

implementation of information technology has seen great advancement and changes recently. The IT development has gone through several global stages determined by the technical progress, the emergence of new technological tools and methods of information retrieval and data processing. The latest phase can be characterized by the changes from the development of technical means to the creation of an IT business strategy.

The following tendencies of current changes and development in IT sphere are considered to be the most significant ones:

1. The use of technologies that provide interactive access of mass users to the information resources on the basis of public and private communication and data transmission systems of either general purpose or specialized ones (national, regional and combined).

2. The increase of functional capabilities of the information technology for parallel simultaneous processing of databases with a varied data structure, multi-object documents, including those that enable the implementation of technologies for creating and maintaining hypertext databases. Formation of local, multifunctional problem-oriented information systems for various purposes based on powerful personal computers and local computer networks.

3. The implementation of user interface intellectualization elements, expert and machine translation systems and their transition into information center.

Alongside with the current development of the modern world, new emerging information technology pop-up on the world market and its main goal is to cope with demanding challenges and to gain competitive advantage. The evolution of this sphere is constantly changing and reshaping all facets of our life. The influence of information technology on the future is evident. Even now some certain tendencies of information technology future development can be predicted and they are worth to be mentioned:

1. The information products and services are inevitably getting more complicated and the increase of their strategic importance is constantly growing up.

2. One of the leading role in technological assistance is given to the problem of the ability to interact by exchanging the information products in between a computer and a user. Also, this problem affects the compatibility of hardware and software.

3. The main task of computer world now is elimination of intermediate links as the ability to interact leads to an improvement in the process of exchanging information products, and therefore, in the relationships between business partner, suppliers and consumers, students and teachers.

4. The process of globalization is an integral part of future life and it leads to the appearance of new information technology tools providing the possibility to communicate regardless of the locations and distances.

Millions of people around the world are currently involved in productive work for the benefit of the future in the information technology industry. The main goals that they pursue are, of course, the creation and the arrangement of more comfortable living conditions for people all over the world.

**Conclusion.** Information technology has drastically changed our life. It is absolutely impossible to imagine modern world without it. Information technology continually provides so many things and comes in such a variety of shapes and sizes that we are moving to a new century facing an ever-increasing dependence upon technology. But at the same time information technology development allows us to improve our world and gives us the prospects and new opportunities to make our life better.

#### References

1. Importance of information technology in today world [Electronic resource]. — Mode of access : <https://www.digitalclassworld.com/blog/importance-of-information-technology> . — Date of access : 13.12.2021.
2. Importance of information technology in today world [Electronic resource]. — Mode of access : <https://www.rand.org/pubs/papers/P8014.html> . — Date of access : 13.12.2021.
3. Importance of information technology in today world [Electronic resource]. — Mode of access : <https://info.focustsi.com/it-services-boston/topic/managed-services/career-in-information-technology-future-prospects> . — Date of access : 13.12.2021.

UDC 65

**E. O. Mironova, A. S. Kashko**

*Educational institution "Belarusian National Technical University", Minsk, the Republic of Belarus*

## INFORMATION TECHNOLOGIES IN THE ENTERPRISE MANAGEMENT SYSTEM

**Introduction.** Every day, information technologies penetrate into all aspects of our life. Even 20 years ago, it was hard to imagine that almost everyone would have their own small computer in their pocket, the performance of which would be higher than stationary computers at that time. Of course, information technology could not pass by the industry, and today a large amount of software has been created to simplify and speed up work.

**Main part.** The use of information systems in industry and their improvement has a positive impact on all spheres of human life. The competent organization and application of information systems used in the enterprise management system plays an important role here.

MRP (Material Requirements Planning) system — planning the need for materials. This system was developed in the USA in the 1950s, but only 25 years later, when there was a rapid leap in the development of computing technology, it became famous and subsequently widespread. By the end of the 1980s, MRP was used by most firms in the US and the UK. To date, the use of a material demand planning system is not relevant due to the age of the system, but it is the basis for a large number of existing automation systems [1].

In the middle of the XX century, many manufacturers faced quite serious problems of late delivery of resources, which led to a decrease in production indicators and the accumulation of a large amount of materials in warehouses. The main task of MRP is to ensure that every element of production, every component part is in the right quantity at the right time. This is ensured by the formation of such a sequence of production operations that allows you to correlate the timely production of products with the planned release plan. This approach is also designed to ensure a minimum amount of inventory in the warehouse. In a simplified form, the initial information for the MRP system is represented by production schedules, a list of materials, the composition of the product, the state of stocks. Based on the input data, the MRP system performs the following basic operations [1]:

- according to the production schedule, the number of final products is determined for each planning time period;
- spare parts not included in the production schedule are added to the composition of the final products;
- for the production schedule and spare parts, the total need for material resources is determined in accordance with the list of materials and the composition of the product with distribution by planning time periods;
- the total material requirement is adjusted based on the stock status for each planning time period;
- the formation of orders for replenishment of stocks is carried out taking into account the necessary advance time.

The result of the MRP system is a schedule for the supply of material resources of production. To implement the supply schedule, the system creates a schedule of orders in relation to time periods. It is used to place orders to suppliers of materials and components or to plan self-manufacturing with the possibility of making adjustments in the production process. MRP class systems in terms of price/quality ratio are suitable for small enterprises where management functions are limited to accounting, inventory management in warehouses and personnel management.

The age of this system imposes certain disadvantages that it was impractical to solve within its framework. The most important disadvantage of MRP systems is the large amount of input data processing compared to the amount of information in general and the results. In an effort to switch to frequent, but small orders, within the framework of MRP systems, it is unlikely to be possible to find an optimal plan for the costs of order processing and transportation, since the system was originally developed for large enterprises with thousands of orders (large US machine-building plants).

Popular software for MRP systems once served as Microsoft Business Solutions-Navision, developed since the early 1980s. To date, the software package has grown into Microsoft Dynamics NAV, where the MRP module is a separate plug-in [2].

So, in 1954, the first machine with numerical control (CNC) was created by Bendix Corp. However, the first CNC machines were distinguished by their complexity, and could not be used in mass production. Entrepreneurs and investors were distrustful of the new technology, which is why the implementation was very slow.

The first Soviet CNC machines were the 1K62PU screw-cutting lathes and the 1541P rotary-turning machine. These machines appeared in the early 1960s. Subsequently, vertical milling machines were created, and in the future, Soviet-made CNC machines have already become the most widespread.

Today, CNC machines have reached unprecedented heights in accuracy, speed and quality. CNC machines allow to produce complex products, the creation of which previously required a lot of manual and highly skilled labor. Today, CNC machines have become much more affordable, which allows enterprises to produce products efficiently, quickly and not differing from each other without large unit costs, while reducing defective products at times.

But not only CNC machines have simplified life at enterprises. In 1995, sales of 1C software began, and today this program is one of the most popular in the CIS countries. This software made it possible to automate activities at the enterprise: products for automation of accounting and management accounting, economic and organizational activities of the enterprise.

This software operates in MS Windows and DOS environments. And since version 8.3, also in Linux and Mac OS environments. 1C programs are designed to solve specific accounting and management tasks and have their own functional and industry orientation. Each solution combines standard functions common to most systems, as well as industry-specific capabilities tailored to individual business objectives.

Any program of the 1C line can be adapted for a specific industry. For example, there is a “1C” for automating a car service, pharmacy, jewelry salon and other fields of activity [2].

But industrial robots have become one of the leaders in production. They are mainly used in mechanical engineering, chemical and petroleum industries. Thanks to them, the wage costs of workers are significantly reduced, which leads to a reduction in the cost of production, keeps the quality of products at a stable level and increases the flexibility of production. However, there are also disadvantages. The first disadvantage is the high cost of buying and installing equipment. The second disadvantage is the need for reconstruction of the premises, because not every room can be converted to install industrial robots, which can lead to high costs. The third disadvantage is the need for staff training, because when working with modern technology, it is necessary to train employees in the necessary skills.

In the last few years, it has become popular to introduce artificial intelligence into all areas of human life. So today artificial intelligence is in the smartphone, TV, "smart" things in the house. Artificial intelligence has not bypassed production. In recent years, a leap has been made from the use of semi-automatic robotic manipulators on flexible production lines to the control of autonomous vehicles that move between workshops. In the future, more and more advanced AI technologies may allow fully automating production processes and optimizing the work of not only individual enterprises, but also entire industries.

The advantages of using information technology in industry are obvious. Everything starts from reducing costs, increasing labor productivity and product quality to reducing its time to market.

Artificial intelligence and robots are becoming the most important technologies for industry. This trend indicates changes in the business models of enterprises: they strive to produce more and more creative products, increasing customer loyalty and preserving the principles of economy and energy efficiency.

Another notable trend is the integration of all participants in the value chain into a single system based on digital platforms. It is supported mainly by flexible distributed network production technologies [3].

**Conclusion.** More recently, products were made only by manual labor, and records were kept exclusively in special magazines. But progress does not stand still, which made it possible to create and implement new information technologies in industry, thanks to which the company increases the speed, uniformity and quality of products.

#### References

1. *Землянский, А. А.* Инф. технологии в экономике : учебник для вузов / А. А. Землянский. — М. : КолосС, 2004. — 336 с.
2. «1С Предприятие» [Электронный ресурс]. — Режим доступа : <https://www.1ab.ru/blog/detail/1s-chto-eto-za-programma-korotko-o-glavnom/>. — Дата доступа : 26.04.2022.
3. Информационные технологии в промышленности и экономике [Электронный ресурс]. — Режим доступа : [https://studme.org/59742/informatika/informatsionnye\\_tehnologii\\_promyshlennosti\\_ekonomike/](https://studme.org/59742/informatika/informatsionnye_tehnologii_promyshlennosti_ekonomike/). — Дата доступа : 25.04.2022.