ODERN TRENDS OF ACCOUNTING INFORMATION IN ERP SYSTEMS

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Abstract. Companies operating in international markets in the context of global competition – is a complex multilevel structure of relationships with its particular hierarchy. The Accounting and Analytical Management System (AAMS) is designed to solve the entire spectrum of tasks (operational, tactical and strategic) as efficiently as possible. Organizational structure at the same time has to be rather flexible to response adequately and timely to newly arisen challenges and opportunities of the environment.

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Introduction

The whole of tasks facing the business entity, defines its AAMS, and, therefore, determines the logistics of information flows. This is due to the fact that each management decision at an industrial enterprise, starting with its preparation to its adoption and approval, is associated with a specific set of information iterations - the movement of information according to the matrix of the organizational structure.

Despite the complexity of the made decisions, the procedure of their adoption may and must be regulated. A generalized description of how the solutions of separate classes are formed can be represented as the movement of information flows and basic stages for the solution formation.

Accounting information in ERP systems

The reason for the lack of use of accounting and analytical information when making managerial decisions is the ambiguity associated with the imperfection of the specific technology used by the accounting system of this entity.

The problem of ambiguity for the management system of the economic entity has existed permanently. The ambiguity is usually heterogeneous in the form of its manifestation and in its content. For example, the ambiguity associated with the specific technology of accounting, can be defined as a number of existing restrictions that complicate the process of interpreting the credentials by the employees of the management system of this entity.

These restrictions include:

– Firstly, the fact that the information received on the basis of accounting is relatively difficult for perception by unskilled users due to the specificity of its formation;

– Secondly, any accounting information is prone to be influenced by both the human factor that is the subject of individual research and the inaccuracies inherent in the imperfection of the accounting system itself and the specific technology which it uses;

– Thirdly, a significant impact on accounting information is caused by the issue of essentiality which has existed up to date. The essence of this problem lies in the subjectivity of evaluation by compilers of accounting information, what should be considered as essential data, and what – not. And the reason is that there is still no single criterion which would allow unequivocal assessment of the essentiality extent of accounting information both by the compilers themselves and users who make managerial decisions at first hand.

Consequently, despite the fact that the AAMS is being constantly improved, its direct functions for the above reasons, as well as the ever-changing legal and regulatory framework, do not allow generating reliable accounting information to an adequate degree.

The effective operation of an industrial holding as a whole depends on the achievement of the goals set for it and its position in the market environment. Ensuring the fulfillment of these requirements is the task for the AAMS.

The methodological peculiarity is the widespread use of the program- and goal-oriented approach, which involves the need to formulate the goals of the company and their relationship with accounting and analytical resources.

The implementation of the program- and goal-oriented approach involves a clear financial policy with well-defined business processes of enterprises, as well as the implemented management information system of ERP class. Implementation of ERP class systems allows not only accumulating accounting and analytical information concerning the economic activity of an industrial enterprise, earning the status of a reliable source for obtaining financial statements, but also allows implementing the AAMS.

Only on the assumption of functioning of the integrated ERP class system one can foresee the possibility of effective work, and hence, the expediency of the functioning for the departments of methodology and accounting, control, economic planning and analysis at industrial holdings, which provide management of the industrial holding with accounting and analytical information.

The implementation of ERP class systems will unify the accounting and analytical processes, standardize the methodology and reporting for the group of enterprises and, most importantly, provide operational and reliable data at the level of primary documents of enterprises. Otherwise, the specialists of the service center will not be able to take responsibility for the reliability of the data presented to them by the structural units.

The planning process should begin with the collection and comprehensive analysis of the initial planning information. At the first stage of intra-firm planning, they collect accounting and analytical information that characterizes both the external and internal environment of the enterprise taking into account numerous factors that influence the activity of an enterprise in market environment. After collecting the initial planning information and its comprehensive consideration, it is necessary to carry out a marketing analysis. Its essence is to study the markets in which the industrial enterprise operates and the external marketing environment in order to identify possible problems and disadvantages, as well as prospects for its activities.

To develop the plan, planning specialists need appropriate accounting and analytical information. In addition to predictive and marketing data, that is, basically external information, planning department receives a large amount of internal information:

– availability and structure of production capacities, potential re-adjustment, need for working capital

– availability of equipment for the output of new products;

– size of staff and occupational structure;

– finance (in particular, own and borrowed funds);

– degree of readiness and structure of new scientific and technical developments, etc.

The solution proposed by SAP for the Advanced Planner and Optimizer (APO) (Fig. 1) is not a classical solution for the ERP class, but is a solution of the Advanced Planning and Scheduling (APS) class.

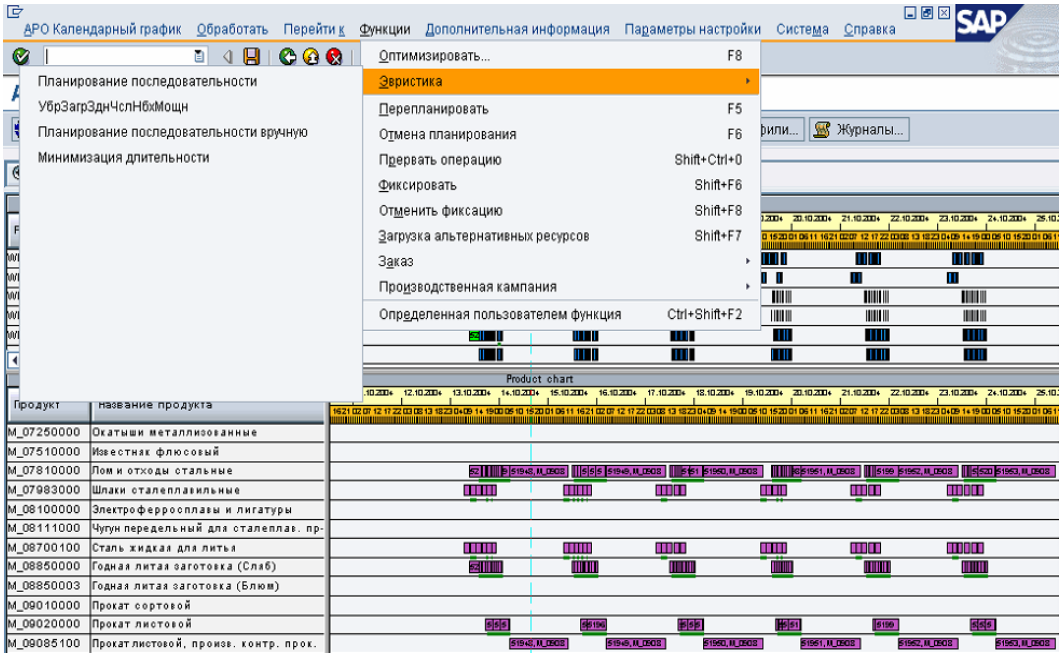

Fig.1. The process of operational planning of the production process in APO

From the point of view of production planning, this class solutions have a number of advantages over traditional ERP solutions, since they offer special functions for production planning that allow making a plan consentient in operations and balanced in line with production capacity, as well as solving optimization tasks.

According to the definition suggested by Bill Gates *(2005)* the system of information provision is a kind of 'a nervous system' of the enterprise, because it provides the viability of the enterprise. If this system 'misses the mark', the company immediately experiences negative consequences.

In accordance with this, a certain degree of detalization of accounting and analytical information with a different degree of aggregation corresponds to each level of the company's management. In addition, the dynamics of each index that is used should be represented.

Authorized access to information resources for users should be implemented in the AAMS with minimal time expenditures, without any restrictions on the level of a user's special training.

The basis for the mechanism of customer support of the enterprise is the consumers' requirements to the products and services of the enterprise and the ways of their satisfaction and new consumer properties of products for which the consumer will be ready to pay.

The functioning of internal processes of an industrial enterprise at its entrance has the initial indicators of the mechanism of its work with consumers, costs, output, operating time, methods of quality control, etc.

The mechanism of the company's functioning as a developing system characterizes the aspiration for further development and is a prerequisite for successful survival in the long term.

Information component is an integrator of all units, subsystems, forms of management and management methods, in other words, the mechanism that connects the rest of all mechanisms of the enterprise. Completeness, reliability and efficiency of information directly affect the process of formation of knowledge about current processes, their mutual influence on each other, which ultimately determines the adequacy and efficiency of managerial decisions.

As part of the further development of the information management system at the corporate level, it is necessary to implement information architecture of all liability centers and technological routes, to increase the comparability of data, to increase analytical capabilities, including the development of specialized information portals for the operational analysis of work of responsibility centers. The centralized storage of technological data should become the core of the system.

The implementation of a single corporate data warehouse will facilitate the integration of information resources of production management and quality management systems at the work shop level. Its creation will organize storage, archiving and access to technological information. It creates a single source with a complete set of information, thus facilitating the work of analytical services, as well as helping to implement modern methods of constructing analytical systems. The interface will allow users to view passports for products, information on production technology in graphical and tabular form, and generate random samples with the help of the report program generator.

For industrial holdings operating in international competitive markets with tremendous assets and production having clear inertial specificity, the development of managerial decisions and work for the long run become a continuous process that never stops. Rapid and qualitative response to changes in the environment is one of the competitive advantages in modern business.

The revealed features and trends of the new management paradigm determine the need for the formation of competitive advantages, which is the result of the enterprise managers' ability to adapt more quickly to a competitive environment. Evolutionary system research in the field of theoretical and practical study of the process of development and implementation of managerial decisions is conditioned by the transition to qualitatively new, innovative operation forms, which objectively implies the need for structuring the system approaches in accordance with the process of development and adoption of managerial decisions. When targeting the latter at the achievement of the optimal result in market conditions, it is advisable to formulate the objective by making adequate changes in the managerial process concerning the introduction of new effective tools, means, and methods for their

implementation. A characteristic feature of such changes is the transition from scientifically-differentiated management tools to systemically-integrated ones.

The dogmatization of an effective management system is minimized by means of creating a flexible scheme for the interaction of structures, which involves multivariance, which at the same time is regulated by a set of certain conditions regarding the application of one or another option - quantitative, operative, organizational, etc. This approach allows modeling the dynamic development of the company, the scale of its AAMS and maintaining manageability during the reorganization, and as a result:

– the methodology should take into account the previous management structure and maximally use all its positive properties;

– the system of organizational and economic management of an industrial enterprise must ensure the unity of all its components;

– the developed management methodology should remain invulnerable in case of the elimination of one of its components;

– the methodology should logically stipulate further evolutionary development of the management system;

– any development of the situation, in particular the possible occurrence of extraordinary situations, must be envisaged and regulated *(Kontsova, (2004)*.

The research of the functional changes, necessary for the introduction of the information system SAP ERP, deserves for our attention.

177 problems, connected with the doubling of functions and the superfluity of functions, were revealed during the research on the example of the PJSS "ArselorMittal Kryvyi Rih" company. These problems are mainly connected with the double introduction of information into different systems and the manual accounting of the enterprise services. The elimination of the presented problems is foreseen in the suggested conceptual decisions, i.e. with the help of the information system's introduction of ERP – SAP class.

It's necessary to indicate that the need to reorganize processes, methods of accounting, coding, observation appears practically always during the introduction of ERP systems. The final list of the changing and elaborating conceptions will be made more exact during the elaboration of technical decisions.

It is advisable to refer the creation and remaking of the existing methods and the company standards (CS) to the number of the urgent measures. This remaking should guarantee the following:

- the methods and the company standards (CS) will distinctly outline the responsibility frames of the concrete subdivisions and will permit to exclude the doubling of operations at the level of subdivisions;

- the standards regulate the fulfillment procedures of separate processes and exclude the internal contradictions;

- the introduction of the Part on the Business-Purposes into CS, at the achievement of which the division is oriented, and the achievement of which may be examined as the positive result of operation.

Table 1

Quantitative Analysis of the Revealed Problem Areas

Components	Code	Finance (FI)	Accounting of Fixed Assets (FI-AA)	Controlling (CO)	Sales (SD)	Management of Material Flows (MM)	Management of Projects (PS)	Quality Management (QM)
The function is absent	FUN_1	1	0	0	0	2	0	1
The function is doubled	FUN_2	67	44	0	30	2	0	0
The function is surplus	FUN_3	1	0	0	27	4	2	0
The function is methodically incorrect	FUN_4	0	1	0	26	0	0	1
The methods are absent	FUN_5	1	2	0	6	0	2	0
ES (Enterprise Standards) require changing	ORG_1	0	0	0	8	3	1	0
High working capacity of the conducted operation	ORG_2	36	9	6	22	13	5	3
Performs the uncharacteristic operation	ORG_3	0	0	0	3	6	0	0
Needs changes in documents - circulation	ORG_4	4	8	1	16	4	0	0
Non-Optimality of the organizational structure	ORG_5	0	4	0	7	0	0	0
The automation is absent	INF_1	61	57	11	60	66	14	19
The information does not come in time	INF_2	3	30	0	13	56	0	0
The information is apocryphal	INF_3	0	0	0	6	7	1	4
Does not contain any information in the necessary amount	INF_4	0	9	2	17	31	1	0
Not integrated with other systems	INF_5	0	37	7	7	34	9	0

Source: (Bolkvadze, 2005:250)

During the project introduction it's necessary to build the united accounting policy in the field of managerial accounting. For this it's necessary:

- to elaborate the united rules and coding principles of the expenditures appearance's places and the profit appearance's places;
- to elaborate the united nomenclature of articles on the accounting of expenditures and incomes of the operational, investment and financial activity;
- to elaborate the internal principles on the accounting of incomes, expenditures, the prime cost's calculation of the finished production and the construction of the price policy, taking into account the requirements of the enterprise management's integrated system;
- to elaborate the united nomenclature of the budget articles, and also the construction principles of the budget structural plan.

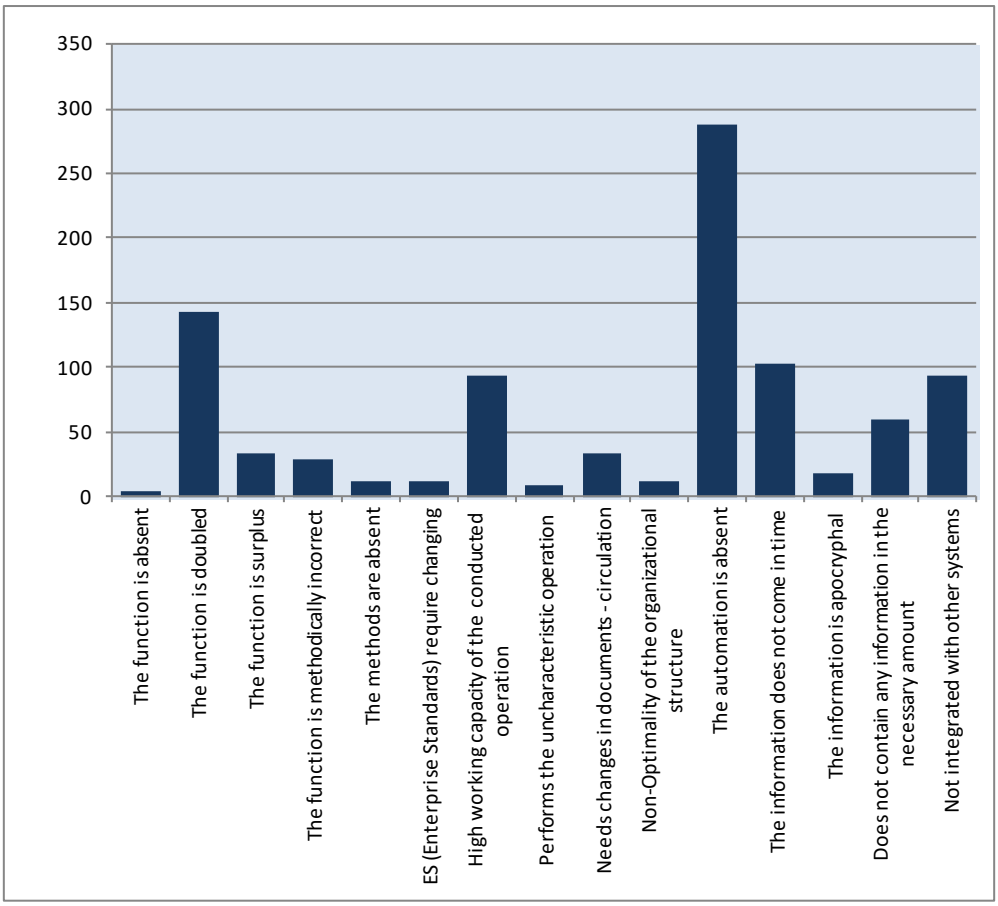

Fig. 2. The Final Division of Problem Areas

Source: (Bolkvadze, 2005:251)

In order to construct the united accounting policy in the financial accounting's sphere, it is necessary:

- to elaborate the schemes and the principles on the financial documents-circulation, taking into account the requirements of the enterprise management;
- to create the united plan of accounts, that will unite the synthetic, analytic and managerial accounting, according to the requirements of the integrated system;
- to elaborate the united classification arrangement for the accounting of the non-circulating assets, that will meet the requirements of accounting, tax accounting and GAAP;
- to prepare the united nomenclature reference book for the accounting of material reserves;
- to create the united classification arrangement of debtors and creditors.

Let's also examine the necessary organizational changes. The main problem in the part of the processes' organization is the high working capacity of the conducted operations. It is directly connected with the low level of automation.

The second problem is the non-optimality of the organizational structure. It's necessary to indicate the great quantity of documents, that:

- do not have any established forms;
- double each other;
- contradict to the enterprise standards (ES);
- double the information, that may be taken from the existing information systems.

Taking into consideration the fact, that not more than 50 % of needs in the reports (the expert estimation) may be covered by the standard reports of SAP ERP system, and taking into account the average working capacity of the report's elaboration within 3 days, the program experts will need more than 900 days for their work. It's necessary to take into account that the standard reports need to be reworked out too. Therefore it's necessary to urgently appoint the responsible workers in the divisions, to establish the terms and maximal amounts of the necessary reports, according to their directions. The approach, according to the divisions, won't give any effect in the presented work, because the information exchange between the divisions is complicated.

The last group of necessary changes - the information changes.

The main problems of the existing information systems are presented in Fig. 3:

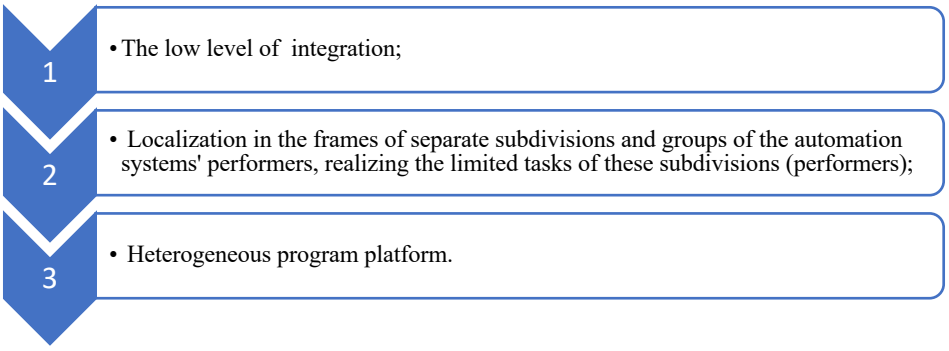

Fig. 3. Main Problems of the Existing Information Systems.

The introduction of ERP-system will permit to construct the effective accounting-analytical system of the company, namely:

- to create the united organizational structure of the enterprise in the field of the material and technical supply and the warehouse economy, integrated with the production, sales, financial accounting and accounting;
- to process, to control and to confirm the orders for the materials purchase from the subdivisions, taking into account the limits of financing; to form the orders for the materials, according to the responsible performers of the administration on supply;
- to form the statements of need in the purchasing materials for the production, reconstruction and development, technical service and repair of the equipment, capital building, according to the approved titles;
- to conduct the analysis and the forecast for the materials deficit on the basis of data on the warehouse remainders, purchase and operative production needs (in orders);
- to keep the files (card indexes) of the suppliers and the materials, being supplied by them, conditions of delivery and payment, prices, other properties;

- the realization of the purchasing process with the help of the purchase documents and the centralized conducting of the main data of purchases, agreements, orders for delivery with the admission of the corresponding experts to these data;

- the control of the contracts fulfillment and the accounts payment; the analysis of liabilities before the suppliers, the accounting of materials incomes;

- the connection guarantee of the purchase documents with the documents of CMV movement;

- the operative keeping and reflection of materials in the movement system of the whole enterprise;

- the conducting of the warehouse accounting, receiving of the circulation-balance statements and other documents, concerning the material reserves, according to the established forms;

- the accounting's realization of the commodity-material values (CMV) by the consignments at the enterprise warehouses and the possibility to keep CMV in the separate consignments;

- to perform the suppliers' attestation on the statistics analysis of their materials' delivery;

- the inventory taking.

The modern OAMS of the company foresees the integration of the operational, tactical and strategic levels of management into the united continuous process. To support this process, it's necessary to create the information subsystem at the enterprises on the basis of the backward connection. Such subsystem helps to reveal the causative-resulting connections between the elements of the strategic management and makes the results of the enterprise's activity admissible for the definite workers of management. The structuration of management may be realized not only with the selection of the separate business-processes (subsystems of management), but in the slit of the strategic and operative management too.

The thorough preparation and the comprehensive grounding of managerial decisions receive a special significance. During decision-taking, it's important to take into account the opinion of those people, who are to realize that decision, and also of those ones, for whom that decision is taken. The collective approach to the choice of the optimal alternative permits to reduce the possible number of mistakes, to estimate the available opportunities much more completely. During the elaboration of decisions, it's necessary to use the modern technical means completely, i.e. the information resources, providing the revealing of the decision's optimal variant, firstly, by using forecasting and modeling.

Conclusions and suggestions

The realization of the modern information technologies in the process of the managerial decision-taking may essentially increase the process efficiency of the managerial decisions' approval. ERP-projects, being realized, reorganize the business-process essentially, reduce the transactional expenditures, involve the intellectual products into circulation, increase the transparency of business and, correspondingly, increase its investment attractiveness and capitalization. On conditions of the information economics' realization, the set task is not only to select and automate the labor-capacious operations, being regularly repeated over the great masses of data, but to receive the principally new information, necessary for the approval of the effective managerial decisions.

The strategy of the company's behavior in the market is defined by the purposes, being

set, and the tasks. As the schemes of interactions between the different functional subdivisions are not always transparent, the management of the enterprise purposes' general totality is a very difficult task. The most difficulty is provoked by the interaction's coordination between such operative elements as the behavior strategy in the market, sales, distribution and production. To eliminate the contradictions, the complex of the corresponding measures, - which are always effective and inclined to mistakes, according to the peculiarities of the organizational policy, territorial control, existing programs of promotion, etc. - is being elaborated. As a result, the managerial decisions are taken every day at the operative and tactical levels, which are not always coordinated with the strategic purposes and tasks of the enterprise and do not guarantee any positive financial result.

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