

METHODS OF EVALUATION OF THE ECONOMIC EFFICIENCY OF THE USE OF INFORMATION TECHNOLOGIES IN THE FINANCIAL ACTIVITIES OF ENTERPRISES

Mammadli T.

Student at the University of Bamberg, Germany

Hagverdiyeva S.

Azerbaijan State Agricultural University.

AZ 2000, Ganja, Azerbaijan.

Aliyeva A.

Azerbaijan State Agricultural University.

AZ 2000, Ganja, Azerbaijan.

Babayeva Sh.

Azerbaijan State Agricultural University.

AZ 2000, Ganja, Azerbaijan.

Abdullayeva F.

Azerbaijan State Agricultural University.

AZ 2000, Ganja, Azerbaijan.

Verdiyeva L.

Azerbaijan State Agricultural University.

AZ 2000, Ganja, Azerbaijan.

<https://doi.org/10.5281/zenodo.13863422>

Abstract

The article is devoted to the analysis of IT efficiency assessment methods. Economic efficiency of IT application is the ratio of profit and total costs of the enterprise. The purpose of the article is to study the methods of economic efficiency of IT application. To achieve the set goal, it is necessary to solve the following issues: to give the concept of economic efficiency of IT, to learn the main methods of evaluating the economic efficiency of IT. Taking into account the scientific innovation-financial indicators, recommendations on increasing the effectiveness of the activity were developed. MRP, MRPII and ERP are focused on the internal organization of the enterprise, and CSRP systems include a full range of business technologies from future product design, taking into account customer requirements for warranty, service and maintenance. The main stages of evaluating the effectiveness of IT application in the enterprise can be summarized in 3 stages: preparation, analysis and evaluation of the choice of technology; application – analysis.

Keywords: economy; information technologies; assessment; efficiency

Introduction.

The urgency of the problem. The role of Information Technologies (IT) in modern times is significantly greater. These technologies are developing day by day. It can be said that IT is used in all fields [1]

A generally accepted approach to determining the economic efficiency of an IT application is the ratio of the enterprise's profit and total costs. However, the effectiveness of the evaluation based on only one indicator reduces the scope and creates a limited economic picture. This problem is that the effect of information technology on the profitability of an enterprise is mediated and it is aimed at improving business processes of the enterprise, increasing efficiency, obtaining analytical data, making management decisions, etc. It is difficult to measure the actual profitability of IT from the overall profit of the enterprise. Therefore, the value of the performance indicator will not be able to provide accurate information about the rationality of a certain information technology. This is related to the problems of determining the results of automation, since it is not enough to calculate the efficiency as the difference between the resources spent and the savings achieved.

The purpose of the article is to study the methods of economic efficiency of IT application.

In order to achieve the set goal, it is impossible to solve the following issues: to give an understanding of

the economic efficiency of IT, to learn the main methods of evaluating the economic efficiency of IT.

Taking into account the scientific innovation-financial indicators, recommendations on increasing the effectiveness of the activity were developed.

Economic efficiency of IT implementation.

The countries of the world are becoming globalized day by day, new scientific achievements are achieved, new information technology products are emerging, and the demands placed on the world economy are subject to change. If in the last century the world economy was mostly based on oil, gas, and gold, now it is an undeniable fact that it is formed on IT. It is true that even today oil import and export occupies a very important place in the world economy. However, experience shows that the economies of those countries develop more, which, along with natural resources, produce science-intensive products. In this regard, the role of IT in the world economy is undeniable. One of the main directions in increasing the role of IT in economic development is the creation of corporate information systems and the expansion of their use. Achieving higher results in this direction requires expanding the application of information systems in the country [2].

In order to evaluate the effectiveness of investments in information technologies and their role in the

development of information systems, which are of special importance in economic development, there are currently various approaches. One of these approaches is the methods of evaluating the country, region or individual enterprise according to individual indicators and aspects, taking into account the current situation. Here, the calculation and comparative evaluation of financial ratios is usually carried out with the application of information technologies. However, it should be noted that such an approach does not allow a full evaluation of the results of the application of information technologies. In the second group approach, the use of expert methods is preferred [3].

Using this method, it is possible to determine in advance the income that will be obtained by the application of information technologies. It is more appropriate to evaluate the effectiveness of the application of IT to the economy not only at the initial stage and at a certain stage of the process, but at every stage in general. It is this form of application of the methods that allows the correct use of rapidly changing, modernizing IT.

Determining economic efficiency is a more complex issue and must be evaluated in terms of strategic goals and the development of the entire enterprise. The information technology market is developing very dynamically in response to the needs of the business environment, so there is a new CSRP (Customer Synchronized Resource Planning), total organizational resource planning, integration of customer-oriented strategy and synchronized interactions with customers. These information technologies are next-generation technologies, if MRP, MRPII and ERP focus on the internal organization of the enterprise, then CSRP systems incorporate complete business technologies from future product design, taking into account the customer's warranty, service and maintenance requirements. According to the information of the world consulting companies, for the majority of enterprises where such systems are applied, the stock reserves are reduced by an average of 11%, operating costs are reduced by 12%, administrative costs are reduced by 10%, delivery time is improved by 13%, production compliance is reduced by 12%; production cycle decreased by 14%. However, 27% of the heads of enterprises participating in the survey said that they did not return the investments spent on the application of information technologies, and 28% said that they could not evaluate the effect received [4].

Only 35% of companies implement integrated information systems without exceeding the budget, and only one third of such projects are completed according to the planning schedule. As a result, many enterprises do not get the expected benefits: only 8% of them will receive 80-100% of the planned functions. This modern stage of enterprise management automation is also characterized by an increase in indirect effects: standardization of processes, integration of various information products, flexibility and promptness of responding to the needs of consumers, which adds difficulties to the assessment process [4].

The efficiency of using information systems in the economic management of the enterprise directly depends on two main factors: the effect on improving the

management efficiency of the enterprise and the reduction of the cost of the enterprise, which increases the profitability of the enterprise. Enterprise information infrastructure management processes, and especially IT processes (information technologies), are related to the purchase of technologies, project development, preparatory work, development of new management technologies, and substantial investment of resources for personnel training [5].

The main stages of evaluation of IT implementation and use efficiency in the enterprise can be summarized in 3 stages: preparation, analysis and evaluation of technology selection; implementation - analysis and evaluation of direct costs and justification of expediency; application - assessment of the economic efficiency of the application and calculation of intellectual depreciation and the gradual modernization of information technologies in the future.

Economic efficiency is calculated at all stages of IS design: 1) when investigating for the creation of an enterprise, there is a preliminary calculation of the expected economic efficiency; 2) a detailed calculation of the expected economic efficiency at the stage of technological design has been completed; 3) application to industrial activity, determination of actual economic efficiency. However, predictive calculations in the first stages of work preparation and design [5].

The calculation of economic efficiency after the introduction or modernization of the information system or individual information technologies is often considered in the framework of two methodological directions in the national economy, the first is based on the annual economic effect, and the second is based on the calculations of the integral economic effect. During the calculation of the annual economic effect, the annual sales volume, production costs, profit from sales during the reporting period (after the change in the information system of the enterprise) are compared with similar indicators during the base period (before the change in the enterprise).

If the economic effect is calculated, a comparison of the indexes of the cost and income side of the enterprise's activity is carried out during the entire reporting period from the beginning of the changes in the IS of the enterprise. However, both methods of calculating economic efficiency do not allow an accurate assessment of the enterprise's contribution to the overall economic development. This is due to many factors that can affect the comparative indices. For example, the annual sales volume may change due to the introduction of new technological developments, changes in demand or advertising policy.

Therefore, it is necessary to determine the economic effect of using IT based on all factors: economic, organizational, technical and social factors. Financial, qualitative and predictive analysis methods are used for this. Financial analysis is a commonly accepted tool for justifying any business project. The methods in this analysis use traditional approaches to the calculation of economic efficiency, taking into account the characteristics. The superiority of financial methods in the main principles taken from the classical theory of determining economic efficiency.

Also, through financial methods, the economic parameters of IS creation and implementation can be evaluated similar to the evaluation of any other investment projects. Qualitative analysis methods complement quantitative calculations that help to evaluate all factors of IS efficiency and compare them with the company's overall strategy. This group of methods allows professionals to select the most important characteristics of systems, regardless of product characteristics and enterprise activity, and change the ratio between indicators using importance coefficients. Forecasting methods use statistical and mathematical models to estimate risk probability. An information system is used to evaluate the future effect of such methods; They are not as widespread in practice as others.

CONCLUSION

First result. All groups of methods for assessing the economic efficiency of the enterprise allow to obtain comprehensive information about the use of the enterprise at all stages of its development.

The second result is that, despite the fact that in modern conditions any enterprise has a fairly large se-

lection of various methods and methodologies for evaluating the efficiency of use, businessmen prefer analysis with two indicators: the total cost of ownership and the return on investments (the coefficient of return on investments).

The third result. Total cost of ownership describes the full set of costs for the implementation and use of information systems, including the indirect costs associated with the development, implementation, and operation of the information systems, in addition to the direct costs of the information systems.

References:

1. <https://unec.edu.az/application/uploads/2019/08/A-abalayev-Adil.pdf>
2. http://www.anl.az/down/meqale/uc_noqta/2013/mart/298167.htm
3. http://miu.by/userfiles/file/Aspirantura/synopsis/2014/2014-05-16_tkalich.pdf
4. Беренс В., Хавранек П.М. Руководство по оценке эффективности инвестиций: Пер. с англ. Перераб. и дополн. изд. - Москва, 2017.
5. Ramazanov M.K. "İnformasiya sistemləri menecmenti". Dərslik, Bakı, 2017 --- səh 187.