IMPLEMENTATION OF INFORMATION-ANALYTICAL SYSTEMS IN BANKING

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Abstract. *Modern business has many tasks, which consider processing and analysis of a great amount of unstructured raw information. To handle such amount of data and to make a profit out of it, modern business need an instrument which will be able to process the data and found hidden patterns among the information. Such instrument is information-analytical system. Information-analytical systems able to process large amount of data, convert and aggregate it into readable for a human format. Such systems provide all levels management with valuable information, which can help in decision-making, both operation and strategical. A perfect place to implement a system of a kind are banks, because banks always need to work up great amounts of data and make decisions according to the information they have, also banks need powerful analytical instruments. All these problems could be solved with instruments that can be built on top of the information-analytical system. Besides, these systems can speed up not only analytical systems, but also transactional ones.*

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Introduction. Today, in the area of information technologies online information-analytical systems have obtained special relevance. Firstly, let define what information-analytical system is. Information-analytical systems (IAS) are systems that according to continuously received data help with making of administrative decisions.

IAS — this is a modern highly effective tool of the support of making tactical, strategic and operational administrative decisions, on the basis of operational and visual assignment to the entire amount of the data of the users and systems, which is responsible for analysis of the systems' current state and making of administrative decisions.

IAS in banking. The complex of information-analytical systems affects entire administrative vertical line: corporate account, strategic planning and financial and economic planning. Especially this is reflected in the area of banks.

The construction of IAS is inherently very expensive and laborious process. In order to avoid such problems and provide the possibility of designing a pre-unified IAS, easily adaptable to changing external conditions, it is necessary to theoretically and methodological basis and relevant tools for mental means of its realization.

The first system for implementation in the bank the so-called OLTP system. OLTP is an abbreviation that means On-Line Transactions Processing system. This system will help automate daily banking operations. Its structure is designed to quickly and effectively perform basic actions, of which banking operations are formed.

In most cases, the data structure of such a system has a degree of normalization not lower than the second. As the name OLTP, the system works with the current (operational) data. On average, current data is the data current at the current time. In banking, this is data on the accumulated for the current fiscal year. Data for other years are stored in special archival systems or are generally erased.

The OLTP data model of the system supports the operational processes in the bank and represents the entities business processes; their attributes are convenient to enter and modify, but not to analyze. Therefore, systems focused on data analysis, should be attributed to a separate class of automated banking systems. We will call systems oriented to analysis data by information and analytical systems (IAS). Conducting the analysis requires access to a large the amount of data. Time is the most significant dimension, and usually the analysis is conducted to identify certain trends: first, data are analyzed about the past and present, and then the revealed tendency is extrapolated for the future period of time. Thus, two types of activity - day-to-day operations bank and analytical processing - require both different data structures and different access procedures and information processing. Usually, bank operations and analytical processing are implemented in two separate systems.

It should also be noted that analysis of data implies not only the identification of certain trends for the future but also provides support for decision-making and the issuance of various reports, based on existing data.

Define the basic requirements for IAS. IAS should:

– to store a large amount of data;
– maintain internal consistency data;
– maintain a qualitative replenishment process data.
– maintain high speed of data acquisition;
– Provide convenient viewing utility data;
– ensure the completeness and reliability of the data;
– interact with OLTP systems and external data sources.

The requirements for financial analysis determine the IAS, and the structure of the OLTP system to some extent, the data warehouse structure IAS and interaction between IAS and OLTP systems.

To date, IAS developers for banking activities, do not take into account existing OLTP systems. One of the aims of the thesis work is the proof that accounting for the structure of OLTP system in the development of IAS reduces the time it takes to and also improves such indicators as response time to query and update data. For more information, the structure of the model of interaction with users, we list the users of the IAS:

– managers are the board of directors, senior management and accounting they must view ready-made analytical reports, reporting forms of the budget, and budget schedules, as a result of which decisions on the regulation of interest rates;

– managers are the board of directors, senior management, and accounting they must view ready-made analytical reports, reporting forms of the budget and schedules on the budget, as a result of which decisions should be made on the regulation of interest rates;

– Administrators are users who handle database maintenance, access rights and security issues. They should also supervise the loading of data in the IAS;

– Technologists are users of the main function which is the adjustment of the calculation technology, the coordination of the appearance of graphs and the adjustment of printed forms.

– End users are a group of users whose main functions are calculation budget of the client and printing report forms on the budget, as well as the so-called. "Fit" the budget by analyzing "what-if";

For each user group, a simple and user-friendly interface should be implemented, to work with IAS.

The general network model in it we consider IAS as a black box, which on the one hand is a consumer of information from external sources, and on the other is a source of information for users.

The network model is supported by the following documents: organization chart of the enterprise and network diagram and description of external sources.

Conclusions. Summarizing, one can say that a functional, informational and network model of the chosen subject area was built at a high level design. Depending on the technology used for implementation, it can determine outgoing documentation. In this situation, all outgoing documents of each sub-step can be combined into a document called “a high-level description of the project”.

In this paper, based on the analysis of existing concepts of creating systems of this class and trends development of technology and information and analytical activities in general, developed a theoretical basis and the methodology of building IAS. The proposed method provides the ability to build IAS, in a relatively short period of time, adaptable to a rapidly changing and suitable for the operation of a large group of enterprises. Theoretical the database allows you to automate the build process of data warehouse (DWH) for analytical systems based on the formal model.

At this stage, we have to choose the conceptual architecture of IAS, and on the basis of the chosen concept to describe the information, functional and network content of the IAS. Description, as the name suggests stage, we will conduct a general, at the level of blocks and interrelations. A more detailed description will be provided at the following design stages.

The characteristic and main advantage of organic systems is that they allow you to quickly adapt to the surrounding environment, without changing, but only developing its structure of construction. They allow:

1. Manage the volume of tasks to be solved for each individual function of the bank in indissoluble unity with the volumes of tasks to be performed on other functions.
2. Manage the process of generating new, demanded by the environment functions without loss of quality management of existing functions.
3. Manage the process of returning to functions that for some reason were not involved at this time, but again in demand.

The first level of the architecture shows a set of procedures and methods for loading, converting, aggregating and cleaning up data coming from external sources in data warehouse.

External sources, in this case, are data from automated banking systems (ABS VM), data from their PC CRED2000 and data from office applications.

The second level is directly a data warehouse, that is, a single integrated data source, which contains consistent information from various external sources, suitable for analysis. In the data warehouse, the data is stored in an aggregated form. There are three levels of aggregation - the level of high aggregation is needed for global analysis and reports of high periodicity; average aggregation and the level of detailed aggregation which is suitable different types of analysis, respectively.

The third level of HD is a set of object-oriented data marts that contain information for IAS end users. The information in the data marts is spaced so as to make the work of the user as easy as possible. In different showcases various information that is suitable for carrying out this or that kind of analysis. All data in the display windows duplicate the data in the data warehouse, such redundancy allows to optimize the work of IAS. Development of an organic control system on the basis of modern scientific and technical achievements required the description of a methodology that would answer following requirements:

- has a practical focus and realistic implementation;
- is available for understanding and mastering by specialists after a short preparation;
- is universal for use at times personally applied fields of activity;
- maintains continuity with the accumulated knowledge and scientific and technical achievements;
- has the opportunity to improve, supplement and develop.

The tasks of any information-analytical system are efficient storage abilities, processing and data analysis. Effective storage of information is achieved by the availability of a number of data sources in the information-analytical system. Treatment and the consolidation of information is achieved by applying tools for extracting, converting and loading data. Data analysis is carried out using modern tools for business data analysis.

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