DEVELOPMENT OF THE SUPPLY CHAIN AND LOGISTICS NETWORKS AS AN INNOVATIVE ENVIRONMENT FOR THE DEVELOPMENT OF ENTREPRENEURIAL ACTIVITY

Kseniya K. Platonova, Russian Technological University

ABSTRACT

Aim of the study: The economic activity of enterprises in the processing industry is a complex network of functional processes carried out through the use of certain resources that have synergistic links and are aimed at achieving a strategic goal. Continuous functioning of business processes generates added value and directs activities to achieve certain business results.

Methodology: The experience of recent years shows that in a changing economic environment, the network of business processes changes qualitatively and acquires a new economic content. At the same time, the system of economic activity has a systematic character and is characterized by a set of standard economic processes.

Keywords: Entrepreneurship, Logistics, Market, Development, Innovation.

INTRODUCTION

Current information support provides material and financial flows with economic (financial) content. Modern innovative transformations and the use of modern information technologies in the business environment require the use of appropriate tools for effective management. To solve complex management tasks, information support must apply the latest concepts, as well as meet the modern principles of rational use of resources and logistics of business processes (Battaglin, 2003).

The problems of forming industry-specific systems of logistics business processes related to the distribution of economic resources have often been among the key problems facing economic science. Many international economists have explored the role of industry business systems and ways to streamline business processes. Famous economists Tjalling K. Koopmans (USA) and Kantorovich L.V. (USSR) in 1975 received the prize in the field of economic Sciences in memory of Alfred Nobel for their contribution to the theory of optimal resource allocation. In 1988, a similar prize was awarded to Maurice Alleys (France) for his innovative contribution to market theory and efficient use of resources (Clark, 1990).

Within the framework of the theoretical justification of management of economic resources and business processes in the Western scientific tradition, business process management mechanisms were developed in accordance with modern technological transformations, the level of development of information technologies and changes in the economic environment. Concepts such as business process reengineering, process management, and quality management system were introduced.

METHODOLOGY

The main problem of the logistics philosophy is the problem of interpretation, which is solved by searching for conditions under which the results of the study of known axioms can be expressed through linking and transforming logistics flows & the structure of economic activity of the processing industry consists of a set of economic processes at different levels. Let's consider the conceptual framework and analyze the definitions of the concept of "*Business processes*" using a systematic approach and considering business processes primarily as a logistics system (Collett, 1991).

The first part of the complex concept of "*Business process*" is accompanied by a General theory of processes that considers processes of different nature. This theory appeared in the middle of the twentieth century and became an important stage in the development of system theory. Directly, the concept of "*Process*" is a specific procedure or order of action, is multi-faceted and ambiguous (Fleiss, 1981).

RESULTS AND DISCUSSION

Processes in the economic environment are sequential execution of functional operations aimed at achieving a certain result. From the point of view of management, the concept of " process "*Is disclosed in ISO 9001:2000 standard 10*" *Business process Management*", according to which a process is a stable, purposeful set of interrelated activities that transforms inputs into outputs according to a certain method (Great Britain, 2003).

According to Harrington H. J., a process is a logical, interdependent set of measures of an entity that consumes resources, creates additional cost, and delivers the result to the final customer or consumer.

Business (from English Business business, entrepreneurship, entrepreneurship) - initiative economic activity carried out at the expense of own or borrowed funds at your own risk and under your own responsibility, setting the main goals of making a profit and developing your own business.

Business process management in the processing industry has historically been the first area of implementation of a set of methods, which later became known as the "*Process approach*" (Heiberger, 2004).

Modern development of information technologies makes the efficiency of economic processes directly dependent on timely logistics information support of the management process. Information dependence of the management level in the processing industry creates prerequisites for coordination of actions with the help of logistics information support (Hosmer, 1989). Management can create an optimal impact on processes as management objects only if appropriate information resources are available. Thus, logistics information becomes more important for resource management, which must accompany material and financial flows (Lee, 1980). A network of information flows is a system that accompanies material and financial flows, fills them with economic content and corrects them to a rational level. The absence of a modern information support system slows down business processes, which, in turn, complicates the process of promoting industrial products (works, services) from the place of production to the consumer. A systematic approach to this problem will allow you to outline such a network within the logistics system, and fill it with modern logistics concepts.

Therefore, the task of this section is a systematic study of the main historical concepts and modern problems of creating a network of business processes in the processing industry and

determining the prospects for their support by information and logistics systems for the purpose of timely monitoring and effective coordination (Lovanov, 2018).

The modern logistics system is a specially organized integrated macroeconomic system consisting of a group of interconnected organizations (companies, corporations, universities, banks, and government agencies) concentrated on a certain territory, which systematically complement each other and strengthen the competitive advantages of individual economic entities and the national economy as a whole (Ries, 2018).

Security logistics information systems contain a set of functional features that meet the specifics of the economic environment, form the appropriate business processes and are aimed at organizational-structural and organizational-analytical improvement of streaming processes and streaming functions of any content in the reproduction cycle.

If we consider business processes as organically linked components of a single economic environment, we can see certain patterns. Their compliance may not be noticeable, but it happens during any activity. On the contrary, their non-compliance can lead to certain negative phenomena in the economy and always leads to negative final results (Ross, 2004).

You may not notice these phenomena, but they are caused by the laws of the business environment. Let's try to understand the economic nature of business processes and consider modern concepts of their regulation.

The development of the theoretical framework for detailed distribution of activities into standard business processes and the beginning of the formation of logistics information for operational management of small processes began in the middle (Sacco, 1987).

Author of an Inquiry into the Nature and Causes of the Wealth of Nations, Adam Smitt (1723-1790). This famous economist, a classic of the world economy, concluded that "*The division of the production process into small specialized operations*" together with the division (specialization) of labor into small typical processes is the main reason for the growth of labor productivity and, in turn, a source of increasing income ("*Source of increasing wealth*"). Back then, he claimed that the detailed distribution of the process facilitates the introduction of machines at each stage, after which it is performed at an inhuman speed. (Selvin, 2004). This concept allowed at that time to make a significant breakthrough in the dynamics of labor productivity, which increased almost twice and marked the beginning of a serial approach to production processes. The similarity of the capitalist views of the Adam Smith era is confirmed by the fact that the organization of modern production processes is still based on these primary principles and does not depart far from these fundamental aspects.

Further scientific and technical development successfully fit into such economic conditions, causing a constant increase in the technical capabilities of the production process and the speed of operation of machines and equipment that were used in the process of processing and manufacturing products. According to historical data, over the next 150 years, productivity increased by more than 100 times only due to the increase in the speed of production processes (Semenyutina, 2018).

At the beginning of the XIX century. English mathematician and economist Charles Babbage (1792-1871) exploring economic processes and production technology proposed the division of labor and related economic processes by skill level. This conceptual study was one of the first on the topic of operational and qualification division of labor, which for the first time justifies the idea of serialization of processes, and the "*Babbage principle*", fixed in economic science the mechanisms of division of labor by skill level.

The serial nature of production processes and the development of French researcher Gaspar de Proni inspired Babbage to research into the mechanization of creating information itself. For the first time in Economics, he proposed using information as a resource and dividing the entire information processing process into three consecutive stages. The first stage should be carried out by qualified mathematicians and was associated with the process of preparing the mathematical software. The second stage was carried out by educated, qualified technologists, who had to organize a routine counting process and perform computing work (Smith, 2003). Finally, the third stage was occupied by the calculators themselves, who were not required to have highly qualified knowledge and specific skills, but only to have simple arithmetic skills. Typicality, seriality, regularity, together with the complexity that was characteristic of these processes, led Babbage to the conceptual hypothesis about the possibility of replacing the third level of information work (computational work) with a mechanical device (Smith, 2002).

In 1833, Charles Babbage, continuing research in the field of information processing, built a complex and conceptually new device at that time. After the first presentation, the device was called "*Analytical machine*" and was used for complex mathematical calculations. This is certainly the first device that created and processed analytical information for managing business processes. Based on the results of his conceptual research, Babbage published the results of his research in the book "*Economics of technology and production*". This work is the first publication in economic science on the management of production and other economic processes using economic and mathematical indicators.

Technological structure a set of related industrial enterprises that develop synchronously and have approximately the same level. Hemant Tambdd, explaining the concept of the technology paradigm, brings together a wide range of interrelated radical innovations that affect different segments of the integrated business system (United States, 2000).

The world is living today in the era of the third industrial or digital revolution, which is gradually transforming into the fourth industrial revolution, or "*Industry 4.0*" and is characterized by conceptual changes in technology and the blurring of borders between physical, digital and biological spheres based on the introduction of "*Cyber systems*" in business processes. It is assumed that these systems will be combined into a single network, communicate with each other in real time and will be able to carry out a certain type of economic process without human participation (United States, 2002).

According to research by specialists of the National Institute for strategic studies, "society on a global scale has entered a fundamentally new stage of development "*digitalization*", as a new economic phenomenon formed on the knowledge economy, which is radically different from the economy of material production." "*Digitalization*" acts as a universal accelerator for the development of economic processes. However, the most noticeable trends in this context are the formation of digital infrastructure and new opportunities for business processes using electronic means of communication, the expansion of forms of cooperation, innovations in information data management, the Internet of things database - IoT (Internet of Things'), industry redesign, and the openness of innovative programs and services to all business systems. Global changes are also evident in the fact that the world is becoming more "*Connected*", and business processes are beginning to turn into new conceptual forms. The technological center of such transformations in the economic nature of business processes is the IOT concept (Vittinghoff, 2005).

The pace of Informatization of economic processes is now ahead of their regulatory regulation. Today, specialists working in the field of information logistics experience a clear lack of regulatory support for their activities.

The situation is further complicated by the fact that, according to article 16 of the Law, the application of standards, codes of established practice and technical specifications adopted by enterprises, institutions and organizations is carried out on a voluntary basis. Mandatory application of standards is provided only if there are references to standards in transactions, technical regulations, or if there is a Declaration of conformity of products to certain standards, but such requirements are not available in current regulatory documents.

Legal support provides for the development and use of agreed legal acts regulating material, financial and information relations between participants in business processes in the processing industry (Zschau, 2003).

Managing business processes in the processing industry involves continuous improvement and optimization. At the same time, this should take place within the framework of existing legal documents. Thus, the set of business processes is a complex information and communication system, where all its elements have clear connections and patterns.

CONCLUSION

Modern norms of business process regulation are mainly based on standards that have 4 levels according to European experience. The first level of standardization is international. The norms of these documents (standards) are unified and take into account the specifics of different sectors of the economy and subjects with different organizational and legal forms. The provisions contained in these standards are variable. They can be perceived as recommendations to management for choosing one of several alternative applications in business activities.

The second level of standardization is national. The norms of these documents (standards) contain mainly recommended requirements. At the same time, some regulations and provisions of these documents are mandatory for resident enterprises, as well as non-residents who conduct business), only if their mandatory application is established by legal acts. National standards apply norms, rules, requirements, and concepts that regulate a certain area of economic activity, product quality assurance, and interaction with other enterprises and organizations. "Mandatory" standards are posted on the website of the national standardization body within 30 days of their entry into force.

The third level of standardization is industry – specific. The norms of these documents (standards) are mandatory for all economic entities of a certain industry, their contractors (subcontractors). Now the Law gives the right to Central Executive authorities within fifteen years within their powers to check, revise their industry standards with the aim of transferring them to the national level or to the level of enterprises (private) or abolishing them. For the processing industry, there is a need to bring industry standards to modern European standards.

The fourth level of standardization is private (enterprise standards). The norms of these documents (standards) are developed for business processes that take place in a particular enterprise. Private standards should not contain conflicting norms to national and industry standards. The objects of private standards are the quality parameters of products; production equipment; business processes, as well as the processes of organization and management of activities. In fact, these are internal documents of the Order type, but of a long validity period (12 months or more). The norms of such standards are developed for a separate business unit, take into account the specifics of its activities, organizational and legal form, and act to implement it for this business entity.

REFERENCES

Battaglin, W.A., & Geological Survey (U.S.). (2003). Estimating the susceptibility of surface water in Texas to nonpoint-source contamination by use of logistic regression modeling. U.S. Dept. of the Interior.

Clark, C.W. (1990). Mathematical bioeconomics: the optimal management of renewable resources (2nd ed.). Wiley. Table of contents http://catdir.loc.gov/catdir/toc/onix02/89022599.html

Collett, D. (1991). Modelling binary data (1st ed.). Chapman & Hall. Table of contents http://bvbr.bibbvb.de:8991/F?func=service&doc_library=BVB01&doc_number=003708934&line_number=0001&func_code=DB_RECORDS&service_type=MEDIA

Fleiss, J.L. (1981). Statistical methods for rates and proportions (2d ed.). Wiley. Table of contents http://catdir.loc.gov/catdir/toc/onix02/80026382.html

Great Britain., & United States. Department of State. (2003). Defense, mutual logistic support : agreement between the United States of America and the United Kingdom of Great Britain and Northern Ireland, amending the memorandum of understanding of October 11, 1984, as amended, signed at London and Stuttgart-Vaihingen March 15 and 18, 1996. Dept. of State : For sale by the Supt. of Docs., U.S. G.P.O.

Heiberger, R.M., & Holland, B. (2004). Statistical analysis and data display: an intermediate course with examples in S-plus, R, and SAS. Springer, Table of contents http://catdir.loc.gov/catdir/enhancements/fy0817/2004048200-t.html

Hosmer, D.W., & Lemeshow, S. (1989). Applied logistic regression. Wiley. Table of contents http://catdir.loc.gov/catdir/enhancements/fy0607/89031893-t.html

Lee, E.T. (1980). Statistical methods for survival data analysis. Lifetime Learning Publications. Table of contents http://www.gbv.de/dms/bowker/toc/9780534979874.pdf

Lovanov, I. (2018). Solution of the problem of the theoretical profile of non-dimensional speed on the thickness of the boundary layer at the turbulent flow in the boundary layer based on the solution of the differential equation of Abel of the second generation with the app. *World Ecology Journal*, *8*(1), 43-51.

Ries, A.L. (2018) Outcome measures in pulmonary rehabilitation: A multivariate logistic regression analysis.

Ross, S.M. (2004). Introduction to probability and statistics for engineers and scientists (3rd ed.). Academic Press.

Sacco, W. (1987). Mathematics and medicine: how serious is the injury? Janson.

Selvin, S. (2004). Statistical analysis of epidemiologic data (3rd ed.). Oxford University Press. Table of contents http://catdir.loc.gov/catdir/toc/fy051/2003066214.html

Semenyutina, A., Noyanova, N., & kurmanov, N. (2018). Scientific justification of selection of plants for sanitary protection zones in arid region. *World Ecology Journal*, *8*(1), 52-68.

Smith, F.G., & Smith, J.E. (2003). Key topics in clinical research: a user guide to researching, analyzing, and publishing clinical data. BIOS Scientific Publishers;

Smith, L. (2002). Reasoning by mathematical induction in children's arithmetic (1st ed.). Pergamon. Table of contents http://catdir.loc.gov/catdir/toc/fy054/2002075400.html

United States. Joint Chiefs of Staff. (2000). Doctrine for logistic support of joint operations. Joint Chiefs of Staff,. http://purl.access.gpo.gov/GPO/LPS50262

United States. Joint Chiefs of Staff. (2002). Joint doctrine for logistic support of multinational operations. Joint Chiefs of Staff,. http://purl.access.gpo.gov/GPO/LPS50561

Vittinghoff, E. (2005). Regression methods in biostatistics: linear, logistic, survival, and repeated measures models. Springer. Table of contents http://catdir.loc.gov/catdir/enhancements/fy0818/2004056545-t.html

Zschau, J., & Küppers, A.N. (2003). Early warning systems for natural disaster reduction. Springer.