

UDC 629.735

**THE ANALYSIS OF CAPABILITIES AND MARKET OF ERP SYSTEMS****YULIYA BEKISH, ELENA SETKO****Yanka Kupala State University of Grodno, Belarus**

*This article describes the functions of ERP systems that enable enterprises to automate their work. Also, here have been revealed the advantages and disadvantages of these systems. By analysing the market of ERP systems have been identified leading vendors ERP systems.*

**Introduction.** Today, the ERP systems (Enterprise Resource Planning) are becoming more and more popular. Thanks to them, any enterprise can automate and optimize its work. The systems of ERP class are a full-featured suite of integrated applications that allow creating a single environment for automation of planning, accounting, control, analysis and management of business processes in the financial, inventory, production and logistics flows, accounting, personnel management, regulation of relations with contractors, reporting, etc. [1]. Thus, data exchange between departments is much faster and easier.

**Task formulation.** To research the possibility of ERP systems, to identify the advantages and disadvantages of ERP systems, to analyze the market of ERP systems.

The introduction of ERP-systems in any enterprise can cause many changes, so this process takes a lot of time (may take 2–3 years). Let's consider the possibilities of ERP systems.

Firstly, these systems make possible to plan in details the needs of the enterprise (for example materials, components, etc.), in what terms and in what volumes delivery should be made for completion of the plan on production.

Secondly, these systems help determine the number of goods, as well as identify surplus or deficit, that will help reduce the costs of storage.

Thirdly, ERP systems reflect any change in demand, so make it possible to adjust the production process.

Fourthly, the introduction of ERP systems optimizes business processes in the company by reducing material and time costs.

Fifthly, thanks to ERP client can control the delivery of products and the quality of customer service.

So, in ERP systems, there are the following main functional blocks [2]:

- Planning of sales and production. The result of the block's activity is the development of a plan by production of major products.

- Demand management. This unit is designed to forecast future demand for the products, determine the volume of orders that can be offered to the client at any given time, determining the demand of distributors, demand within the enterprise, and others.

- Enlargement planning of capacity. It is used for plan specification of the production and determine their feasibility.

- The main production plan (schedule of output goods). Goods are determined in the end production units (articles) with production time and quantity.

- Requirements planning materials. Are determined the types of material resources (precast units, prefabricated units of finished products, raw material, semi-finished products, etc.) and the specific terms of delivery for the implementation of the plan.

- Product specifications. The composition of the final product is determined, material resources necessary for its production, and others. In fact, the specification is the link between the basic production plan and plan of requirement materials.

- Planning of requirement capacities. At this stage of planning, capacities are determined more detailed than at previous levels.

- Routing / work centers. With the help of this block, product capacity and routes are concretized in such way, according to which products are produced.

- Checking and correcting the shop plans by capacity.

- Procurement management, inventory, sales.

- Financial management (general ledger, accounts with debtor and creditors, asset accounting, cash management, financial planning and other activities.).

- Cost management (accounting for all expenses of the enterprise, and calculating the cost price of the finished product or service).

- Project management.

Certainly, ERP systems make life easier for any company. Like any innovation, ERP systems have their advantages and disadvantages. Let's start with the advantages:

## Economics

- **Control.** As mentioned earlier, ERP-systems allow control over all departments of the processes, thereby simplifying the work of many departments.
- **Sync.** Each production is a certain sequence of operations. Any process involves exchange of data. ERP-system synchronizes all data into a single database so that the information on a particular product is available at any stage of production.
- **Standardizing reporting.** ERP reporting tools unify all kinds of reports and statistical data, that are needed for management. These reports can be created for all processes, business units or functions in real time.
- **Unification of information systems.** Because of implementation ERP-system in all parts of the organization, there is no need to maintain disparate information management systems. All functions of the individual systems can be integrated into the ERP-system.
- **Enhanced management functions.** Majority of ERP systems make possible to use corporate knowledge management modules. This enables organizations to significantly expand the management functions through the creation of a corporate knowledge base.
- **Integration with suppliers / customers.** Many modern ERP systems allow suppliers / customers to perform the part of functions of the organization (the formation and order tracking, inventory control and replenishment, and so on).
- **Adaptation to business needs.** There are different modules in ERP-system that can be operated in conjunction with the basic functions, and separate from them. The composition of the tasks in each module is customized for the needs of the organization.
- **Data Protection.** For each user group in the ERP-system can be created its own security policies that provides a more reliable data protection. The operation of each user can be controlled. All the operations and actions performed by the user can be controlled by ERP system.
- **Improved communication.** ERP-system provide "transparency" of the results of each business division. This makes it possible to establish horizontal links between departments and improve their interaction.
- **Scaling.** For large companies with distributed structure and geographically remote locations, ERP systems can scale solutions. This allows remoted offices to have a single management system.

ERP-system, like any other system, cannot consist solely of positive characteristics. There are several drawbacks and limitations.

- **Cost.** Any of ERP system is expensive. Firstly, the acquisition of the license agreement, which must be purchased yearly. Secondly, these systems require a constant technical update that is performed by the service provider and it is definitely expensive process. Thirdly, the introduction of work to consist of several stages (planning, setup, testing, etc.).
- **The duration of the introduction.** Implementation of the process is not quick and consists of several stages and each stage requires a certain time costs
- **Development difficulties.** Typically, ERP-systems have complicated interfaces users. For the successful implementation and operation of ERP-system users need long-term training.
- **Data transfer.** When implementing, ERP system replaces the existing disparate information management systems. Data stored in these systems can not always be easily integrated into the ERP database system. Data transfer may be difficult or impossible.
- **Dependence on the supplier.** The acquisition and implementation of ERP-system is a costly process. By selecting a single supplier, the company is forced to use its services in order to maintain work ability system and its updates.

According to the forecast Allied Market Research (AMR) global ERP-systems market in 2020 will reach \$ 41.69 billion, with the annual growth rate for 2014–2020 will be about 7.2% [3].

According to the "REPORT ON ERP SYSTEMS AND ENTERPRISE SOFTWARE" [4] on the ERP-systems market leading vendors are SAP, Oracle, Microsoft.

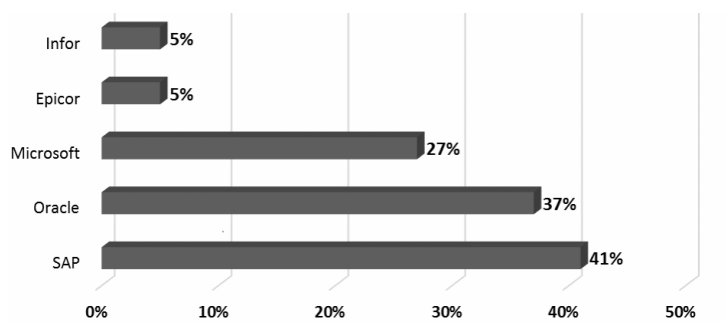


Fig 1. Frequently Short-listed vendors

As figure 1 shows, the leading vendor of ERP-systems is SAP. According to the Panorama's data [4], then the following companies are located:

- Sage (3,5%);
- NetSuite (2,9%);
- IFS (1,5%);
- IQMS (1,2%);
- Syspro (1,1%).

The first place in terms of return on investment in the ERP ranked SAP. By the speed of the implementation leading Oracle products, and by the cost of implementing the palm captured in NetSuite, which cost customers an average of 2.8% of revenue. The Panorama study also noted the advantages of Infor systems, such as opportunities to use mobile version of remote offices and employees, reliable and intuitive tool for business data analysis and optimal values of time and cost of implementation and ROI [5].

**Conclusion.** Enterprise Resource Planning System allows not only intelligently allocate resources, but also to automate the operation of the enterprise. The larger the company, the more difficult to track one process. Therefore, many large enterprises are implementing a set of integrated applications that enable to create an integrated information environment for automation of planning, accounting, control and analysis of all key business operations. Sometimes projects to implement ERP-systems can provide only 50% of the desired result. However, the opportunities that give any software related to the ERP-system, you can create a well-functioning system, with constant synchronization, standardization of reporting and data protection. But what kind of software company should choose depends on the management of the company and the situation in the market of ERP-systems. In 2016 the leading vendor is SAP. However, the introduction of Oracle products comes forward speed.

#### REFERENCES

1. Планирование и управление ресурсами предприятий (ERP) [Электронный ресурс]. – Режим доступа: <http://iba.by/services/erp/>. – Дата доступа: 26.01.2017.
2. Система планирования ресурсов предприятия [Электронный ресурс]. – Режим доступа: <http://www.grandars.ru/college/ekonomika-firmy/erp-sistema.html>. – Дата доступа: 26.01.2017.
3. Allied Market Research (AMR) [Electronic resource]. – Mode of access: <https://www.alliedmarketresearch.com/ERP-market>. – Date of access: 26.01.2017.
4. 2016 REPORT ON ERP SYSTEMS AND ENTERPRISE SOFTWARE [Electronic resource]. – Mode of access: <http://go.panorama-consulting.com/rs/panoramaconsulting/images/2016-ERP-Report.pdf>. – Date of access: 27.01.2017.
5. ERP-системы (мировой рынок) [Электронный ресурс]. – Режим доступа: [http://www.tadviser.ru/index.php/%D0%A1%D1%82%D0%B0%D1%82%D1%8C%D1%8F:ERP-%D1%81%D0%B8%D1%81%D1%82%D0%B5%D0%BC%D1%8B\\_\(%D0%BC%D0%B8%D1%80%D0%BE%D0%B2%D0%BE%D0%B9\\_%D1%80%D1%8B%D0%BD%D0%BE%D0%BA\)](http://www.tadviser.ru/index.php/%D0%A1%D1%82%D0%B0%D1%82%D1%8C%D1%8F:ERP-%D1%81%D0%B8%D1%81%D1%82%D0%B5%D0%BC%D1%8B_(%D0%BC%D0%B8%D1%80%D0%BE%D0%B2%D0%BE%D0%B9_%D1%80%D1%8B%D0%BD%D0%BE%D0%BA)). – Дата доступа: 26.01.2017.