

Use of Information Technologies in Management of Corporations

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ABSTRACT

This article covers issues such as the use of information technology in corporate governance, information technology and the interaction of corporations, information models of corporations, the main types of information objects, the characteristics of processes.

Keywords: corporation, information, system, model, object, technology, process, feature, management, processing.

INTRODUCTION

Modern information technologies and systems play a key role in the effective organization of corporate governance in the new social conditions in our country. In this regard, it is important to study the relationship between corporations and information technology, as well as the factors that affect it in corporate governance.

Before the introduction of modern information technology in the management of corporations, it is necessary to study the general condition of corporations, the management system, external and internal relations, as well as to create an information-logical (logical) model.

The information logic model of corporations is a data model that reflects the set of information objects in the corpus of the corporate body and the relationships between them. The object of information in the field of the body is a kind of information reflection of a particular field, appearance or process, about which information is expressed as a data bank or information system.

Physical field.

The field of a body is manifested as elements of a mathematical system, about which information is stored and processed in a system. A unique tool is used in the analysis of the field of the body and to reflect them in the form of information in the database. To express the area of a body, the object, the properties of the object, the interaction of objects, and the properties of this interaction are used.

An object is an arbitrary element of a system. In this system, a separate body unit is a copy of an object, and a set of objects formed on the basis of some principle is called an object type. In any collection, grouping copies is called classification. The objects of the economic sphere are divided into three types: the essence of labor, the means of labor, and the executors.

A property of an object is a quantity that represents its state in any piece of time. The interaction of objects means their interaction over a period of time. The interaction of objects is said to be the interaction of several objects involved in some process that takes place in time and space. Such a feature of cooperation represents the interdependence of industries.

In the process of manufacturing systems, it is necessary to ensure that the objects and processes of the physical field are fully reflected in the stored data. This problem can be

solved as follows, i.e., the properties of the objects or processes provided must be specified. Attributes are information reflections of such properties, and as a result a copy of the object is presented to the database as a set of attribute names and its values.

To have complete information about the essence of an object, it is necessary to expand the set of properties that represent the object. In this case, the amount of properties must be such that there must be a belief in distinguishing one type of object from another, or that one type of object must be distinguished from another type of object, that is, there must be comparative properties.

When an area of a body is represented, it is necessary to indicate its boundaries on a regular basis, that is, the amount of objects and processes that fall into that area

The object of information is a reflection of some essence. The object of information is characterized by a number of qualitative and quantitative features, that is, through the corresponding requisites and requisites. As a result, the object of information is formed on the basis of a logically interconnected set of requisites, and these requisites represent some essence of the field of the body.

The set of details of the information object must meet the coordination requirements. The composition of the details of the information object determines its structure. If only one requisite value corresponds to the value of one key (requisite key), then there is a practical connection between the requisites.

MAIN PART

When graphical information objects represent an infographic model, these models are represented in the form of a right rectangle, i.e., if the object name is given at the top. The details are represented at the bottom.

Requirements for coordination of sets of requisites of information objects are:

1. The information object must have a unique key (simple structure).
2. All expressive requisites should not be interrelated
3. All the details included in the component key should not be interrelated.
4. Each expressive requisite must be practically completely dependent on the key.
5. The requisites represented in the composite key must be fully related to the set of requisites contained in the key.
6. Each expressive requisite does not have to be linked to another expressive requisition key.

If there is a transit connection between the details of the information object, then this object must be divided into two information objects.

As a result of the analysis of the field of the body, the following two methods can be used to distinguish the object of information: intuitive (based on the product of mental thought) and formal. Intuitive direction determines the direct representation of specific objects of the body sphere and other essences of the sphere. This requires experience in the development of information systems, and this situation shows the need to determine the requisites of information objects in order to meet the requirements of coordination. As a result of the analysis of the field of the object in the formal direction, the contents of the documents to be stored in the database and their details should be identified and practical connections between the details should be established.

Systematic relationships between information objects.

In the design of relational databases, links are established between information objects, regardless of whether there are practical connections between them. Such structural connections are established in order to satisfy all possible requests of users. Relationships between information objects are determined based on the properties of thematic objects or processes, and processes and objects are reflected on the basis of these information objects.

Information is a canonical form of the logical model (LM).

In a canonical AMM, objects must meet coordination requirements, and information models must be regulated by levels. At the upper levels of the canonical AMM are the main information objects, and at the lower levels are the objects associated with them. At a high level, there are objects that are not related to other objects, and there are no unwanted connections in them. The canonical AMM can be hierarchical or networked. The canonical AMM corresponds to the logical structure of relational MBs.

The organization of data at the disposal of the computer is carried out at two levels. The physical organization of data determines their placement on computer data carriers. The user operates in the process of organizing data logically while operating in the field of software and data. The status of such an organization is determined by the appearance of the data structure and data models, and is supported by the software tools used.

Data models include an interconnected set of these data structures and the means of performing operations between these structures. The appearance of the models and the types of data structures used in them show the state of data organization and processing.

The choice of model is determined by the size and disposal of the issues to be addressed, and the need and speed to ensure the integrity and security of the data. Data models fall into two groups: syntax and semantics. While syntax groups depend on the form in which data is presented, a semantic group is defined based on the content of the data.

File, hierarchical, network, and relational models are used in data syntax models.

Semantic models of data. -ISSN NO:2349-0721

Semantic networks are in the form of intended graphs, whose joints are designed for different information. Semantic networks have four categories of edges: objects, events, properties, and values. Objects are physically represented, representing constructions and parameters. Events represent actions that take place in a specific reality, and it shows the types of actions. Features are used to express the state of a system or to improve objects and events.

The difference between the edges of the network indicates that the joints are divided into three types. The joint that connects the two instances represents the affirmation, the joint between the class and the instance represents an example of a class element, and the joint that connects the two classes defines a kind of relationship between classes. Semantic relations in the field of the body can be divided into: linguistic, logical, theoretical-complex and quantitative.

The process of creating complex information analytical systems for corporations involves a wide range of tasks. The development and creation of management systems is a labor-intensive and complex process. Designing management systems that depend on conceptual models of key objectives is very important and necessary.

Creating a complex information system that can be used to create a corporate database for management includes the following steps:

1. Gathering of the corporations of the corporation for the purpose of studying the physical field according to the state of their operation.
2. Analysis and modeling of corporate activities (or business process modeling). The purpose of this stage is to create a practical model of corporate activities, to identify the process of analyzing the shortcomings in the organization of corporate practice and, if necessary, to completely or partially reorganize the structure of corporate governance.
3. Development of a conceptual model of the corpus luteum.
4. Development of information and practical models.
5. View logical and physical models of data.
6. Implementation of the master project and determination of technical specifications. At this stage, there may be a need to partially or completely rework previously created models.
7. Implementation of information systems (creation of databases, organization of client attachments and documents).

The methodology of developing complex management systems can be applied at different stages of the creation of information systems and at different levels of corporate automation. The system can be created both for a corporation that is not fully automated, for corporations operating in the unified state of local systems, and for corporations that have a corporate governance system that does not meet the requirements of the given conditions.

Automation systems of various complexity are applied to the management of corporations. Such systems will have different levels of freedom in the process of operation, improvement, adjustment, and adaptation, and will have different levels of capabilities in the study of corporate performance.

In many corporations today, in the process of creating automated systems, system developers combine previously existing local systems based on economic circumstances. The main disadvantage of such a structure is the incompatibility of local systems with each other and their incompatibility. In such cases, at different stages of the practice and in different parts of the corporation, there is a hesitation and contradiction of the data entering the MB. At the same time, this situation deprives the MB of the opportunity to improve and adjust the system in the event of a change in the specific conditions of practice.

When creating and transitioning to a new information system, it is necessary to take into account existing developments. If the existing local system corresponds to the general model created, then it can be combined with the new system being created. In this case, the integrity of the overall model is not compromised.

Below we will consider the methods and directions of creating an information system that covers all the main activities of the corporation. These methods include:

1. Conduct research in the field of the body.
2. Development of practical models of the corporation on a "given situation".
3. Analysis of the practical model of the corporation on the "given situation" to combine high-level rational models,
4. Create a logical model of data based on the use of ER-diagram methods.
5. Create a project view of the MBs.

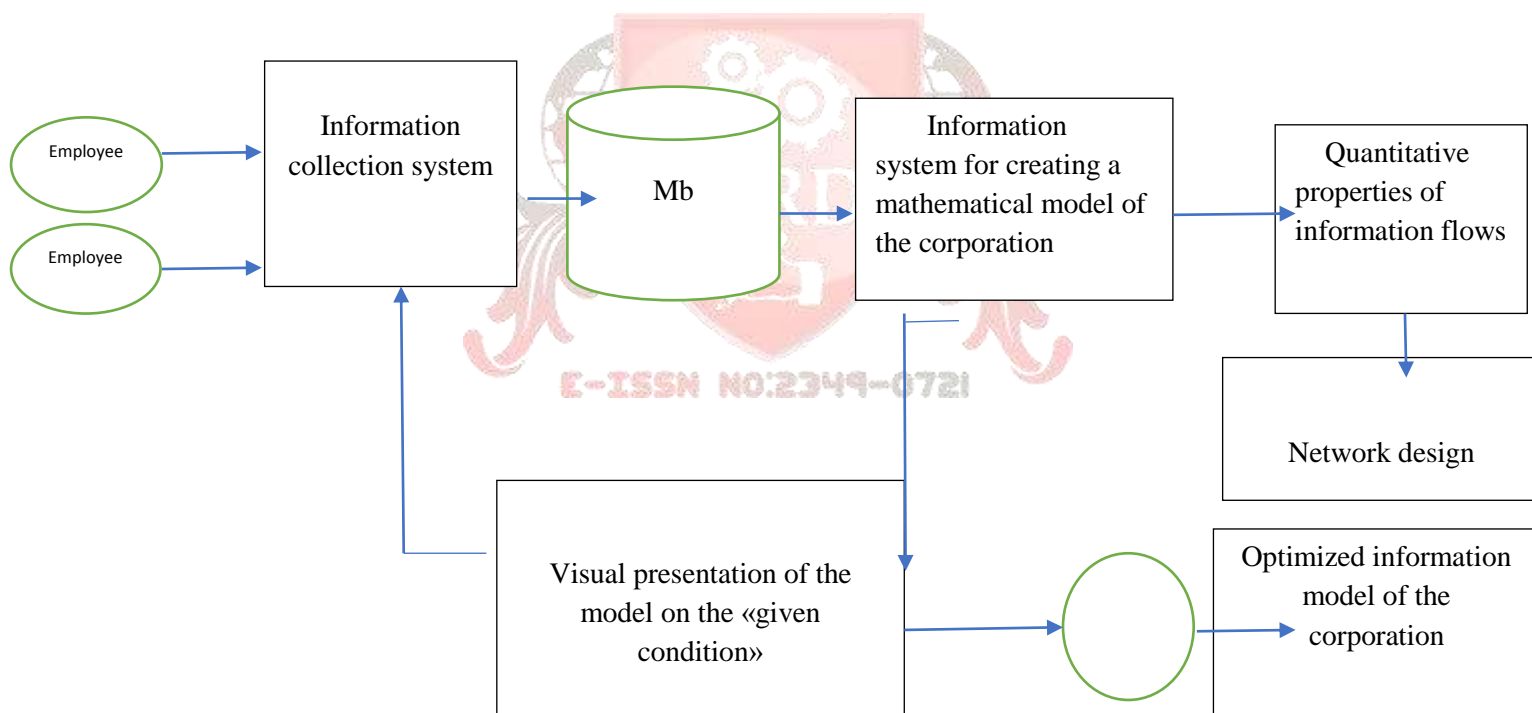
To break down the data and activities in the corporation, the project direction "From top to bottom" is used, that is, the information in the corporation is determined in stages, starting from the general level. This design is called Cascade and is used to create software. In practice, in some cases, actions are taken to identify and organize the data at this level, returning to the previous level.

The model allows you to create MBs with information about the activities of the corporation, created on the basis of the expression of the logical structure. These MBs allow you to store data and improve your basic data, as well as get instant information about the corporation. The model-based MB also allows you to create models that allow you to add and integrate local systems that implement certain types of tasks. The model easily expands and improves as new actions emerge in the corporation.

Information model of the corporation.

Employees of the information department of the corporation create research materials on the basis of their own means, and they are coded and automatically encrypted (creating a database of information flows of the corporation).

The following figure shows the information model of the corporation.



System analytics

Picture. Information model of the corporation

The generated MB is then converted to a mathematical model. This mathematical model can also be automatically transformed into the following forms:

1. Estimation of the amount of information flows between different structural elements of the corporation.
2. Creating a visual information model of the corporation.

Quantitative assessment of information flows is the basis for the correct design of corporate and corporate networks. The visual information model of the corporation is the primary material for system analysts to analyze existing models and reshape it into a “given situation” model. Applying this idea can give good results in the analysis of corporate document flow.

It is necessary to use a systematic approach in the implementation of information systems in corporations. This situation involves three areas: data collection, processing, and modeling.

This line must meet the following requirements:

1. Systematic. The direction should be included in the modeling process from the collection of primary information in the research process to the acquisition of an optimized model.
2. Completeness of the mathematical expression of the corporation. It takes into account the external environment, internal structure, information flows and their parameters.
3. The possibility of manifestation of the model on different scales, ie all stages from the level of integrity of the enterprise to the internal levels without additional research.
4. Opportunity to apply the mathematical apparatus.
5. Ability to process data in a computer to speed up the process of designing large volumes of data.
6. The ability to analyze the model on various criteria, ie the need to run the structural elements, their optimization, the expediency of automation, etc.
7. Its suitability for designing a model based on the structure of the information network of the corporation.
8. Simplicity and ability to enter data and sections into the information system of employees.

Systematic meaning refers to the completeness of the stages of creating a corporate information model, i.e., the principle created at each stage must be agreed with the next principle.

The steps to create a corporate information model are as follows.

1. Receiving information about the corporation, ie conducting pre-project research.
2. Primary processing of collected data.
3. Creating a mathematical model of the corporation.
4. Analysis of the mathematical model,
5. Determining the characteristics of information channels, ie estimating the amount of information flows.
6. Visualization of the corporation information model for analysis by system analysts.

The mathematical interpretation of a corporation is to create a mathematical model of the specific features of the industry and the interactions between them. In this case, the structure of the enterprise, the issues to be addressed and information flows are considered in general, that is, the distribution of tasks by structural elements of the corporation, the distribution of information flows by business units, etc. At the same time, the expression of the field of automation in the external environment, that is, in the interaction with other enterprises and organizations. An important feature of the mathematical representation of the

corporation is the ability to create models of different scales. A scale model refers to the following different levels of an enterprise:

1. At the level of integrity of the corporation, that is, interaction with the external environment, global goals and objectives.
2. At the level of corporate divisions. The main elements of the model are the structural elements of the corporation.
3. The level of a part of the corporation. In this case, the level of jobs in the structure of the corporation is considered separately.

To ensure the possibility of such scaling, the requirements must be taken into account in the initial stages of modeling.

In the field of automation research, it is necessary to adopt the maximum complete information about the lowest part of the corporation. It is necessary to systematize the received information in a hierarchical structure for the initial processing. Based on this method, it will be possible to create a mathematical model of arbitrary scale.

The creation of a mathematical apparatus is generally understood to be simple in terms of its creation and the possibility of its presentation on a computer. In this case, the completeness of the elements involved in the model must be sufficient for the purposes of its creation. Creating a mathematical model is the study of information components on the basis of explication. In this method, the model is intended to be used as a set of matrices. Working with such a model is done in this case using standard matrix operations.

It is convenient to present such forms of models on a computer, and algorithmic operations are suitable for performance of operations by means of matrices.

Collection of the obtained data and their primary processing is carried out separately. In this case, the collection of data is carried out by designers and employees of the corporation, and the primary processing is carried out by the designers.

To solve these problems, it is important to use a generalized methodology based on the application of special tools. The main idea of such a methodology is to combine data collection and their primary processing steps. Employees of the corporations under investigation in this area also carry out the primary processing of information in the process of its collection.

CONCLUSION

The application of such a methodology creates a database that allows further analysis of information and the creation of models. The effectiveness of such an approach is reflected in the reduction of research time.

The main stage of the method proposed above is the collection of information about the corporation. The completeness and reliability of the information received is important in data collection. Data collection tools should have a positive interface with the input staff. In addition, the information system must have a tool to monitor the completeness and accuracy of the information entered.

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