

Economic model for analyzing the effectiveness of the implementation of the Quality Management System (QMS) in banking

G.R. Tashmukhamedova

Head of Marketing Department Trans advertisement LLC Republic of
Uzbekistan

Abstract: Today, the economic efficiency of the QMS and the feasibility of its implementation have long been beyond doubt. The QMS model, which is based on the international standards ISO 9001, has received worldwide recognition. Many enterprises of various forms of ownership develop and implement it at home, moreover, regardless of the economic sector in which they operate. QMS based on these standards are so widespread and popular due to their versatility and approaches to quality improvement, which in practice has shown its effectiveness and efficiency.

Keywords: QMS, management, implementation, Economic model.

Introduction. Usually, when a product manufacturer has an implemented QMS, this is evidence that he is able to meet the requirements of consumers and meet their expectations, meet the requirements of government agencies, and also meet their own requirements for production activities. This is the main purpose and function of the QMS, which has a direct impact on its economic efficiency. In general, we can say that the economic efficiency of the QMS is based on ISO 9001: 2015 standards, provides an opportunity for the enterprise to create the foundation of its competitiveness and successfully develop further activities.

Modern companies are forced to operate in a highly competitive and constantly changing market. Accordingly, only those who are able to adapt to any changes in the market environment in the shortest possible time survive in the competition. This suggests that the QMS should be sufficiently flexible, with the ability to quickly adapt to the constantly changing requirements of the market and stakeholders. Only such a QMS can serve as a cost-effective tool in the hands of the company's top management.

Process control is usually divided into three levels:

- • effectiveness of implementation - shows whether it was possible to achieve previously defined normative indicators;
- • management effectiveness - characterizes the extent to which performance indicators are improved;
- • economic efficiency - the ratio of the result obtained to the time spent, human and material resources.

In principle, the main goal of QMS implementation is to achieve efficiency and effectiveness in all processes, to have a competitive advantage over other competitors. But the most important goal in implementing the standard is to achieve economic efficiency¹. At the moment, our country is actively introducing international standards to improve the activities of the organization, to comply with

the requirements of the state and in order to be more modern and advanced among its environment. But, achieving economic efficiency after the implementation of the QMS is the main goal of companies, since the implementation should give a tangible and strong impetus to development and easily close the initial investment in quality standards.

If the work examines the effectiveness of bank risk management, then in addition, it can be considered that the modern scientific literature on interpretations of the concept of "efficiency".

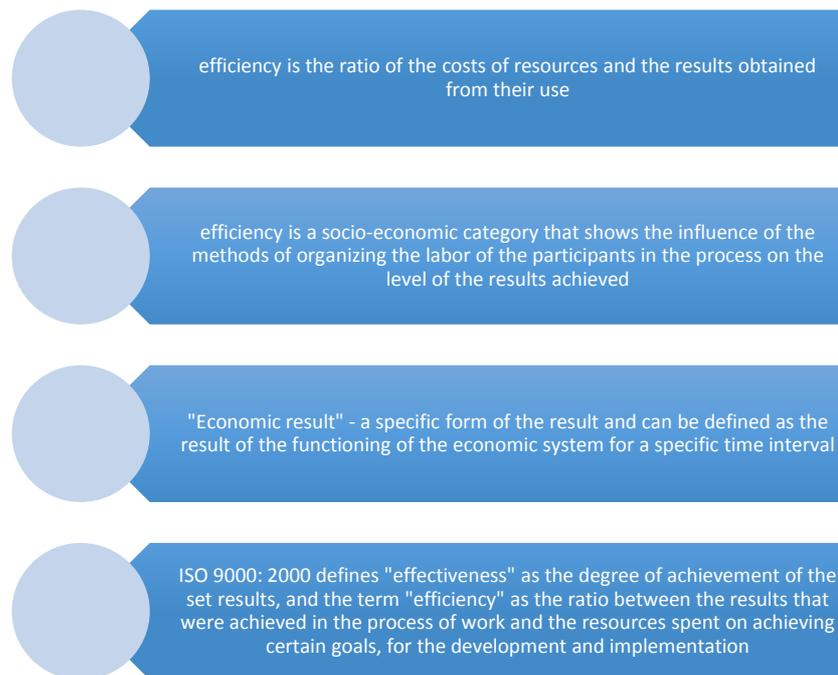


Fig.№ 1 Interpretations of the concept of efficiency

It turns out that efficiency is an assessment of the achievement of the goals set by the organization, and reflects the level of implementation of the developed strategy, and efficiency is an assessment of the use of material and time costs of the company for the process of implementing this strategy. At the same time, the complexity of assessing the effectiveness of the quality management system and analyzing the effectiveness in most cases is associated with their multidimensionality².

Evaluation of the efficiency of banking activities is most often given using the first definition, according to which the efficiency of a bank is assessed by the correlation between the values of indicators of the bank's activities and a predetermined border of efficiency.

Accordingly, the effectiveness of the bank is not only the results of its activities, but also an effective system of banking risk management, strategic management, and the use of a modern bank management system, which implies ensuring the quality of processes and strict control. In this case, the QMS for the banking sector will come to our aid as a foundation for creating conditions for effective management of banking risks.

For a more complete understanding, the types of economic effects can be

listed. For example, the economic effects in the implementation and improvement of quality management in banking include:

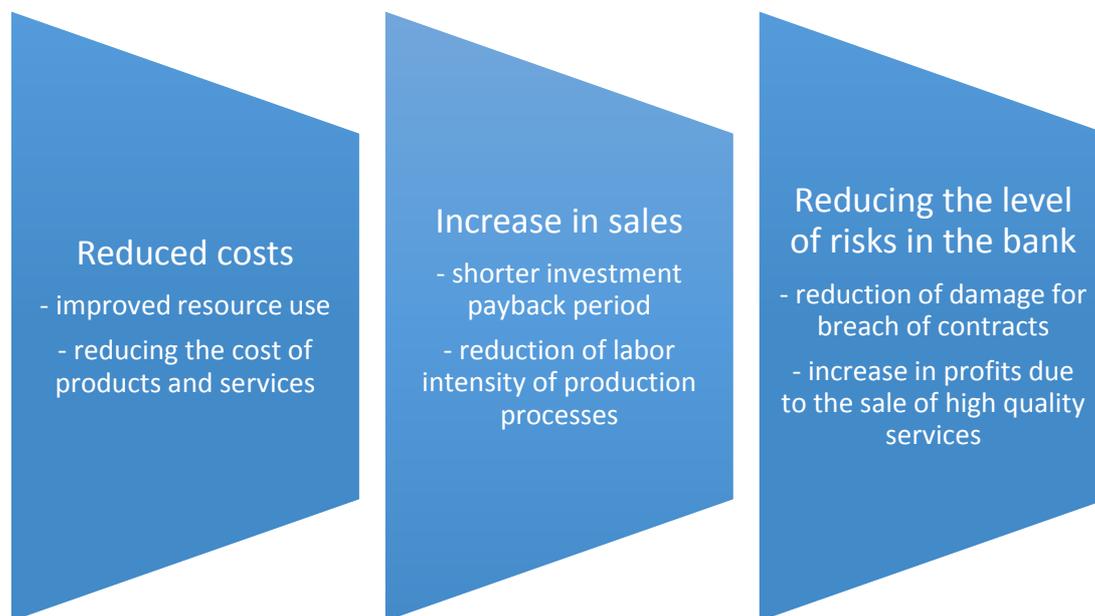


Fig. 2. Compiled by the author based on the works of M.I.Samogorodskaya ³.

Although many Western banks have already implemented ISO 9000 standards, only a small number of banks in Uzbekistan have received certificates of conformity. The reason may be a delay in the development of innovations and management standards, as well as an unstable situation in the country's economy. Nevertheless, there is a great need for the creation of a QMS in domestic banks, increased consumer requirements for banking products and services, and high competition in the financial market. Also, the requirements for standardization of banking activities are reflected in the decrees and decrees of the President of the country. It should be noted that banks have actively begun to implement international standards and use QMS tools in their activities to achieve economic efficiency and market recognition.

For example, the costs for the development and implementation of the QMS in one of the commercial banks in Russia amounted to 1,859,504 rubles. As a result of eliminating most types of inconsistencies, the total costs of operating the bank were reduced by 12%, while increasing revenues by 10%⁴.

In fact, the assessment of the economic effect achieved by improving some quality indicators is not particularly difficult, since the effect is expressed in available financial values: an increase in the company's presence in the market, an increase in sales, a reduction in production costs, etc. The most difficult thing is to determine and identify which initiative resulted in an increase in economic indicators. For example, it will be difficult to determine that some of the new customers have appeared due to an improvement in the quality characteristics of products or due to a powerful advertising campaign. It is even more difficult to predict in advance the economic effect that can be achieved by improving quality indicators. This is usually a complex analytical process and requires additional marketing research and analytical calculations. To assess how much, with a certain improvement in the quality of a product or service, the sales volume, customer base, market share of the company or

the life cycle of a customer or product can increase, it is necessary to assess the sensitivity (elasticity) of consumers to the quality of the product or service. It turns out that the assessment of the correlation between the quality and efficiency of an enterprise is the most difficult, but with a competent definition of this correlation, high results can be achieved.

Oddly enough, the high quality of the services provided can be effectively used to achieve high and mostly short-term effects. For long-term effectiveness and efficiency, it is necessary to focus on ensuring that the main production, auxiliary and service processes comply with the internal standards of the enterprise. And the most important thing is to maintain harmony in all processes.

Recently, experts have proposed six main approaches used to assess the effectiveness of the QMS of enterprises, which can be applied to banks.

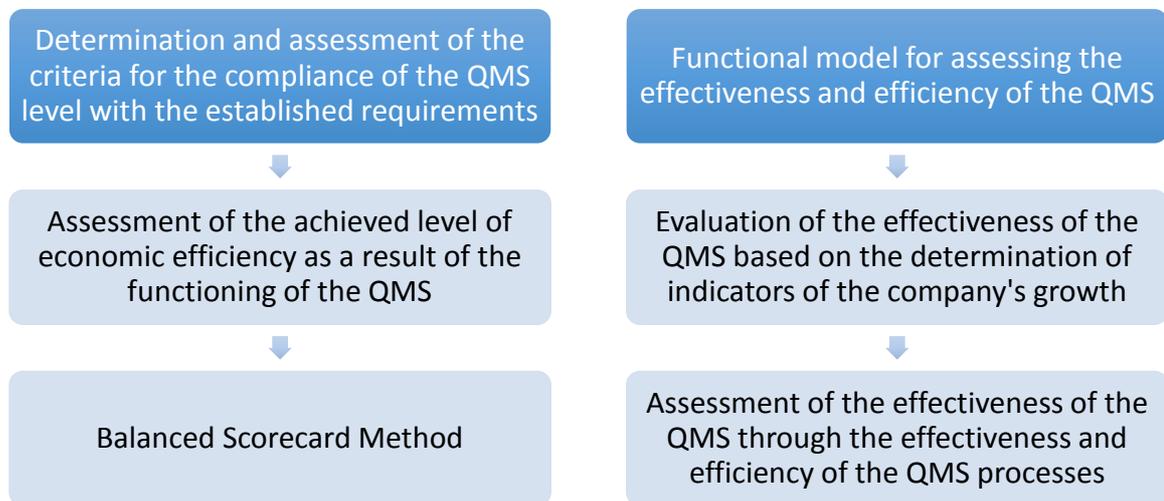


Fig.3. Six main approaches used to assess the effectiveness of the QMS of enterprises

1. Determination and assessment of criteria for compliance of the level of the management system with the established requirements. This methodology can be implemented by the following methods:

- external and internal audit for compliance with international standards;
- assessment or self-assessment of performance;
- international quality rating systems.

2. Functional model for assessing the effectiveness and efficiency of the QMS. It examines the degree of influence of individual elements of the QMS on the functioning of the bank as a whole. This methodology can be implemented by the method of expert assessment, which provides for a quantitative assessment of the effectiveness of the functioning of the QMS. The main tasks of the assessment are to identify weakly functioning individual elements of the system; assessing the functioning of the system as a whole and developing the necessary measures to further improve the QMS.

3. Assessment of the achieved level of economic efficiency as a result of the functioning of the QMS. This methodology is based on standard methods for determining the economic efficiency of capital investments.

The main indicators are:

- ***economic effect = results - costs;***
- ***economic efficiency = results / costs;***
- ***payback period = costs / benefits***

Accounting and management accounting data are used for the assessment. The static cost-effectiveness measures or discounted measures can be also used. In this regard, the objectivity of assessing the effectiveness of the QMS increases significantly.

4. Evaluation of the effectiveness of the QMS based on the determination of indicators of the company's growth. The methodology is based on a mechanism for measuring the most significant growth indicators for an enterprise as sales volume, profit, productivity, customer satisfaction, etc. This approach assesses not performance indicators, but the strategic role of the QMS in the long term. Since the effect of the functioning of any control system is by its nature synergistic, that is, the effect of strengthening the interaction and coordination between the elements of this system, the objective basis for its occurrence is the real interaction of the elements of the system. The synergistic effect characterizes an increase in the efficiency of activities as a result of integration, merging of individual parts into a single system due to the systemic effect. In this regard, the effectiveness of the QMS should primarily reflect the economic component of the enterprise. That is, it is required to establish a correlation between the implementation of the QMS and changes in the financial indicators of the enterprise⁵.

5. The Balanced Scorecard method is usually used in strategic management and assessing the performance of an enterprise according to several different systems of indicators. This approach is aimed at studying the interests and degree of satisfaction of all interested parties in the activities of the enterprise. It finds the optimal balance in the quantitative ratio and the dynamic relationship of these interests.

6. Evaluation of the effectiveness of the quality management system through the effectiveness and efficiency of the QMS processes. When assessing performance, indicators are used that characterize economic performance, sometimes measured in monetary terms, which is necessary to assess the effectiveness of the process. Usually, efficiency is understood as the relationship between the result and the resources used, that is, the cost of the quality of the processes. These indicators show how resources are optimized and losses are eliminated when the desired result is achieved. To evaluate the effectiveness of a process, the costs of the process must be identified and classified. Comparison of economic performance and costs of the process makes it possible to calculate indicators of the effectiveness of the process.

The methodological approach to assessing the effectiveness of the QMS, compiled by the author by combining different assessment methods, seems to be very effective. First, we can offer a model for analyzing and assessing the effectiveness of

the implementation of the QMS in banking, including the impact of the QMS on reducing operational risks.

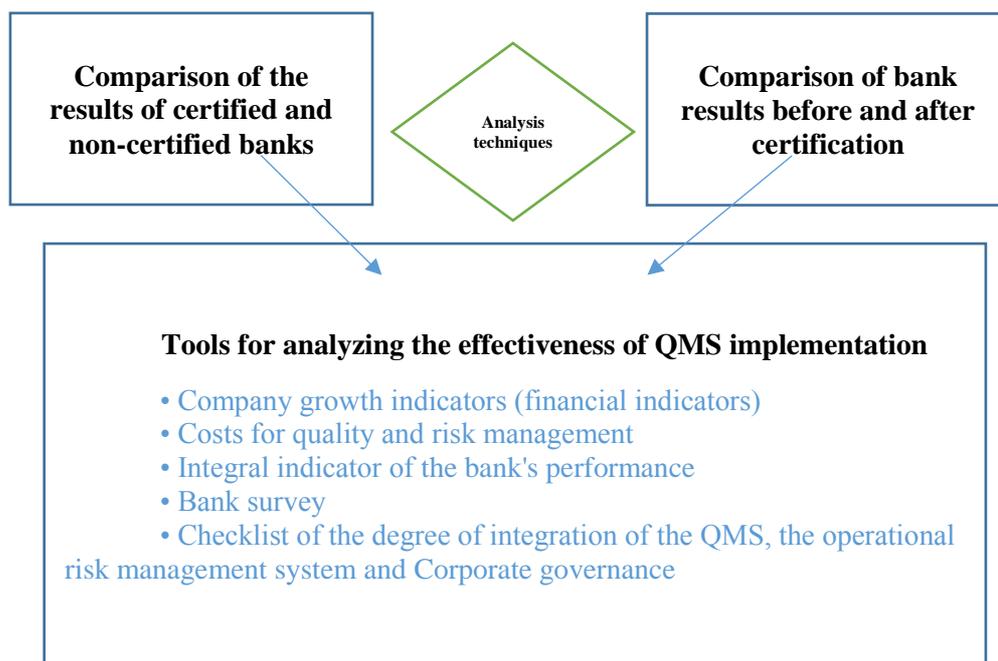


Fig. №

4. Model for analysis and assessment of the effectiveness of the implementation of QMS in banking

In this model of a comprehensive assessment of the effectiveness of the implementation of the QMS, the basic methods of analysis are used as a comparison of the results of certified and non-certified banks and a comparison of the results of banks before and after certification. For comparative analysis, as a rule, statistical, economic and financial data from publicly available information resources are used.

These methods can demonstrate objective data to analyze the effectiveness of the implementation of the QMS. And as an economic assessment itself, a number of tools and calculation can be used, which will allow to look more deeply and assess the state of the bank and make important decisions for the development of activities. We will reveal in more detail the tools for assessing the effectiveness of the QMS.

- Indicators of company growth - to assess intra-bank effects, it can be applied financial indicators such as costs per one ruble of manufactured products, return on assets, return on invested capital, return on sales and asset turnover, etc.

- Costs for quality - It can be see several options for calculating the economic assessment of the QMS developed and adapted by the author for the current requirements of banking.

One-off and maintenance capital investments for the implementation of the measures provided for by the QMS project into banking activities, are determined by the formula developed by the author:

$$K = EPR + CPEC + CCERT + CAUDT$$

where EPR – estimated cost of the project (design, consulting, linking the QMS to banking);

C_{PEC} – (Infrastructure + Knowledge + Involved specialists + Means for monitoring measurements)

-the cost of the necessary infrastructure and resources (IT infrastructure, office equipment, purchased programs and products, equipment to improve the quality of operations and ensure security)

-the cost of training personnel in QMS, risk management, audit, seminars and invited specialists to improve the qualifications of personnel within the QMS;

- the cost of involved specialists in risk management, QMS, audit who can carry out work once or repeatedly;

- the cost of tools for monitoring measurements, calibration of these equipment, which can be used to ensure the smooth operation of servers in banking;

C_{CERT} - *the cost of QMS certification is determined based on actual data - the average cost of services of certification bodies.*

C_{AUDT} - *cost of external audit (once a year)*

As can be seen in the formula, for the calculation of one-time and supporting capital investments for the construction, implementation and certification of the QMS, all inclusive costs must be provided. First of all, this data will give an idea of the forthcoming costs of standardization, in order to avoid unexpected costs, the ability to plan standardization in advance. When the bank knows exactly the approximate amount for the implementation of the QMS, it is possible to more accurately calculate the payback period of the standardization project. Also, evaluate the effectiveness of the functioning of the QMS.

In addition to possible cost estimates, negative quality costs can be proposed. This formula includes, on the one hand, the inevitable costs of control and quality assurance, on the other hand, losses from non-conformities. With this method, internal and external losses due to poor quality must be estimated.

The negative cost of quality can be calculated using the formula:

$$C_{QUAL} = C_{OPER} + C_{LOSS}$$

Where C_{QUAL} - is the cost of quality in banking, C_{OPER} is the annual operating costs of the quality department and C_{LOSS} is the annual loss from non-conformities.

- **Integral indicator of the bank's performance** - The author also proposes to use the formula in the form of a system of coefficients that will help characterize the qualitative indicators of the QMS efficiency, including the level of operational risks. It is proposed, by calculating a simple algebraic average, to calculate the integral indicator of the bank's performance and analyze the dynamics of its change since the start of the QMS implementation project.

- **Quality factor** - an indicator calculated on the basis of data on inconsistencies in services in banks. This coefficient is calculated based on the maximum possible value of 1.0 and is a coefficient expressing the ratio of the number of quality services provided to the total number of services produced.

- **The social satisfaction coefficient** reflects the subjective assessment of the quality of services by consumers in banks. For a reliable assessment of this

indicator, it is necessary that the organization has a system for collecting information on customer satisfaction and analysis.

- Ratio of efficiency - the ratio of average planned costs per service unit to actual costs in banking. The coefficient depends on the average cost of services and is largely determined by the level of qualifications of workers, their choice of technologies that are optimal in terms of rationalizing the use of resources.

- Risk level ratio - calculated on the basis of planned and actual costs of operational risks.

As an integral indicator of the effectiveness of the QMS, the author calculated the algebraic average for all previously presented indicators. The formula for calculating the integral indicator is as follows:

$$K = \sqrt[3]{C_{qual} \times C_{soc} \times C_{effic} \times C_{risk}}$$

where: K - the integral coefficient of efficiency, C_{qual} - the coefficient of quality, C_{soc} - the coefficient of social satisfaction, C_{effic} is the coefficient of efficiency of resource use and C_{risk} is the coefficient of operational risks. The dynamics of the integral coefficient of banking activity may show a trend towards an increase or decrease.

- Checklist of the degree of integration of the QMS, operational risk management and corporate governance systems.

As a tool for identifying qualitative indicators of the effectiveness of QMS, the checklist of the degree of compliance of the integrated elements can be used with the requirements of the management system standards and the degree of integration of management and risk management systems. This checklist must be developed taking into account the priority requirements from the integration of systems and the requirements of the bank. Most importantly, the components of the checklist should be improved and revised by quality and risk specialists. And the results obtained can be useful for analyzing the economic effect of introducing risk management systems and QMS.

As mentioned above, to the methods of economic assessment of the QMS, mathematical and statistical methods of assessment, which are a more specific method, can be applied, but requires diligence on the part of the performers. Due to the many options for calculating the efficiency of an enterprise, the most suitable and affordable option must be chosen. An obvious advantage of the model for assessing the effectiveness of the implementation of the QMS is the combination of both qualitative and quantitative parameters of the effectiveness of the management system into a single system, which significantly increases the degree of objectivity of the assessment.

It can be concluded, that the approaches analyzed above to determine the effectiveness of the QMS reflect the variety of models, methods and assessment tools used in practice. In this case, each company can independently make a choice from this variety and find the most suitable set of tools. The main goal of this work is to show how the QMS functions in practice in a bank and brings significant benefits and

advantages. **If we consider the economic effect, then the amount of additional benefits and savings after building a QMS in a bank is several times higher than the costs of its construction and operation.** Of course, this is achieved primarily due to a significant reduction in the number of customer claims against the bank and the costs of their satisfaction, increased customer satisfaction, the influx of new customers and, accordingly, an increase in sales and service complexity. Most importantly, through standardization, control and monitoring, it is possible to significantly increase the efficiency of management with banking risks, namely operational risks that can be managed.

References

1. Zlobina N.V., Fetisova O.V. Conceptual framework for the process development of the organization's quality management. Publishing house FGBOU VPO "TSTU", 2012.
2. Interconsult, The essence of the management system at manufacturing enterprises, Intercansalt 2017, available: <http://www.iksystems.ru/a387/2015>
3. Ilyenkova S. D. Quality Management, available: <http://www.studfiles.ru/preview/3320394/> 1998.
4. Kozitsina N.V., 2005, World evolution of quality management, available: <http://quality.eup.ru/MATERIALY11/qmir.htm>
5. Electronic fund, 2017, Interstate QMS standard, available: <http://docs.cntd.ru/document/gost-iso-9001-2011>
6. Afuah A. Business Models: A Strategic Management Approach. - McGraw-Hill, 2003. - Ch. 13. Corporate Social Responsibility and Governance. P. 134.
7. Makarova O. 2014., Legal support of corporate governance in joint-stock companies with state participation, Abstract, St. Petersburg
8. Versan V.G., Chaika I.I. Product quality management systems. M.: Publishing house of standards. 2009.150s.7)
9. Steinbercher A. G., 2013, The role of the banking system in a market economy, No. 14-1, Economic sciences, NovaInfo, 2017, <http://novainfo.ru/article/1640>
10. Tsivinyuk, R.A., 2014, Economic Library, 2017, Harmonization of quality management systems for banking services with international standards, available: <http://economy-lib.com/garmonizatsiya-sistemy-menedzhmenta-kachestva-bankovskih-uslug-s-mezhdunarodnymi-standartami#ixzz4yP2g8FqH>
11. Interkansalt, 2018, QMS in the banking sector - correct construction, Available: <http://www.iksystems.ru/a178/>
12. Lobacheva T.A., Syulyargina A.Yu. Assessment of the quality of banking services. Ekaterinburg, 2008. -- 229 p.
13. Troshin V. A., 2014, Evaluation of the efficiency of a commercial bank. Innovative economy: materials of the Intern. scientific. conf. <https://moluch.ru/conf/econ/archive/130/6110/>
14. Rabadanova D.A., 2011, Methods for assessing the effectiveness of banking activities of regional credit organizations, Financial credit system, Dagestan

15. Zenchenko S.V., 2008, Methodological bases of risk management in the formation of the financial potential of the region, Available: <http://www.rppe.ru/wp-content/uploads/2010/02/zenchenko-sv.pdf>
16. Popova G.S. Analysis of the financial condition of a commercial bank. - M.: Finance and statistics, 2006. -- 271p.
17. Redhead K., Hughes S. Financial risk management. - M.: Infra-M, 2006. —287p.
18. Sevruc V.G. Banking risks. - M.: Delo, 2004. —70p.
19. Rose Peter S. Banking management. M.: Delo, 2005
20. Sinky JF (Jr.) Financial management in commercial banks. - M.: Catallaxy, 2004. -- 937p.
21. Creation and organization of a commercial bank. Ed. S.I. Kumok. - M.: Veche; Moscow finance. association, 2004. – 319p.
22. Sharifkhodzhaeva K.U. Ph.D. thesis on the topic: Assessment and reduction of the impact of risks on the profit of small businesses. - T.: TFI, 2010.- 79p.
23. Pavlovich PA, 2005, Formation of an effective risk management system in banking, dis. Cand. Econ. Science, Perm.
24. Lyakhovskaya K.Ya., 2014, Assessment of the Bank's Performance, Tomsk Polytechnic University.
25. Fetisova OB, 2012, Foreign experience of quality management in the framework of the implementation of business processes of the enterprise, Questions of modern science and practice. Available at: www.cyberleninka.ru
26. ISO strategy for services, 2016, ISO 20022, Universal financial industry message scheme, Доступно: www.iso.org

Text references

¹ Interconsult, Economic efficiency recognized worldwide, 2019 // <https://www.iksystems.ru/a106/>

² Interkansalt, 2018, QMS in the banking sector - correct construction, Available: <http://www.iksystems.ru/a178/>

³ Samogorodskaya M.I., on the question of assessing the effectiveness of the implementation and functioning of the QMS at the enterprise // Systems Economics Management. 2010. No 3.P. 116–120.

⁴ Dembovskaya E.Yu., 2015., Modeling the QMS of a commercial bank, Masters Journal

⁵ Samogorodskaya M.I., On the question of assessing the effectiveness of the implementation and functioning of the QMS at the enterprise // Systems Economics Management. 2010. No 3.P. 116–120.