

## **COST MANAGEMENT WITH APPLICATION OF ERP-SYSTEM TOOLS**

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**Problem setting.** Nowadays cost management is a recognized tool for controlling and reducing the production costs of an enterprise. The algorithm formation and the cost calculation of purchased raw materials, the cost of final products in the context of various cost elements are labour-intensive processes, and for the implementation of operational control of the cost, as a rule, the appropriate tools of transactional information systems are used. Solutions for determination of cost-based ERP-systems provide an effective instrument of control of all cost items, including traditionally «problematic» elements, such as inclusion of the direct costs of production resources, allocation of indirect general production costs etc.

The production cost is a synthetic, general indicator characterizing all the aspects of enterprises and reflecting the efficiency of their work.

The production cost includes the following costs on:

- production preparation and development of new products, starting operations;
- market research;
- aspects, directly related to the manufacturing of products, due to the technology and organization of production, including management costs;
- improvement of technology and organization of production, as well as improvement of the quality of manufactured products;
- the sale of products (packaging, transportation, advertising, storage, etc.);
- recruitment and training;
- other cash expenses of the enterprise associated with the production and sale of products.

When calculating the cost of production some problems can appear. These problems can be related to the fact that legal requirements for cost formation in tax records, Ukrainian accounting, as well as the requirements for the formation of the cost for management purposes vary considerably.

**Analysis of recent research.** The ability to effectively address the problem of calculating the production costs can be provided by the ERP-system, which, unlike the specialized accounting applications in addition to the financial information on the actual costs contain data on the actual use of all kinds of resources in the production process. The production and logistics modules of the ERP-system display information for all production orders: how much material has been used in the production of a particular product type, what equipment was involved and to what extent, what part of work is being in progress and how much

material this part has consumed. Thus, it is possible to automatically «link» the cost of a particular resource, and information about the use of this resource, as well as to simplify the solution of a number of tasks on the cost calculation. These tasks are:

- parallel formation of the cost in accordance with different types of accounting (RAS, tax and management accounting);
- determination of different cost composition for different cost calculation options;
- automated calculation of direct costs of production resources in cost determination and others.

**The purpose of this work** is to study the cost calculation algorithm in the ERP-system, which will closely monitor the cost of the enterprise and to make decisions for its reduction and increased profitability.

**Basic research.** Enterprise resource planning (ERP) is a category of business-management software, typically a suite of integrated applications, that an organization can use to collect, store, manage and interpret data from many business activities, including:

- product planning, cost;
- manufacturing or service delivery;
- marketing and sales;
- inventory management;
- shipping and payment.

ERP provides an integrated view of core business processes, often in real-time, using common databases maintained by a database management system. ERP systems track business resources – cash, raw materials, production capacity – and the status of business commitments: orders, purchase orders, and payrolls. The applications that make up the system share data across various departments (manufacturing, purchasing, sales, accounting, etc.) that provide the data.[1] ERP facilitates information flow between all business functions, and manages connections to outside stakeholders.[2]

It should be mentioned, that enterprise system software is a multibillion-dollar industry that produces components that support a variety of business functions. IT-investments have become the largest category of capital expenditure in United States-based businesses over the past decade. We can notice that earlier large enterprises used ERP systems, but nowadays smaller enterprises increasingly use ERP systems. [3]

The ERP system is considered a vital organizational tool because it integrates varied organizational systems and facilitates error-free transactions and production. However, there are many differences between ERP system development and traditional system development. [4] ERP systems can be run on different computer devices and network configurations, typically using a database as an information repository. [5]

An ERP-system toolkit allows to generate the cost from the point of view of «cost elements», that is, direct material costs, direct costs of production resources

(equipment and personnel), the costs associated with processing outside from the enterprise, indirect overhead costs (indirect general administrative costs) are calculated as a part of the cost of a particular type of finished products or semi-finished products. The diagram of the ERP-system is presented in Figure 1.



Figure 1 – Diagram of typical ERP modules

Finalization of the standard functionality of the ERP-system allows us to collect the costs and calculate the direct costs of production resources automatically. The calculation can be performed by a so-called boiler method (i.e., all the costs are collected and allocated to the cost of all the products) or individually for each resource, which is a treatment group. Treatment groups are the groups of technological equipment units, considered as a single processing resource performing the identical processing steps and having the same technical characteristics, or a group of employees of the same qualification, performing the same production functions.

Costs associated with the treatment group are included in the cost only of the products in the manufacture of which this group has participated (calculated on the basis of routings).

**Conclusions.** Application of the ERP-system opportunities for the formation of the production cost allows the company to track the costs in detail and make informed decisions for their reduction and increased profitability.

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**Анотація.** Стаття присвячена дослідженню обліку собівартості продукції в ERP-системах. Прикладне рішення дозволяє відобразити матеріальні, трудові і фінансові витрати. Оцінка витрат в грошовому вираженні забезпечує порівнянне відображення споживання різних ресурсів за напрямками діяльності.

**Ключові слова:** собівартість продукції, бухгалтерський облік, ERP-система, витрати.

**Аннотация.** Статья посвящена исследованию учёта себестоимости продукции в ERP-системах. Прикладное решение позволяет отражать материальные, трудовые и финансовые затраты. Оценка расходов в денежном выражении обеспечивает соизмеримое отражение потребления различных ресурсов по направлениям деятельности.

**Ключевые слова:** себестоимость продукции, бухгалтерский учёт, ERP-система, затраты.

**Summary.** The article investigates the problem of cost management in the ERP-systems. The developed application allows enterprises to reflect material, labour and financial costs. Assessment of costs in terms of money provides a measurable reflection of consumption of various resources by different activities.

**Keywords:** production cost, accounting, ERP-system, costs.