BioTechnology

An Indian Journal

FULL PAPER

Analysis and application of decision making model in university management

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ABSTRACT

With the development of society, the scale of university has been expanding. University management are more difficult. In this case, it needs more effective management to make decisions. Educational thoughts and ideas update constantly. Academic organizations and administrative organizations represent different powers in university. Interest Coordination between them, the democratic level of the grassroots teachers' participation and decisions making, Reasonable allocation of manpower, material and financial resources in universities and so on. They need to be considered in making decisions about the universities. University organizations and other social organizations are different. University is a place of talent training, so it has its own characteristics. It also makes more difficult to promote effectiveness of management and decision in university. This research analyzes the application and value of decision-making model in the management of universities.

KEYWORDS

Decision-making model; University; Management.
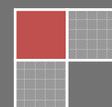
INTRODUCTION

Today, university has changed very much. But the changes in the management of university can't keep up with changes in universities. There is no complete system of managerial decision in university. Especially there are many problems in personnel management. It is a lack of effective communication. It is formalization and the lack of democratic participation in making managerial decisions, The conflicts between administrative power and academic power. grassroots teachers are lack of initiative and motivation, these are a serious constraint to the effectiveness of management and decision making in university. This article summarizes the decision-making system in universities. It analyses the problems in the university management and decision and puts forward several suggestions. We discussed as follows.

OVERVIEW OF UNIVERSITY DECISION SYSTEM

Overview of decision support system

DDS develops on the basis of in information theory, information economics, behavioral science, artificial intelligence, management science and other theories. It is a computer-based tool and applies decision science and other related methods and theories to assist decision-makers to make the most reasonable decision. Its appearance   has corrected deficiency of MIS. It adapts to the development of intelligent for information management.

The relationship between management information system and decision support system

DSS and MIS are two kinds of systems with different functions. They aime at different levels and different goals. The difference is large and there is contact. DSS emphasizes to face the users and provides all aspects of support to decision makers, including the system of external environment, the experience and judgment of decision maker, the internal general information etc. MIS can do these things, and also do some. But MIS is not focused on these aspects. MIS stresses that the integrity of information flow in the system. To provide the required information of the decision maker to all decision makers, and emphasize the systematicness. While for the top decision makers, adapting to individual decision making style of judgment and experience and the internal and external information required, can only provide some information among them to decision makers. The decision makers can't easy to operate. So that DSS and MIS should coexist in university management. Some of these functions can be crossed, but can not be substituted for each other.

Data warehouse and decision support system

Because the traditional MIS and DIS are built on a common data, it's still not effective to solve the problem for rapid and scientific decision-making. The emergence of DW provides a new technology to support decision support system. It puts forward the data warehouse theory on the basis of the database. It processes the heterochthonous and heterogeneous data sources. And then the storage, extraction and maintenance in data warehouse can make advanced decision got support. Data warehouse take effect in three aspects as the decision support function. ①The flexibility and speed of data analysis are improved. ②The process is promoted or recreated. ③It provides and integrates basis for accessing a large amount of comprehensive data.

The target model and method

Target

The target of university management and decision-making is divided into the following several kinds: ①It should teach students in accordance with their aptitude and find ways to improve student achievement effectively. ②With the reasonable settings for the admission scheme and strengthening pertinence of enrollment propaganda, the quality of students can be improved. ③An analysis of the employment situation and finding the target of propaganda can make the students' employment rate improved. ④Analysis of the financial situation and reasonable allocation and utilization of existing resources can serve the school. ⑤By analyzing the development of the profession, we can find a reasonable plan to adjust the old profession and set a new plan for profession. ⑥The construction of teaching team should be strengthened. The talents should be introduced and stabilized actively. ⑦The management of student should strengthen. Students' act in violation of law or discipline can be precluded. ⑧By analyzing the borrowing situation of books and corresponding strategies, the utilization of books can be promoted. The quality of education should be monitored. Then we can determine the supervision target.

Model and method

It needs to build decision model in order to realize the goal of decision model. For example, the target☐ of a university which need to be built is CET4 prediction model. Guiding students can make them take the CET4 at the right time. The model of class division teaching is also a model need to be built. By analyzing the conditions of the students, including the capacity and progress, we can arrange in the corresponding class to achieve the goal of teaching students in accordance

with their aptitude. It makes the students' level of foreign language has been promoted rapidly. Certainly, there are many other models need to be built.

The theoretical model of decision support system in university management
　　According to the characteristics of the MIS in universities, the first task is to make different data of information system classified and comprehensive in the higher level. Then we can abstract analysis and utilization which means the establishment of DW (data warehouse). We need to mine and process data on line based on DW to support for scientific decision-making. DW, DM, OLAP are three kinds of interrelated and independent technology. DW is composed of the historical data, integrated data, metadata and basic data. It can provide the decision information of analysis of time trend, comprehensive analysis and so on. DM uses some methods of mining and analysis of the data in the DW. It can recognize and extract implicit potential useful information to make assistant decision making. OLAP is a kind of technology that can analyze multidimensional data. Because there is a great deal of data in multidimensional space, OLAP technology which offers analysis from multiple perspectives obtain data analysis to assist the decision makers to make reasonable decision. OLAM is a kind of technology formed by DM and OLAP. They assist decision-making in different angles. DW is the foundation. OLAP and DM are two different tools of analysis. Because of the particularity of universities, it need to combine them to build decision support system. Making full use of the advantages of them can improve the function of assistant decision-making. According to the above analysis, college decision support system model is shown in Figure 1.
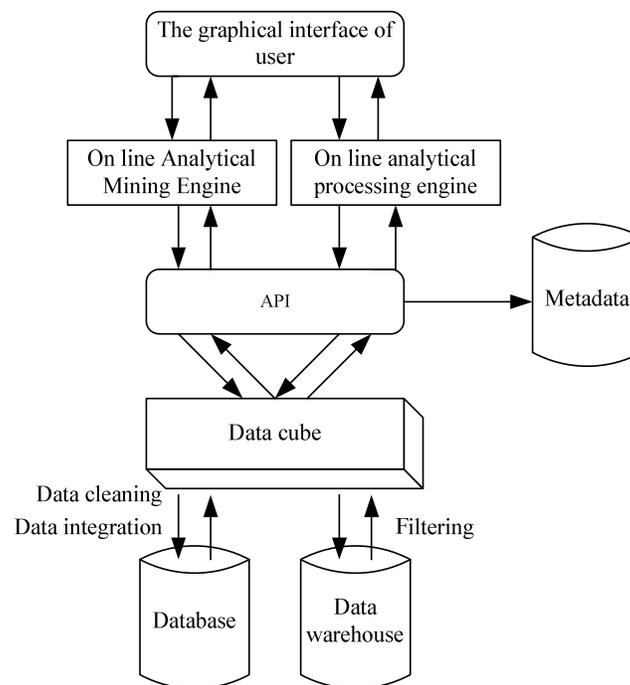

Figure 1 : Decision support system model for DW+OLAP+DM

The model of the system realization
　　First, the data in MIS system is extracted, transforming, cleaned and loaded into the data warehouse. It includes the current data and historical data of student management, enrollment and employment of management and performance management. Then according to the several major functional departments, it divides several data mart into educational administration, finance, student work and so on. The architecture and process of decision support system of management is shown in Figure 2.

THE PROBLEMS OF DECISION MAKING IN UNIVERSITY MANAGEMENT

Focusing on administrative power too much
　　The administrative power in universities is the power that managers have. It is owned by administrator including the headmaster. But the academic power is owned by professors and other academic staff in academic management. They are different in the mode of operation, formation and operation of the main body. This makes them have connection and difference. They all have the power to manage school and make decision. But the scope of management and decision is not the same. Academic power plays a very important role in the school management. Administrative power can't intervene the academic decision making. But the situation that administrative power intervene the academic decision making is often appeared. It causes by too much administrative power in university management and decision making. This is detrimental for the university's academic development. And it also affects the healthy development of universities.
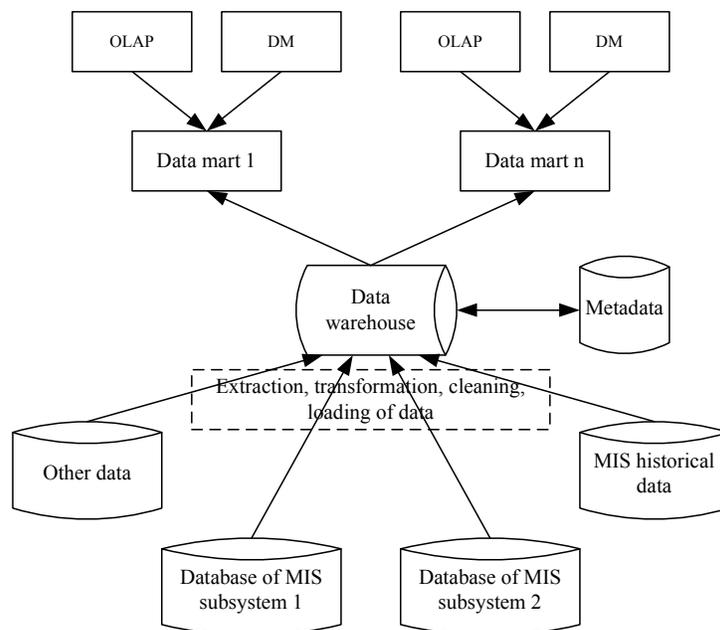
Figure 2 : The implementation model of decision support system in university management

The limitations of the manager in university

      The managers in university determine the level of the university management and decision-making directly. One of the important determinants of university management decision is effective or not is the leader. Decision making is the core of university leaders' responsibilities. Through the management decision making to manage school, the efficiency of school is improved. And the success or failure of school management is directly affected by the decision is right or not. The headmaster plays a very important role in the development of the school. So the headmaster's role is irreplaceable in management and decision, especially the major decision. The core leaders of universities has a direct influence on the development of universities in some ways, as shown in TABLE 1.

TABLE 1 : Limitation and influence of decision-makers in university management

Limitations	Influence
Limitation of knowledge	The limited decision-making knowledge of decision makers restricts the development, selection, implementation of the program. And it also restricts evaluation and foreseeability of the decision. Finally, the result is that the effectiveness of decision-making and the improvement of school efficiency is affected.
Limitation of foreseeability	The state's macroeconomic environment is developing. The micro environment of University's own development is changing. So the higher education is complex and ever changing. The prediction of the future environment exists deficiency inevitably if the manager is limited for knowledge and information. The limitation of foreseeability affects university decision-making system and the effectiveness of decision-making.
The theoretical value of decisions	Under the influence of different values, understanding and using the knowledge of information is different between decision makers. So it have a different decision and results.

Non-democratic decision-making in university management

      Decision making in management is a kind of activity. For problems in the management, decision makers develop viable programs to solve them. And they choose a best scheme to complete the activity. Decision making includes identifying problems, developing solutions, schemes selection, implementing plans, evaluating the programs. But there are many problems in university management.

Unicity of decision-making in management

      Decision-making is not a personal thing. It needs to have a lot of people's participation in decision-making. The participation runs through the whole process of making decisions. But there is a fact that the main body of school decision-making is single in university management. The headmaster or the leadership is the main body of school decision making. The majority of staff members and students have a small effect in the management of decision making. This makes the management and decision-making lack universal representation and broad foundation.

Closure of the decision-making

　　　　The goal of management decision-making is simple. It is to solve problems. So the beginning of decision-making is raising the question. Problem refers to the gaps between possible condition and actual condition. Managers must be able to find the problem in the gaps and the advice of staff and then determine the problem. But at present in the management of colleges and universities, an analysis of the problem is too simple. Because the power of the management decision-making is concentrated. It forms a single communication. Generally speaking, a few managers make a decision first, then they sent it to junior staff in the form of the command. It is more serious in the closed decision making. It has some deficiency for solving the problems.

ADVICE TO IMPROVE DECISION-MAKING MANAGEMENT IN UNIVERSITIES

By improving the comprehensive quality of administrators, decision-making level is improved in university

　　　　First, it needs to reform the system of administrators' selection and appointment. It also needs to replace competitive appointment system to cadre appointment system. The selection of personnel needs to comply with the principle of openness, fairness and justice. Selection should be scientific and national. At the same time, it also need use a variety of methods for selection such as the open recruitment, competitive appointment, democratic elections in the organization and so on. That makes it possible to arrange administrator with high ability in each position of college. Second, by conducting regular education and training the management personnel in universities, personnel's own quality and creative ability are improved. It can't treat the management in college as administration. There are two functions of management in universities. They are administrative management and academic management. After training and education, administrators of university should possess the basic theory and knowledge of management. Systematical and coherent system of higher education management should be formed. Through the education and training of administrator, their comprehensive quality and the level of management decision will be improved.

Establish a management mechanism that makes the administrative power and academic power in harmony

　　　　In the college management decision, it can't focus on administrative power too much. The administrative power that headmaster represented and the academic power of academic committee should perform their own functions. They should be a clear division and establish the management mechanism with mutual coordination and balance. It makes the academic power participate in the management are clear in the system. This mechanism has a limited effect for generalization of the administrative power. It also makes the academic organization as the subject of academic management get clear. Besides, it needs to maintain the executive authority of the administrative organization. Using administrative powers and mandatory can protect academic act normal and reasonable. It makes the academic power towards the right direction gradually. Professors and scholars can involve in academic research more actively and make a contribution to the development of universities.

Improve the democratic decision of university management

　　　　Teachers are the main body in University Management. Therefore, we need to do more things to improve the teachers' participation actively. Administrators should make their needs are satisfied in different aspects. The universities should provide appropriate facilities and working conditions to make teachers' own value can be achieved. In addition, teachers need encouraged in spirit. Giving the care, respect and trust to teachers can give full play to their energy. University administrators should consider the majority of teachers' views when making decision. Collecting teachers' good advice can improve democracy of the college management and decision making.

CONCLUSION

　　　　This article analyzes the application and value of decision model in the management of colleges and universities. First, the college decision support system are outlined. It includes overview of decision support system, the target model and method, the theoretical model of decision support system in university management and the model of the system realization. Second, the article also analyzes the problems of decision making in university management. It includes focusing on administrative power too much, the limitations of the manager in university, non-democratic decision-making in university management. Then we put forward some suggestions. By improving the comprehensive quality of administrators, decision-making level is improved in university. It makes the administrative power and academic power in harmony if we establish a management mechanism. We can also improve the democratic decision of university management. Finally, the level of decision-making can be improved.

ACKNOWLEDGEMENT

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