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**ALGORITHM OF THE ROAD MAP CONSTRUCTION FOR  
LOSSES OPTIMIZATION**

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***Abstract***

Global economic development and the influence of political factors lead to the fact that production systems in their development need to reach a new level. One of the options to improve production efficiency is the use of the concept of lean production for which it is necessary to develop an appropriate methodological apparatus for the use of lean production in the enterprise. In today's reality, the introduction of lean manufacturing principles is becoming one of the main ways to improve the competitiveness of business. Abroad, this philosophy is developed and applied for more than a hundred years. The concept helps companies to develop harmoniously in all directions, providing an appropriate level of quality and services, while reducing costs and satisfying their employees working conditions. In Russia, an increasing number of organizations set themselves the task of reducing costs in accordance with international quality standards of products and services. The solution of these problems is increasingly seen by enterprises in the application of the concept of lean production, but a simple repetition of the experience of other organizations will not bring results. The application of lean production concept at Russian industrial enterprises is a disordered, chaotic process. To solve this problem, the authors propose a method of accounting for the impact of losses in one business process on the occurrence in another, which will determine the priority of solving problems, as well as the feasibility of using certain tools of lean production in this business process.

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**Keywords:** Lean production, losses, business process, algorithm lean production, business process.



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## 1. Introduction

Large-scale foreign experience in the use of the concept of lean production has many examples of the use of the concept. Enterprises in Europe (50%), Japan (90%), USA (60%), Canada, Mexico, Australia have introduced lean manufacturing, which helps them to develop harmoniously in all directions, providing an appropriate level of quality and services, while reducing costs and satisfying their employees working conditions.

In Russia, an increasing number of organizations set themselves the task of reducing costs in accordance with international quality standards of products and services (Belysh, 2018). The solution of these problems is increasingly seen by enterprises in the application of the concept of lean production. The introduction of lean production in the Russian and foreign companies leads to lower costs up to 20-40%, to improve the quality of products up to 40%, increasing productivity up to 25%, the profit increase to 15-20%, to reduce the time of execution of orders up to 80% to the turnover increase to 16-20%, freeing up production space in two times. Nevertheless, positive international experience is not the key to the success of Russian companies (Gaisina et al., 2019).

## 2. Problem Statement

The lean production at Russian industrial enterprises is a disordered, chaotic process. The general system of knowledge and values of the concept are not formed, there is no understanding of the lean production philosophy. Enterprises grab all the lean production tools, not taking into account that in some business processes the use of these tools is impossible, or will not lead to anything.

At some Russian enterprises, researchers identify objective organizational and methodological problems of implementation and adaptation of lean production to the peculiarities of doing business in Russia, as well as to the specifics of some enterprises, especially oilfield services:

1. Lack of experience in the application of the concept in the service enterprises having a production process. Lean production is successfully applied at the enterprises of mechanical engineering, automotive industry (if we consider together – about 40 %), i.e. on those on the basis of which the philosophy of lean production was built by G. Ford himself. Accordingly, the main part of the concept tools are aimed at solving problems of mass production. Later, lean manufacturing became possible to use services in enterprises through the use of Kaizen philosophy. As for the oil and fuel industry, the percentage of application is not more than 3%, and that too only in manufacturing plants (Chernova & Ageev, 2016).

2. Do not explore the feasibility of applying this concept in every business process (Kazantseva, 2014).

3. Do not identify the dependence and impact of losses in different business processes on each other.

As a rule, this leads to the fact that the desired effect is not achieved, and companies abandon the idea of lean production.

## 3. Research Questions

The main research questions are:

- To determine the feasibility of applying the concept in a particular business process, analyze business processes;
- To identify losses of production processes;
- To developed an assessment concept for the impact of losses on each other.

#### 4. Purpose of the Study

This study is aimed at development of an algorithm of a roadmap construction for optimizing losses. To optimize production processes, it is necessary to identify the losses of each business process, to determine the impact of these losses on each other. This will enable to choose the right tools of the concept and improve the efficiency of the company.

#### 5. Research Methods

1. At the first stage all business processes existing at the enterprise are analyzed, the purposes of each process are formulated, the necessity of introduction of the concept of lean production is defined and if Yes, these prerequisites are divided into the main and auxiliary (Maslov, 2015).

2. The second stage is that in each business process it is necessary to investigate for the presence of the proposed losses and find the relationship between them.

3. The task of the third stage was to determine the mutual impact of losses of one business process on the losses of another. For this purpose, the authors propose to use a binary matrix (Figure 01).

Matrix of the mutual influence of losses										
Losses	lean production 1			lean production 2			...	lean production n		
lean production 1	P1,	P2...	Pn	P1,	P2...	Pn		Pn1	Pn2	Pn3
P1	1									
P2		1								
Pn			1							
lean production 2										
P1				1						
P2					1					
Pn						1				
....										
lean production n										
P n1								1		
P n2									1	
P n3										1

Note: X-independent from each other;  
 \* y-there is a conditional dependence;  
 \* C-increases the negative impact.

Source: authors.

**Figure 01.** Matrix of mutual influence of losses

4. After identifying the losses in each business process and the relationship with other losses, it is necessary to form a ranked list of losses by the degree of their influence on the entire process, namely the universal indicator of lean production efficiency – time, and make a chain of losses (Ministry of Economic Development, 2015).

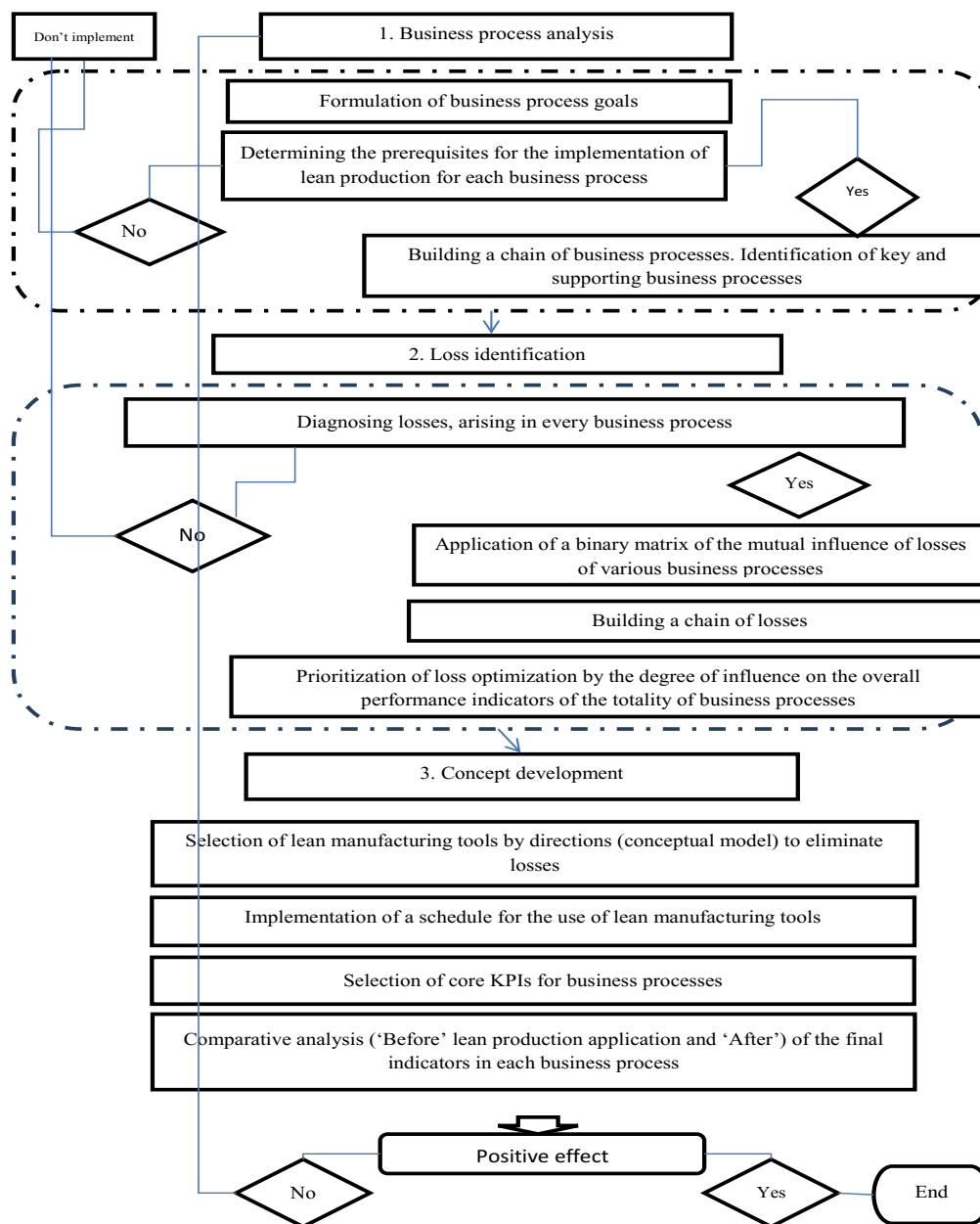
5. At the third stage, it is necessary to choose tools that can be used to eliminate the identified losses. After the application of lean production tools, the authors propose to identify the main KPIs for each business process and conduct a comparative assessment of the "Before" and "After" (Rudov, Khairullina, Gareev, Koltunov, & Skifskaja, 2017).

6. After the introduction of the concept, already at the strategic level, a long-term plan for the enterprise development is worked out taking into account new ideas (Shibanov, 2019).

## 6. Findings

The research results include:

1. The development of an algorithm for determining the mutual impact of losses on each business process: creation of chains of losses, ranking them by the degree of their influence on the final effect (Figure 02).
2. A binary matrix is formed for determining the dependence of losses on various business processes (Figure 02).
3. The scheme of the concept application is offered taking into account the carried-out actions.



Source: authors.

**Figure 02.** Algorithm for constructing a loss optimization roadmap

## 7. Conclusion

Taking as a basis that the concept of lean production has improved the company's activities, competently integrated into the business processes that really needed it, allowed to eliminate losses, as well as to avoid the emergence of new ones, the author proposes to extend his successful experience to all suppliers and customers of the company to avoid losses from the outside (Shiyanova, Valitova, Munasypov, Kayashev, & Hardina, 2014).

This mechanism will make it possible to properly integrate the philosophy of lean production into the business processes of enterprises, taking into account the policy of Russian companies, the features of service companies with the production process (Vanchukhina, Leybert, Khalikova, & Luneva, 2018). Taking into account all the difficulties associated with the effective implementation of the concept, the author proposes an algorithm for determining the mutual impact of losses on each business process, which includes: the creation of loss chains, ranking them according to the degree of influence on the final effect. This will determine the business processes where it is necessary to implement lean production and will make it effective.

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## THEORY AND PRACTICE OF IPO BY RUSSIAN BANKS

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### *Abstract*

Under growing globalization and capital mobility, the funding method through entering the public market becomes relevant, which makes it possible to realize the potential of the company when it reaches a sufficiently high level of its own development. However, before solving the issue of its own shares, the company must assess the potential to raise funds. The need for these resources does not always mean that IPO is the right decision. The main goal of the initial public offering process is to make a profit. For any IPO transaction in the financial market to become successful, it is necessary to clearly understand the goals of its implementation, make the right choice of the underwriter investment bank, the method of pricing securities, and correctly evaluate investment demand. IPO issues and the evaluation of this process efficiency resulting from its analysis are to be studied. Recent studies have been conducted mainly for foreign and developed countries. The issue of analyzing the IPO market, and in particular commercial banks, which are most in need of additional financial resources, has been examined extremely superficially. This study focuses on a comparative analysis of the advantages of this financial instrument in comparison with other funding methods and assesses the possibilities for Russian commercial banks to offer securities on foreign exchange platforms. The study is very timely, since there is a tendency to renew the issue of shares by Russian companies.

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**Keywords:** Initial public offering (IPO), stocks, commercial banks, stock exchanges, underwriting.



## **1. Introduction**

The growing competition in the banking services market forcing these services to use digital technologies, which leads to the expanded range of banking products, and there is a need for new sources of financing of lending activities. Alternative ways of attracting financial opportunities, allowing to increase, for example, liquidity indicators, occupy an increasingly significant place in the list of tools and mechanisms for attracting additional funding at the present stage (Lu & Samdani, 2019; Morricone, Munari, Oriani, & de Rassenfosse, 2017). One of the positive ways of attracting additional investments that have been successful is the initial public offer of securities (IPO). Using this mechanism, a commercial bank increases the level of its own financial resources, becomes more prestigious, gaining confidence in the financial market (Westfall & Omer, 2018).

## **2. Problem Statement**

Unfortunately, the mechanism of raising capital through IPOs on the open market in Russia is not used by commercial banks in such a large scale in comparison with developed countries. At the end of 2018, there was no a single IPO on the Moscow Exchange. Banks most often resort to using standard funding tools such as, for example, interbank lending.

## **3. Research Questions**

The research questions involve solving the following problems. At the initial stage of the study, it is required to tackle the causes and risks due to which Russian issuers are not offered on exchange platforms. Particular attention should be paid to determining how effective IPO is for credit organizations. In the final part of the study, it is necessary to find out how the costs of this process are related to the benefits of its implementation.

## **4. Purpose of the Study**

Since IPO is a complex multifactor process, in which the company faces additional time and material costs, it can be concluded that not every IPO can be successful (Chemmanur & Yan, 2017; Chourou, Saadi, & Zhu, 2018). Therefore, the purpose of the study is to assess the influence of IPOs of a commercial bank on its financial performance. Achieving this goal will help to identify the economic nature of IPOs, to carry out a comprehensive analysis of the benefits of this process, explaining the reasons for choosing this source of attracting investments, to study the experience of Russian companies in conducting IPOs at different exchange platforms.

## **5. Research Methods**

The methodological basis of the study was classical tools of formal logic: analysis, synthesis, induction, deduction, abstraction, comparison, which allowed revealing the theoretical aspects of IPOs. Among the widely used methods, we can distinguish mathematical, statistical and graphical methods that

were used to determine the development trend and dynamics of the volume of the Russian IPO market. They have ensured the complexity of scientific research and the reliability of conclusions.

## 6. Findings

An analysis of the economic literature led to the conclusion that researchers have no common understanding of IPOs and there are several interpretations of this process. For example, the American stock market regulator Commission United States Securities and Exchange (SEC) and NASDAQ, the largest stock exchange, define the IPO procedure as a mechanism for the company to initially sell its shares to the public. The World Federation of Exchanges (WFE) gives a broader definition, emphasizing that IPO is not just an initial public offering of a company's stock to a wide range of investors, but it also involves listing and starting trading on the stock exchange.

The initial public offering of the company's shares to a wide range of investors, associated with listing of securities and starting trading on the stock exchange, is one of the common definitions that reveal the essence of the IPO process (Santos, 2017).

In Russian law, the definition of IPO is very vague and very superficial. According to the Federal law "On the securities market" of 22.04.1996 N 39-FZ, the following concepts exist that are close to international IPO definitions:

- Stock issue – the total of all securities of one issuer that provide the same amount of rights to their owners and have the same face interest rate in cases where the presence of face interest rate is provided for by the legislation of the Russian Federation;
- Public offering – public securities offering, including IPOs at organized tenders. IPOS are not for qualified investors at organized tenders.

Summarizing the definitions proposed in the law, we can conclude that in Russian law primary and secondary public offerings are not differentiated. Although it becomes quite obvious that the economic essence of IPO is the process of converting the issuer from a private closed company to an open public at the time when he first offers his shares to the unlimited number of investors.

Companies are forced to attract various instruments to increase their equity due to faltering economy. However, for example, they turn to bank loans and debt securities when it is necessary to cover only current expenses, while public offering is used as a way to generate capital, which marks a transition to a qualitatively new level of the company's development, despite its time-taking process (Boulton & Campbell, 2016).

Comparing various sources of financing companies, it becomes necessary to identify the advantages and disadvantages of IPOs by the company. The main advantage is the attraction of long-term capital, which can be used for any company needs: financing and R&D, acquisition or modernization of existing facilities, repayment of credit debt and others. The choice of IPO by companies is important, as future investors should know the uses of funds provided to the issuer.

It is also worth considering the enormous time costs and financial investments that are accompanied by the main risk - attracting insufficient funds to achieve the issuer's goal (Thanh, 2019). In this regard, it may be worth thinking about providing protection through hedging, insurance contracts and more.

Thus, the idea of IPO should be clearly understood and calculated to the smallest detail and various nuances by the company's management. And there should be careful planning of management.



As you know, the process of obtaining a public status by a company is long, having various goals, as well as implying not only IPO, but also time-taking preparation before going public: the choice of the main “assistant” - an investment bank-underwriter, the method of pricing securities attracting a wide range of investors (Vithanage, Neupane, & Chung, 2016).

Trying to assess the influence of factors restraining the development of the IPO market in our country, we have studied in detail 9 IPO transactions of Russian commercial banks, which have been offering on exchange platforms since 2007. The most striking and recent examples of effective public offering were Tinkoff Bank in 2013 and MOSCOW CREDIT BANK in 2015.

To evaluate the results of the bank’s IPO, we need to analyze the financial performance of a credit institution. This process is quite time-consuming, since it involves assessing not only the financial condition of the company, but also the results of its financial and economic activities. A qualitatively conducted analysis can allow you to see the reserves of growth in value, increase the efficiency of the banking structure.

The analysis showed that the operational efficiency of Russian issuers in the context of selected indicators significantly increases in a year after IPO, and the maximum return is shown by indicators of return on assets. A positive relationship was found between the value of all performance indicators of the company in the year preceding IPO and their dynamics in subsequent years. Companies that have had IPO only in local shares demonstrate more confident growth in financial indicators in the first year after IPO than issuers with a foreign or double IPO. IPO cannot be considered as a way to solve the financial problems of a bank; it is just a procedure for obtaining additional funding. Share premium can be increased if a credit institution can successfully reinvest it.

In general, as can be seen from financial reporting indicators, estimated indicators, as well as data taken from open sources, the indicators of the studied commercial banks improved significantly after IPOs, which allows us to conclude that IPO, despite its high cost, generally brings more pros than cons. Factors holding back the development of the Russian IPO market are not so much internal as external. These include the underdevelopment of the Russian stock market, poor financial literacy of the population, the ineffective system of property protection, etc.

The IPO market in Russia has been developing for about twenty-five years. Since the beginning of this century, Russian companies have had about 150 IPOs, a significant part of which have chosen IPOs abroad. Choosing an exchange platform for the first public offering of your shares and raising funds is not an easy task. Some prefer large-volume external capital markets, which complicate the IPO process and require large financial costs, while others rely on their home, domestic market with a less developed IPO system and less capital to attract (Table 01).

**Table 01.** Comparison of the main costs of IPO on Russian and foreign sites

Costs	Russian sites	Foreign sites
Underwriter services	Up to 1-3%	Up to 7-9%
Taxes	0,2%	-
Commission costs	Up to 10 thousand dollars	Up to 1-2%
PR-campaign	10-15 thousand dollars	From 500 thousand to 1 million dollars
Total (% of issuing volumes)	2-4%	5-10%

Source: authors.

Entering a foreign exchange platform, companies seek to simultaneously attract the largest possible amount of financial resources and increase the organization's reputation to domestic investors (Jeppsson, 2018).

The most popular among Russian issuers is LSE - 53 Russian companies have held IPOs on London Stock Exchange (LSE) and on the Alternative Investment Market on LSE's AIM since 2000. This figure does not take into account the practice of double offering, when companies simultaneously issue shares on exchanges of different countries. The largest number of IPOs (31 transactions) was in 2007: Russian companies actually became favorites on LSE - on the main platform, about 60% of financial resources raised by Russian issuers. Since 2000, 18 Russian companies have doubled their shares, and all of them preferred British issuing platforms. The US sites are the second most popular platform among Russian issuers - 8 IPOs have been on ADRs on the NYSE and NASDAQ since 2000.

As for possible results on the Russian IPO market in 2020 as a whole, the following can be noted: more than 10 Russian companies are preparing for IPOs, and under favorable conditions a number of transactions can be expected by the end of 2019.

After reviewing the dynamics of the IPO market of Russian companies, it was noted: in Russian practice, the access to the stock exchange of small, developing companies is not widespread: unlike Western companies, in Russia IPOs are at a "mature age". In addition, companies prefer double listing - traditionally offer shares in London and the Moscow Exchange.

## 7. Conclusion

Numerous studies have found that there are few IPOs in countries with underdeveloped stock markets (Russia among these countries). This may be due to the fact that IPO creates a class of shareholders who are in a minority position in comparison with shareholders who have been already in the company before becoming public. The way minority shareholders are protected is determined by the legal and political situation in a particular country. Therefore, before choosing the exchange on which companies offer securities, it is important to take into account the situation in the country in which the specific exchange is located.

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