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THE ROLE OF ERP SYSTEMS IN CHEMISTRY INDUSTRY

Аннотация*: статья описывает возможности корпоративных информационных систем (CIS), потенциальные сложности в их установке и ее основные этапы. В работе также рассмотрен рынок информационных систем, обозначены особенности их использования в химической промышленности.*

Ключевые слова*: химия, промышленность, ERP-системы, техническая поддержка, CIS.*

Abstract*: this article describes possibilities of CIS, difficulties in system installation, main installation steps, rialto of CIS, features of using these systems in chemistry industry.*

Keywords*: chemistry industry, ERP-system, IT-support, CIS.*

Nowadays, chemistry factories should work in a highly competitive environment. The most characteristic features of working in this field are brunching processes, constant changes in production technologies and standards. To provide high level of competition factories should install different modifications on corporate information systems (CIS) which become the first step to optimization of all processes.

Corporate information systems are scalable systems designed for the integrated automation of all types of business activities requiring a single management. They can reflect the state of all resources and provide managers with information for its further use in optimization or planning. Nowadays, there are a lot of kinds of Enterprise Resource Planning (ERP) systems which can make a single information field for efficient

management of all company's resources related to production, sales and order accounting. Chemistry industry has features which cold «three whales». This «whales» can provide system's functioning: the right supply, sales, maintenance of production facilities. EPR systems made it possible to solve this issues not only for individual enterprises, but for the whole industry too.

To be more precise, there are a lot of classic management tasks in this field of industry. The first and the most important task is controlling of quality as of income raw materials as of the whole producing cycle. There are a lot of GOSTs, regulations, wide variety of characteristics of certain substances, the difference in the quality of the same components from different suppliers, the presence of aggressive environment which make it really hard to control the process end-to-end. To solve this problem, factories need special information suppliers. All information about quality should be structured, consolidated and easily to access. Only using this way managers will be able to make decisions quickly.

The other problem is providing transparency of the entire production cycle for both the production manager and the supplier, customer, auditors and other persons interested in the production. The process of transition from work «to the warehouse» to work «to order» requires a clear analysis of production capacities, planning the supply of raw materials and other resources, as well as taking into account the limited production, warehouse, supplies, etc. Without ERP systems it is extremely difficult to carry out production on order.

The other task which should be solved by ERP systems is controlling the state of equipment and timely maintenance. The chemical industry is complicated with the fact that it uses aggressive medium at many stages of production. They determine the wear of equipment. Moreover, they are critical for business. In other areas of industry equipment maintenance is most often considered as an auxiliary process and most of it is outsourced. Russian chemistry factories in most situations control the state of equipment themselves. In this area IT-support can provide advantaged in scheduling real capacities, integrated production and repair planning.

Nowadays, there are a lot of different kinds of ERP systems which can adapt under different industry fields. The most demanded are full-featured ERP systems of the Oracle E-Business Suite or SAP ERP class, which provide a solution to the whole range of tasks related to chemical enterprises. Leading companies, such as Amtel-Fredestein, Sibur-Russian Tires, Michelin and many other companies of international importance choose this set of systems.

The capabilities of ERP systems allow to support all areas of chemical production, to take into account the many nuances of this industry. For example, the presence of cycles, the dependence of the volume of production on the parameters of the process and the quality of the raw materials. Different batches of products have different quantitative, and sometimes qualitative characteristics, which requires immediate adjustment of the formulas. The ERP system enables automated support for these procedures. Moreover, this system allows you to allocate resources for obtaining certain types of products, realizing the accounting of losses and incidentally received products along with the main ones. It is worth noting that in the conditions of modern production, enterprises are increasingly starting to use a mixed production system, combining classical (continuous) production and discrete in the technological process. Full-featured ERP systems allow for end-to-end planning and management of such activities in a single system.

The capabilities of modern ERP systems are very high, but Russian companies install them in a small number of modules, which significantly reduces the effect of implementing ERP systems. The implementation of this management system of the company meets a number of difficulties associated with the need for comprehensive implementation, which directly affects the costs. Moreover, the initial disorder of business processes, which leads to the impossibility of fulfilling its most elementary ERP system functions.

The process of introducing ERP systems into production is extremely difficult, it includes a number of stages, without which it will be impossible to achieve the full functioning of the system. Business diagnostics is the first step in the installation of the system. Specialists often try to adapt the systems to the individual characteristics of the

company, but in most cases this specificity is associated with disordered business processes, inefficient organization, obsolete documentation, suboptimal distribution of roles. Without preliminary business reengineering, you should not rely on high results from the implementation of an ERP system.

Another mistake towards the establishment of a new system is the desire to automate everything at once. If a company has several chemical plants, it is recommended to first introduce the system in one plant, automating all its business processes or comprehensively in all plants, but from the point of view of processes, that is, introduce one functionality, for example, production management but immediately on all factories. The fundamental principle in the construction of the system is the «vertical» implementation of the system, when, solving the problems of the upper levels, we first automate the lower ones to obtain reliable information. This band of «reliable data below» (which managers use) – generalized performance indicators at the top (which managers analyze) makes it possible to really increase the efficiency of the company. Thus, the manager is faced with the task of identifying critical areas of the business that need to be automated first. It is worth avoiding «partial automation», which is more costly and generates a large number of risks associated with the inability to adapt to changes and new requirements. For this reason it is recommended to comprehensively automate all business parts with ERP systems to provide optimally cost conditionals and maximum effect.

To sum up, the IT support in the chemical industry provided by the use of ERP systems is an effective lever that contributes to business development. Having established the order in business in advance, the system will be easier to implement, it will be possible to analyze the effectiveness of its use, the amount of risks will be reduced, and the number of improvements. With proper preparation, the implementation of an ERP system will help to correctly focus the project and achieve the planned results.

References

1. Хмелев И. Отраслевая специфика и задачи управления: когда без ERP-системы не обойтись? [Электронный ресурс] / И. Хмелев, А. Ложкин. – Режим

доступа: http://www.topsbi.ru/about-the-company/press-centr/publikacii/avtomatizaciya_upravleniya_promyshlennyh_predpriyatiy_mozhno_li_poluchit_vse_i_srazu/

2. ERP-системы внедряются на предприятиях химической отрасли [Электронный ресурс]. – Режим доступа: http://www.interface.ru/home.asp?artId=5118

3. ОАО «Амтел-Вредештайн» [Электронный ресурс]. – Режим доступа: http://amtelvredestein.ru/

4. Холдинг «СИБУР – Русские шины» подвел предварительные итоги деятельности в 2010 году [Электронный ресурс]. – Режим доступа: https://www.sibur.ru/press-center/news/kholding_sibur_russkie_shiny_podvel_predvaritelnye_itogi_deyatelnosti_v_2010_godu/

5. Официальный сайт Мишлен в России и странах СНГ [Электронный ресурс]. – Режим доступа: https://www.michelin.ru/