

## **DATA ANALYSIS IN MANAGEMENT DECISION-MAKING PROCESSES AT CORPORATE ENTERPRISES**

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### **ABSTRACT**

This article is devoted to data mining in managerial decision making processes, the main types of managerial decisions are given, as well as the role and importance of intelligent systems based on knowledge base in improving managerial decisions.

**Keywords:** Data mining, decision making, knowledge base, knowledge base, database, information system, intelligent system.

### **INTRODUCTION**

The process of making managerial decisions is an element of great importance in the management system of any company. The effectiveness of its action and future development will ultimately depend on the right decision, on how fully the previous experience, current and projected state of affairs at enterprise and in the external environment are taken into account when making them.

Managerial decisions can be made in order to ensure sustainable operation of an economic or business system within given parameters or for another purpose: to search for new development prospects and growth opportunities. Management decisions should be made only on the basis of correct, complete, unconventional knowledge about the subject area. The main role in this process is played by the intellectual capital (of the organization - a set of knowledge, skills and experience of its employees. This capital is a common factor of competitive advantage, namely in the conditions of modern post-industrial economy - knowledge economy. The majority of modern companies pay great attention to the development of IC and invest a lot of money in its formation, constantly looking for forms and methods to improve management processes.

But to create and accumulate IC in modern living conditions is not an easy task. Firstly, the economic and business environment is highly dynamic, secondly, technologies are rapidly developing, new goods and services are appearing, markets are forming and breaking up, new forms of doing business are being developed. Yesterday the current knowledge, skills and abilities allowed to achieve success, but today they simply become obsolete and unnecessary. The second factor is the high complexity of modern economic and business processes, which are described by dozens and hundreds of parameters in a very complex relationship. In order to understand the current trends, identify important regularities and make timely and reasonable management decisions based on them, it is necessary to use not only human intelligence, but also the latest achievements of IT-technologies.

Decision making is the conscious selection from available options or alternatives of a course of action that reduces the gap between the present and future desired state of the organization. Qualitative information is the basis for making managerial decisions. Features of managerial

decisions - validity; timeliness; comprehensiveness of approach; legality; clear formulation of tasks; feasibility of execution; continuity and consistency with earlier decisions. Manager during his activity has to make decisions constantly, he accumulates certain experience in this area. In many respects the technology of management depends on personal qualities of the director himself, his national peculiarities, peculiarities of management adopted in this or that country.

### **Types of Managerial Decisions**

Since decisions are made by people, in any case, their character is largely influenced by the personality of the manager involved in their origin. The following types of decisions are distinguished: balanced, impulsive, inert, risky and cautious. Balanced decisions are made by managers who are careful and self-critical about their actions. Before making a decision, they have a certain initial idea.

The authors of impulsive decisions easily generate a wide variety of ideas in an immeasurable amount, but are unable to properly test, refine, and evaluate them. Therefore, decisions are not reliable and well-founded enough, as they are made "in a spurt", "on the spur of the moment". Inert decisions are the result of cautious search. In such decisions, controlling and clarifying actions prevail over the formation of ideas, that is why it is difficult to detect creativity, originality, brilliance. novelty, The authors of risky decisions do not need to thoroughly justify their hypotheses and, if they feel confident, they will not be frightened by any dangers.

Cautious decisions are characterized by careful evaluation of all options, "subtle" approach to the case. They are even less characterized by creativity and novelty than inert decisions. The above-mentioned types of decisions are mainly made in the process of operational personnel management. For tactical and strategic management of any subsystem of the management system rational decisions are made based on the methods of economic analysis, justification and optimization Each management decision concerns economic, organizational, social, legal and technological interests of the company. Therefore, management decisions that reflect this set of interests should be included in the criteria for selection.

### **Die Rolle und der Stellenwert intelligenter Informationstheorien beim Wissensabruf.**

The main quality of the modern business environment is the shift of centres of managerial decision-making from the highest echelons of company management to the level of specialists directly integrated into business processes. It is connected with the availability of more topical and actual information about current problems at the latter, and also with the requirements to the operability of the decisions taken, that is why a great number of specialists with the widest range of knowledge and profile of education, as well as knowledge of computers and software are involved in the process of acquisition of knowledge necessary for making managerial decisions. Particularly for expansion of 'mining' of knowledge necessary for making managerial decisions, involve a large number of specialists with the most diverse level and profile of education, computer and software knowledge.

This creates for companies, developers of computer systems oriented to decision support, a huge market of customers in the most diverse areas of economy and business. Data analysis

shows that all software products embodying one or another aspect of management decision support can be classified into two directions:

- Classical decision support systems based on knowledge engineering, expert systems;
- Knowledge Discovery systems, oriented on search of knowledge in the data accumulated in the companies' databases in the process of electronic registration of facts of economic activity. Systems of the 1st type implement the ontological approach - formalisation of the knowledge area with the help of some conceptual scheme. The formulated knowledge creates a knowledge base (KB), from there it is transferred to the user with the help of logical output subsystem and intellectual interface. The systems of the 2nd type realise the analytical approach, which is based on the construction of computer models reflecting dependencies, regularities and structures in the data, interpretation and comprehension of which by a person allows him to form new knowledge about the subject area described by this data.

Thus, the most significant difference between the ontological approach to knowledge retrieval and the analytical approach lies in the very representation of knowledge. The former assumes that knowledge exists separately from human consciousness and represents a set of specially organised information and rules of inference. In the framework of the analytical approach, knowledge is considered as a subjective image of reality, reflected in the human consciousness in the form of concepts and representations. Then the task is to discover dependencies, regularities and structures in the data describing the subject area, the interpretation of which by a specialist allows to form concepts, conclusions and judgements necessary for decision-making.

Factors determining the quality and efficiency of managerial decisions can be subdivided according to certain features: Factors of internal and external nature. So of low the first are related to the controlling and managed systems, where to the second refers to the influence of the environment. These factors include:

- laws of the objective world related to the adoption and implementation of managerial decisions;
- clear formulation of the goal - what is the purpose of the managerial decision, what real results can be expected, how to measure and compare the set goal and achieved results; volume and value of available information - for success in making a managerial decision the main factor is not the volume of information, but the value determined by the level of professionalism, experience, intuition of personnel;
- development time. The more unusual the managerial decision is, the more subjective is the evaluation;

state of the managed and controlled systems (psychological climate, authority of the manager, professional and qualification composition of the personnel, etc.);

a system of expert assessments of the level of quality and efficiency of a management decision. Decision-making in management is a complex and systemised process consisting of a number of stages and steps, formulating problems and ending with the implementation of actions capable of solving the problem.

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