operational | Tactical | Strategic |
|-----------------------|--------------|----------|-------------|
| Accuracy | High | ←————→ | Low |
| Level of detail | Detailed | ←————→ | Aggregate |
| Time horizon | Present | ←————→ | Future |
| Frequency of use | High | ←————→ | Low |
| Source | Internal | ←————→ | External |
| Scope of information | Quantitative | ←————→ | Qualitative |
| Nature of information | Narrow | ←————→ | Wide |
| Age of information | Present | ←————→ | Past |

According to the requirements for the decision preparation

Based on their requirements for the preparation of decisions Vercellis (2009) distinguishes effective and timely decisions. Vercellis(2009) states that:

- **“Effective decisions.** The application of rigorous analytical methods allows decision-makers to rely on information and knowledge which are more dependable.

And

- **Timely decisions.** Enterprises operate in economic environments characterized by growing levels of competition and high dynamism. As a consequence, the ability to rapidly react to the actions of competitors and to new market conditions is a critical factor in the success or even the survival of a company.”

In addition to the above, depending on the decision-making method Vercellis (2009) handles three types of decisions. In more concrete terms:

- **Structured decisions.** A decision is structured if it is based on a well-defined and recurring decision-making procedure.
- **Unstructured decisions.** A decision is said to be unstructured if the three phases of intelligence, design and choice are also unstructured
- **Semi-structured decisions.** A decision is semi-structured when some phases are structured and others are not.

Whereas Pownall (2012) slightly differently classifies the decisions as:

- **Structured Decisions-** are decision where the aim is clear (i.e. the purpose of decision to be taken is unambiguous, easy defined and understood). Structured decision therefore follow a series of logical and rational steps in a clear progressive order.
- **Unstructured decisions-**by contrast, for individuals and organizations, these decisions are unclear, ambiguous and poorly understood by participants.

- **Programmable decisions** are types of structured decisions which follow clear, delineated steps and procedures.

The above classifications of decisions according to Vercellis (2009) and Pownall (2012) have many similarities between them. However treatment Pownall (2012) is the most comprehensive refers to "Programmable Decisions" considering far more complete ly decision-making, surpassing even the characteristic so f structured decisions. Vercellis (2009) move sfurther on combining classifications of different dimensions. So he has combined decisions" according to the irnature and scope" providing us a "Taxonomy of Decisions".

According to the preparation and evaluation method Grunig and Kühn(2005) classify decisions as following:

- Univalent decision problem is one in which the evaluation of the options is carried out on the basis of a single decision criterion or of multiple criteria which stand in a mathematical relationship to each other.
- Polyvalent decision problem is one in which there is more than one decision criterion and the criteria are not mathematically related.

The type of decision represent safactor in fluencing considerably decision – making especially as far as the decision-making methods are concerned. As a general rule, researchers suppose that the strategic decisions are based on the analytical method of decision-making. To hold up to this thinking, we can refer to Turpin and Marais(2004) who state that: "Operational decisions are based on an educated gut feel and experience. Strategic decisions require a more creative process and are shaped while being thought through". Selection of the method to be used in decision-making, alongside with the type of decision, which undoubtedly constitutes a basic factor, is conditioned upon other factors as well. Elbanna, Child and Dayan(2013) point out that: "Making decisions on the basis of intuition is increasingly viewed as a viable approach in today's business environment, because few strategic decisions have the advantage of complete, accurate and timely information". Assessing the decision components Hensman and Sadler-Smith (2011) refer to time as a substantial component: "Another important variable in the decisional context was time". However we cannot pretend that a fixed rule exists between the type of decision and the method used in decision-making. Nygren and White(2002) hold on the opinion that: "The Analytical and Intuitive decision-making styles scales do appear to be orthogonal - suggesting that an individual's predisposition toward high (low) Analytical tendencies does not necessarily preclude high (low) Intuitive tendencies as well". In support to this opinion, the researchers declare: "Decision strategies are often characterized as being intuition-based or analytically-based". (Nygren and White, 2002). However, it cannot be

pretended that business decisions shall be entirely intuitive or analytical. Thereon Sjöberg (2000) suggests: “The intuitive–analytical judgment scale used five steps, from “completely intuitively” to “completely analytically”.

Firm characteristics

Elbanna and Child (2007) say that coordinated environment impact is linked with business features. This coordination is justified, because the business is subject to the taken decisions. Consequently, business features shall also be taken in consideration as they affect the decision-making method. Thus, “The firm-specific variables examined in the present study are company performance and company size” (Elbanna, Child and Dayan, 2013).

Businesses are generally characterized by features such as size, ownership and culture. Cheng, Rhodes and Locke (2010) group the culture components of the organization into several groups: “The majority of these cultural factors can be grouped under four categories: the locus of control; decision style and mode; group orientation; and hierarchy”. Whereas, Hurn and Tomalin (2013) define the impact of business organization culture on decision in this way: “In a more collective management culture, decisions will be arrived at through a process of consultation and discussions, although the authority to make final decisions may still be vested at the top of the organization”. The influence of the organization culture, concerning its importance and necessity it holds to the decision-making process, has been also assessed by other researchers. According to Schein (2004): “Culture thus not only fulfills the function of providing stability, meaning and predictability in the present, but is the result of functionally effective decisions in the group’s past”. But, the organization culture composition is inevitably influenced by the national culture. There of indifferent countries we are faced with different organizational cultures. Hurn and Tomalin (2013) considering the impact of national cultures, analyzed two culture types and their respective reflection in the decision-making method. Hurn and Tomalin (2013) state that: “In an individualist management culture, such as in North America, Anglophone countries and Northern Europe, managers tend to take their own decisions in relation to their job responsibilities and their budget”. In Japan, another method of decision-making is salient. Thereon Hurn and Tomalin (2013) say: “The prime example of a collectivist management culture is Japan, where decision-making is carried out through a consultative process, with everyone involved in the discussion and decision-making”. Whereas in China, the Chinese researchers Cheng, Rhodes and Lok (2010) present this link between the environment and the decision-making method: “Speed, shown to have an impact on organizational performance is moderated by the business environment. In a turbulent environment, Chinese cultural factors

will mostly lead to faster decision-making because of the decision style, and the attention received by the boss or the chief executive”.

Another business characteristic affecting the decision-making methods is the business size. Elbanna, Child and Dayan (2013) accept that: “Small firms tend to be less formalized which may encourage a greater use of intuition”. Therefore, large businesses are more interested in using contemporary methods – analytical methods.

The decision maker characteristics

The decision maker constitutes one of the foremost components of the decision-making model. “The concept of intellectual capital (IC) is very important” (Wiig, 2004). According to Wiig (2004) the importance of intellectual capital consists in: “IC assets come in many forms. Personal IC assets consist of knowledge and understanding that a person possesses and owns in the forms of mental models, concepts, facts, rules, memories of incidents and situations, and many other manifestations“. Characteristics of the decision maker orient the decision to a considerable extent. “Klein and Cooper in a collaborative research task with the British Ministry of Defense observed that human decision processes always take place within the subjective world of the individual decision maker. One Decision-maker can see the same objective situation in a completely different way from another” (McLucas, 2003). Likewise, Simon (1997) assesses in a broader perspective the role of the decision maker in the decision - making process. “In designing decision-making organizations, we must understand not only the structure of the decision to be made, but also the decision-making tools at our disposal, both human and mechanical - men and computers”. (Simon, 1997).

The influence of decision-maker, as identified by the decision-making model, reflects on the business performance. This is why the decision-maker is a key factor to the model. Cannella and Monroe (1997) attribute the decision-makers’ influence to the demographic characteristics. To this respect they state: “Demographic variables such as a top manager’s functional background and formal education have also been associated with organizational outcomes” (Cannella and Monroe, 1997). It is very important to take into account the decision maker’s background because the demographic characteristics condition individual behavior. According to Elbanna and Child (2007) individual characteristics condition professional skills: “In this case, decision-makers are seen to be rational within the limits of their own capabilities (i.e. bounded rationality)”. Additionally, the decision maker individuality must be viewed within the organization context. In this regard, Hensman and Sadler-Smith (2011) say: “The individual decision maker operates within the social context of the organization hence s/he needs to be able to articulate her/his intuitions.” But the decision – makers’

professionalism, besides the individual characteristics is conditioned upon the information needed. Turpin and Marais (2004) assess the problem in this way: “The rational manager view assumes a rational and completely informed decision-maker (“economic man”) as described by neoclassical microeconomic theory around the middle of the previous century”.

Based on the type of decision, difficulties of the decision and on the individual professional skills, decision making managers determine the group composition working for the decision preparation. Schein (2004) identified various ways concerning the involvement in decision-making process. Thus, Schein (2004) believes that: “Some companies teach their executives to trust their own judgment as a basis for decisions; others teach them to check with their bosses; still others teach them not to trust results unless they are based on hard data, such as test markets or at least market research; and still others teach them to rely on staff experts”. The way the decision-making manager will choose the decision is conditioned not only on professional skills, but also on the complexity degree of the decision. Thereon, Child and Dayan (2013) define that: “In such circumstances, decision-makers may be reluctant to rely upon unexplained and risky intuition, and be willing to use rational supports for decision-making, such as hiring consultants, collecting relevant data, and conducting detailed analyses”.

According to Pownall (2012) in cases when the decision maker is represented on a group basis, we are dealing with what the author defines as a **body decision**. “However, it is important to also note the dynamic nature of the decision body. It is not a static or passive collection of individual(s) and/or group(s), but a body that changes and evolves through new knowledge of the problem or decision to be made, or through the problem itself changing” (Pownall, 2012)

The Pownall (2012) above considerations support the view of another researcher, March (1994) precisely. According to March (1994) the decision maker individual characteristics are thus defined: “The decision maker would consider all possible individuals, characterized by relevant attributes (their skills, attitudes, and price)”. Pownall (2012) referring to Mitchell *et al* (1997) emphasizes: “...then propose that stakeholders can be identified through three interdependent features of influence:

1. Their level of power and authority- for example how easy is it for a stakeholder to influence a firm’s decision.....
2. Their level of legitimacy- what is the social and moral authority of the stakeholder when using its influence to shape a firm’s decision.....
3. Their level of urgency- who is the stakeholder’s level of immediate implication in the firm’s activities ...”

Considering the fact that people are different, Jones (2004) is of the opinion that: “Different Decision-makers may have different attitudes toward risk and uncertainty”.

As on the above, it is clearly emphasized the fact that decision - maker is one of most central influential persons in the decision quality. Affinity is observed among the hierarchical position of decision-makers, his/her personality characteristics and the method he/she acts during the decision-making process.

Referring to Vroom and Yetton, Mullins (2010) makes evident the management decision style in the decision - making process. According to Mullins (2010): “Vroom and Yetton suggests five main management decision styles:

- Autocratic

A.I: Leader solves the problem or makes the decision alone using information available at the time.

A.II: Leader obtains information from subordinates but then decides on solution alone.

- Consultative

C.I: The problem is shared with relevant subordinates, individually. The leader then makes the decision that may or may not reflect the influence of subordinates.

C.II: The problem is shared with subordinates as a group. The leader then makes the decision that may or may not reflect the influence of subordinates.

- Group

G.II: The problem is shared with subordinates as a group. The leader acts as chairperson rather than an advocate. Together the leader and subordinates generate and evaluate alternatives and attempt to reach group consensus and a solution”.

The manager's impact on the quality of the decision can also be determined by the terms of distinct directions during the decision-making process. Referring to this fact, de Bono (1985) underlines some salient features under the label "six thinking hats". Summarized, the respective characteristics are delineated as follows:

Hat Target: The target is neutral and objective. The white hat takes care of objective facts and numbers.

Hat Red: The red one suggests wrath, (to see red), fury and emotions. The red hat gives the emotional point of view.

Hat Black: The black is sad and negative. The black hat covers negative aspects – why something cannot be done.

Hat Yellow: The yellow is glad and positive. The yellow hat is optimistic and covers the hope and the positive thought.

Hat Green: The green one is turf, vegetation and fertile growth, abundant. The green hat indicates new creativity and ideas.

Hat Blue: The blue one is cold and is also the color of the sky that is in favor of upon everything. The blue hat takes care of the control and the organization of process of the thought. Also the use of the other hats.



Performance

The business economic progress presents an opportunity to its sustainable development. To this regard, managers of all levels become interested in the business performance. However, a positive performance can not be achieved devoid of a qualitative decision. Referring to the decision-making cycle, it can be stated that the qualitative decision making sustains the ongoing business performance. Accordingly, Simon (1959) proposes: “When performance falls short of the level of aspiration, search behavior (particularly search for new alternatives of action) is induced”. In a competitive market, the business performance considers not only the decision-making quality, but also timing. Considering time as an influential factor in decision-making, Golland Rasheed (1997) and Cheng, Rhodes and Locke (2010), in their theoretical approaches, assess time in respect to decision-making as following: “The quick decisions resulting from comprehensive decision processes lead to better performance” (Golland Rasheed, 1997). While according to Cheng, Rhodes and Lok (2010): “The effect of the speed of the Strategic Decision Making (SDM) process on organizational performance has received more attention in recent research because the business environment is more dynamic and the rate of change is faster”.

All the above presumptions demonstrate an increasing market-oriented attention on the manager’s side. Businesses are constantly facing market challenges and the manager attentively shall consider these challenges in order to provide the best performance in the market. Therefore, according to Schein (2004): “The market is the best decision maker if there are several product contenders (internal competition was viewed as desirable throughout DEC’s history)”.

Based on the above, the decision quality is reflected in the level of performance. Thus, the decision-making manager needs to make a performance assessment. According to Jiang, Zhang and Sutherland (2011): “The performance of the remanufacturing system can be evaluated by a variety of different criteria. The criteria adopted for this work are cost,

quality, time, and service”. Therefore, performance assessment considers the financial and non-financial perspectives simultaneously.

Conclusion

As the above, we can conclude that:

- Successful businesses development has long been a priority, but actually in the economic integrity conditions, it is necessity. The management of this situation has need also for enough theoretical support.
- It is important to understand that should divide the intellectual impact based on the researches in decision-making direction. This stressed out the necessity of realization of the continuing observations of decision-making literatures for coherences.
- Theoretical studies reflect the quality important changes in decision-making field and they enable argumentative support.
- Drawing of a model in this case for the decision-making has to do the definition and sets of factors list that conditional decision-making. Aiming at a more profitability for decision-making, the model evidences the necessity of theoretical studies.

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