

Innovative Strategy for Increasing Competitiveness in Organizational Structures of Industrial Enterprises

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ABSTRACT

The paper is devoted to the relevant topic of choosing a strategy to improve the competitiveness of industrial enterprises organizational structures, which allows the company to take the most advantageous position in the market aimed at identifying, forming, and maximal satisfying the consumers' needs in order to increase profits. The paper purpose is to approve an innovative strategy to increase the competitiveness of manufacturing enterprises aimed at improving the efficiency of production processes organization with applying innovative energy and resource-saving technologies and minimizing waste generation. The leading method used in this study is simulation method that represents this study as a purposeful and organized process to increase the competitiveness of industrial enterprises. The paper scientifically substantiates a set of recommendations on the innovative development strategies selecting and enterprises organizational structures planning expediency. The research is based on the co-competition theory. An example of co-competition technological model application, in the form of shared profit sharing strategy, is proposed for consideration for industrial complex enterprises in the Republic of Tatarstan as a promising tool for increasing the enterprises competitiveness. The study results make it possible better and more targeting to regulate industrial enterprises organizational structures competitiveness through the management innovative forms use and can be used in the framework of sector programs developed by ministries and departments aimed at the economy and industry strategic management.

Keywords: competitiveness, production organization, shared profit sharing, industrial enterprises, efficiency, innovative management strategies

INTRODUCTION

The competition development is currently a strategic priority for the Russian national economy development. The competition is assumed to be one of the objective patterns of enterprises functioning in the management market model and is a fairly universal mechanism that ensures an increase in the industrial sector efficiency. The market system generates competition itself, by its nature, as a result of which there is reason to consider the principle of competition as immanent to such a system. Competition determines the high quality parameters of the products and services produced. The advantages are obvious and they are theoretically understood by all. However,

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unfortunately, we must admit that the competition value is not yet sufficiently fixed in our Russian society. The problem of industrial enterprises competitiveness increasing is currently one of the most urgent fundamental and applied research tasks in the economy.

The study relevance is due to the current trends in increasing the competitiveness of industrial enterprises organizational structures, which assume that production innovative development can be ensured by preserving the natural and ecological environment by searching for qualitatively new revolutionary opportunities associated with the use of resource-saving and energy-saving technologies, as well as alternative ways of their joint introduction into productive activity, favorable conditions creation for cooperation development. A large number of studies have been devoted to resource-saving technologies introduction need to improve the industrial enterprises competitiveness [1, 2, 3, 4]. It is necessary to develop consistently methods and tools for managing the competitiveness of industrial enterprises organizational structures, achieving adequate economic estimates in real consumption of resources various types [5, 6, 7, 8]. However, the model of an independent enterprise behavior in a free (competitive) market presupposes that, in order to achieve its goals when interacting with the external environment, it can be in opposition (struggle) to other agents of the market, and in alliances (alliances). Neither the developer nor owner position provided the world's most successful corporations' current level of development. In this case, commercial success is achieved through a cooperative mechanism. By world business universal acknowledgment, the concept of cooperation belongs to the Japanese holding companies. Developed inter-firm relations within large commercial groups make it unnecessary to legalize the ownership right.

The need for suppliers to interact with existing supply chains in a less confrontational manner and with a focus on common success was defined as a "partnership". When this approach advantages became obvious, to the relations which acquired strategic nature the term "co-competition" - the actual reserve of industrial enterprises competitiveness innovative development began to be applied [9, 10, 11].

METHODOLOGICAL FRAMEWORK

The study methodological basis is the co-competition theory, under which the innovative projects implementation is proposed to understand which is based on the emergence of competitors' incentives for an innovative product joint production (order for production) at different phases of the life cycle of an innovative product. At the same time, some enterprises purposefully combine their efforts to produce innovations (direct co-competition); others independently generate demand for innovation, developing an appropriate market sector (indirect co-competition). The study approves the model of direct co-computation that is the share sharing strategy using for industrial enterprises. A study of the category "competition" showed that organizations that achieve competitive advantages through innovation have better conditions for products production and sale, which allows them to take the best positions in the market. However, an organization that wants to achieve long-term success should not be limited to competition, and the idea of cooperation takes on a new form. This approach enriches the management technologies theoretical basis to stimulate the industrial systems competitiveness.

The leading method used in this study is the simulation method that represents this study as a purposeful and organized process to increase the industrial enterprises competitiveness. With the simulation help, the algorithm for implementing the share sharing strategy is described, using the example of industrial enterprises in the Republic of Tatarstan.

Using the economic-mathematical analysis, multidimensional statistical analysis and forecasting methods the activities' efficiency evaluation of JSC "CMA" and LLC "Protect" enterprises in 2008-2015 is given, the total investment costs' efficiency assessment in a joint distribution center creation as part of the equity sharing strategy is carried out.

RESULTS

Current State of the Industrial Sector in the Republic of Tatarstan

The Tatarstan Republic is traditionally one of the leading regions in the Russian Federation in terms of key macroeconomic indicators. The industrial sector development has a decisive influence on the economy development trends as a whole, since it forms more than 40% of the gross regional product in the Tatarstan Republic.

In 2016, the industrial production positive dynamics remained, while there was an acceleration of growth rates relative to previous years. At the end of 2016, the industrial production index was 103.6% to the level of 2015, the volume of shipped products - 1 trillion 966.5 billion rubles. In the minerals extraction, the production index was 104.3% to the level of 2015, in manufacturing - 102.9%, in electricity, gas and water production and distribution - 105.8%. In manufacturing, growth was observed in chemical production (102.8% against the level of 2015), rubber

and plastic products production (105.8%), petroleum products production (100.3%), vehicles and equipment production (104.3%), electrical equipment, electronic and optical equipment production (118.8%), metallurgical production (100.8%), food industry (105.3%), pulp and paper production (124.9%), wood processing and production (129.1%), textile and clothing production (104.9%), leather, leather goods and footwear production (115.9%).

At the same time, negative dynamics was observed in machinery and equipment production (97.2% to the level of 2015), other non-metallic mineral products production (84.0%).

At the end of 2016, the production of mineral and chemical fertilizers increased 2 times to the level of 2015, trucks - by 1.3 times, cars - by 14.5%, refrigerators and household freezers - by 24.3%, electricity - by 4.4%, diesel fuel - 10.8%, straight-run gasoline - 9.9%, ethylene polymers - 4.3%, synthetic rubbers - 3.7%. Oil production increased by 4.3%. At the same time, there was a decrease in the volume of fuel oil production by 24.3% against the level of 2015, gasoline - by 12.3%, steel pipes by 7.6%, tires and rubber chambers - by 6.6%.

In the industrial structure, the processing industries share increased by 0.5 percentage points to the level of 2015 and amounted to 70.9%. At the same time, the mineral extraction share decreased by 0.4 percentage points and amounted to 22.5%, electricity, gas and water production and distribution - by 0.1 percentage points (6.6%).

The further diversification of the industry structure shows the growth in the machine building share which increased by 0.9 percentage points (from 20.2% in 2015 to 21.1% in 2016), the food industry by 0.8 percentage points (from 8.5% to 9.3%), 0.2 percentage points of chemistry (from 14% to 14.2%) and rubber and plastic products production (from 4.1% to 4.3%).

Strategy for Enhancing the Competitiveness of Industrial Enterprises Organizational Structures

In modern market conditions, the industrial enterprises competitiveness largely depends on the relationship between products suppliers and consumers. All relations between suppliers and consumers of products can be conditionally divided into 3 types, a brief description of which is presented below.

Traditional supply relations:

- payment structure - "rubles per volume" (the larger the volume, the higher the price);
- types of services - delivery "just in time";
- solving problems - based on threats (competition).

Limited management:

- payment structure - "rubles per volume", service charge, management fee;
- types of services - logistics services (delivery, storage), services to ensure compliance with regulatory and legislative acts on ecology, health and life safety;
- solving problems - choosing a supplier with experience, a quick joint solution of problems.

Management based on shared profit sharing:

- payment structure - fixed payment, unit price, share in profit;
- types of services - cross-functional integration;
- solving problems - proactive joint solution of problems.

For enterprise successful performance the choice of a supply chain management strategy is important. All strategies for companies supply chain production and cooperation organizing are classified according to three conditions: the structure of payment; types of related services; problem solving.

The essence of management based on the shared profit sharing is as follows: the suppliers of products are given a direct share financial participation in the profit from the efficiency increase of using the products at the consumer enterprise. Based on the strategy of shared profit sharing, we can identify the relationship main characteristics in the supply chains management:

- 1) the consumer no longer purchases only products, the products are owned by the supplier until they are used in the production process at the consumer enterprise;
- 2) the supplier receives a fixed payment (per month or unit of output) in exchange for the product characteristics provision (quality indicators);
- 3) the supplier receives profit by reducing the use of products volume and their costs, and not at the expense of products sale;
- 4) the supplier provides product management at the place of its use, including compliance with labor protection requirements, extended logistics services and application services on the product use.

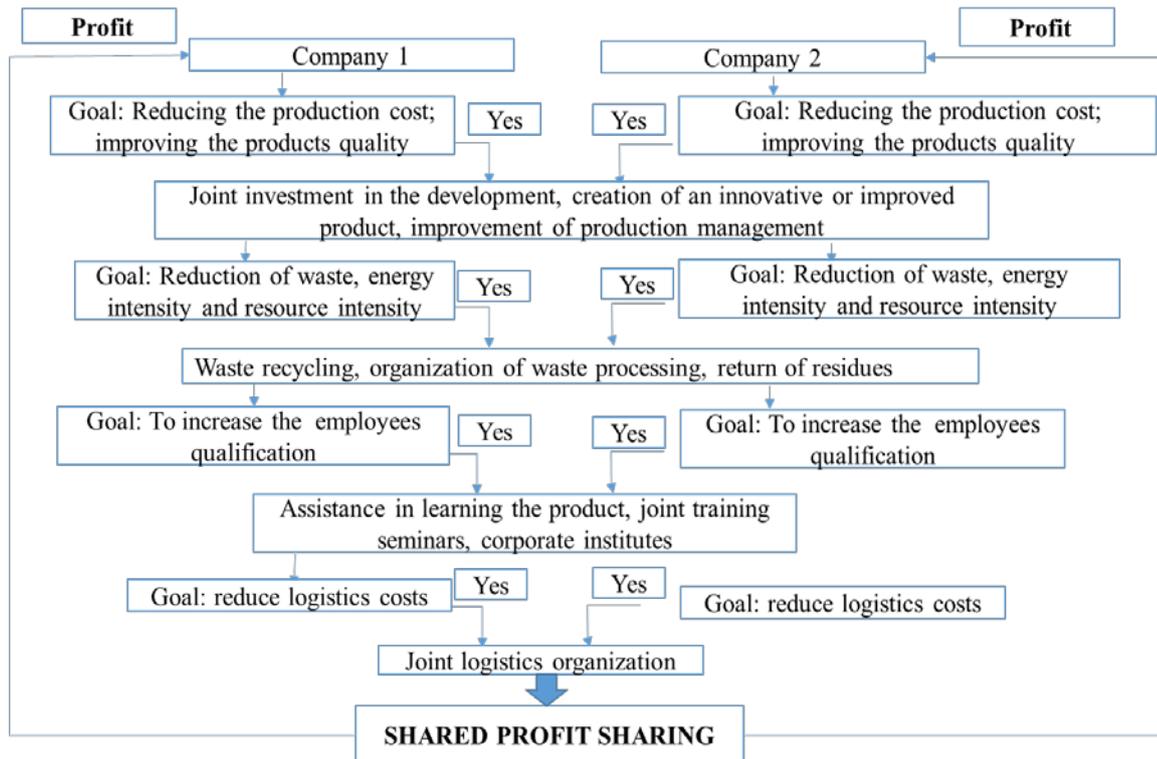


Figure 1. Algorithm for introducing enterprises shared profit sharing model

Figure 1 describes the algorithm for introducing a model of enterprises shared profit sharing.

Enterprises are invited to finance jointly activities aimed at increasing their activities efficiency, and distribute the obtained profits among the participants. The algorithm for implementing the shared profit sharing model includes the following steps:

1. In order to reduce the production cost and to improve its quality, producers and consumers are encouraged to invest jointly in: developing and creating an innovative or improved product; innovations in the field of production management. The expected effect:
 - increase of innovative products production to 20%;
 - production cost reduction up to 30%;
 - increase in sales up to 30%.
2. In order to reduce energy and resource intensity, reduce production waste, improve the production ecologization, it is recommended to invest jointly in the organization and recycling of industrial waste, secondary waste processing. The expected effect:
 - reduction of energy and resource intensity up to 20%;
 - reduction of waste production to 100%;
 - negative impact reduction on the environment up to 50%.
3. In order to improve the employees' skills, it is recommended to present a new product, conduct joint training seminars, and participate in corporate universities. The expected effect:
 - Decrease in rejects in production up to 30%;
 - reduction of accidents and injuries at work to 50%;
 - increase of employees professional competence to 20%.
4. To reduce logistics costs, the company is recommended to organize joint logistics processes. The expected effect:
 - reduction of costs for products transportation up to 50%;
 - reduction of storage costs up to 30%;
 - branching of sales channels up to 30%
 - sales markets expansion.

Approbation of the Share Sharing Strategy for the Industrial Complex Enterprises in the Tatarstan Republic

Let's consider an example of profit share sharing strategy introduction for an industrial complex enterprises of JSC "CMA" and LLC "Protect" in Republic Tatarstan.

To assess the organization effectiveness of production and the supply chain, it is necessary to carry out a diagnosis of JSC "CMA" activities. The Company's full name: Joint-stock company "Centromontazhvatomika". Main state registration number 1021603269148, was registered by the state registration chamber with the Ministry of Justice of the Tatarstan Republic on June 06, 2002.

Kinds of activity: manufacture of electro-installation works; services provision for installation, repair and maintenance of other electrical equipment; production of building metal products. The average number of employees is 103 people, including 10 women.

Let's consider the gain dynamics from the goods sale, production, works, and services of joint - stock company "CMA". In 2015, the company obtained 97,888 thousand rubles from the goods sale, products, works, services, which was 48% of the level of 2014. The maximum revenue in the enterprise was registered in 2014 - 203 641 thousand rubles, the minimum value in 2009 - 46 331 thousand rubles, which is caused by the crisis state of the country's economy.

To assess the enterprise's activities efficiency it is important to consider the specific weight of the sold goods', products', works', services' cost price in revenue. In 2015, the cost of goods sold, products, works, services of JSC "CMA" amounted to 59,237 thousand rubles, which is 59% below the level of 2014 (143,586 thousand rubles). The cost price highest share (43,992 thousand rubles) in revenues from the goods sale, products, works, services (46,331 thousand rubles) was observed in 2009 and amounted to 95%, this negative factor caused the enterprise loss in the period under review. The enterprise income is determined by acts of CC-3 (capital construction) and acts of work performed. Profit from sales for 2015 amounted to 3045 thousand rubles or 17% of the level of 2014. The enterprise maximum profit in the period under review was observed in 2014 - 18043 thousand rubles, in 2009 the enterprise was unprofitable (-7,885 thousand rubles). However, the enterprise maximum profitability (the organization financial performance indicator, showing what part of the organization revenue is the profit) was observed in 2010, when the share of profits in the proceeds from the products sale, works and services was 17.8%.

In 2014-2015 years the joint-stock company was engaged in the installation of automation equipment at the facilities of Kazan, Nizhnekamsk, Perm, "Kazanorgsintez", OJSC "SPP" (Sterlitamak Petrochemical Plant), FSE (Federal state-owned enterprise) "Kazan State Powder Plant", PJSC Nizhnekamskneftekhim, PJSC Tatneft, OJSC "Taif-NK".

The main suppliers of the products are CJSC (Closed Joint-Stock Company) Steel-industrial company (Rolled Metal Products), LLC Prommash (electro-technical materials), LLC "ETM" (electro-technical materials), LLC "Protect" (cable products), etc.

Let's carry out a diagnosis of the enterprise LLC "Protect" activities' effectiveness - the main supplier of cable products for JSC "CMA". LLC "Protect" is registered at the address: Kazan, Kommunarov Str., 2, ap.311, 420034. The company main activity is Non-specialized wholesale trade. Also, "Protect" LLC works in 22 other directions. The amount of the authorized capital is 10,000 rubles.

The LLC "Protect" took part in 218 trades and won 218 of them. The enterprise carries out its activity from 02.06.2003.

Let's consider the proceeds dynamics from the LLC "Protect" goods sale, products, works, and services. In 2015, the enterprise received 42,707 thousand rubles from the goods sale, products, works and services, which was 86% of the level of 2014. The maximum revenue in the enterprise was registered in 2014 - 49 238 thousand rubles, the minimum value in 2008 - 10 780 thousand rubles, which was due to the crisis state of the country's economy.

In 2015, the cost of goods sold, products, works, services of LLC "Protect" amounted to 41,626 thousand rubles, which was 14% lower than the level of 2014 (47,989 thousand rubles). Throughout 2008-2015 there was the cost price high specific weight in the proceeds from the goods sale, products, works and services and was approximately 97% annually, this negative factor caused the enterprise low profitability.

Profit from sales for 2015 amounted to 521 thousand rubles or 62% of the level of 2014. The enterprise maximum profit in the period under review was observed in 2014 - 835 thousand rubles, in 2008 there was a minimum profit at the enterprise and amounted to 43 thousand rubles. Therefore, in 2008-2015, the enterprise low profitability was observed. In 2015, the share of profits from sales of products, works and services was 1.2%, which was 0.5% below the level of 2014, when the enterprise highest profitability in the period under review was 1.7%

The main suppliers of the cable products of LLC "Protekt" are: CJSC SPE (Scientific Production Enterprise) "GERDA", LLC "SPECVYAZMONTAZH", LLC "Neftekhimsnab", Cable Holding Alliance, SPE Speckabel, CJSC Rezhevskiy Cable Plant, LLC "Cable Factory Kabex", LLC "LAPP RUSSIA"

The main consumers of LLC "Protect" cable products are: JSC CMA, JSC ChMA (CHELNYMONTAZHAVTOMATIKA), NE (Nizhnekamsk enterprise) "Centromontazhavtomatika", TAIF-ORC, PJSC "Kazanorgsintez", LLC SINTEGRA, LLC Specavtomatika-PC LLC, LLC "TD (Trade House) INVENT", LLC "(PSC) Private security company Kennard", LLC SPC Scientific and production company "Engine".

Diagnostics of indicators performance of LLC "Protect" and JSC CMA in 2008-2015 made it possible to identify high production costs, and, consequently, low profitability of enterprises activity.

The analysis of cooperation between the enterprises of JSC "CMA" and LLC "Protect" showed that they are at the level of traditional forms of supply relations, since relations are formed by using the bidding procedure to select counterparties. Let's consider the problems of using this form of choice for industrial complex enterprises.

Currently, none of the large enterprises can do without a bidding procedure to select their suppliers, since trades reduce the risks when making deals. Bidding is a complex, but at the same time the most effective way of concluding a contract.

The Federal Law No. 44-FL adoption "On the contract system in the procurement of goods, works, and services to ensure state and municipal needs" is a serious lever in the development of the public procurement system. However, for industrial enterprises, this law and the auctions holding became a serious problem of their activities and existence.

The main objectives of the Law are finance effective spending, competition development, orders transparency, corruption and fraud reduction in concluding contracts. At the same time, budgetary funds effective use is achieved due to the fact that industrial enterprises, in order to receive an order, set a minimum price. Thus, it is possible to win only by lowering the price to the level at which it is already unprofitable to work. As a result, businesses are forced to work at a loss or leave the order unfulfilled. Also, collusion cases between bidders are frequent, when the contract is concluded at the initial high price, but part of the money is paid to the rest participants by the winner. If there is no collusion between the participants, a biased price reduction occurs, which in turn leads to a quality decrease in the work performed. The budgetary funds saving exist, but it is inefficient. The competition development, as one of the purposes of the Law, also occurs, but it is unfair here.

Proceeding from the difficulties that legislation entails in the cooperation field, the strategy of shared profit sharing is of particular interest.

It is appropriate to consider the practice of applying this strategy to enterprises examples JSC "CMA" and LLC "Protect". LLC "Protect" enterprise activities analysis revealed that the enterprise does not have storage facilities, since it operates under an order. This entails additional costs for cable transportation (increase in cost due to single deliveries), some delays on the suppliers' part, in addition wholesale purchases of cable could give additional discounts up to 20%.

Proposed measures to implement the strategy of shared profit sharing for JSC "CMA" and LLC "Protect" enterprises:

- co-financing and a distribution center establishment;
- joint purchase of equipment for cable cutting;
- joint purchase of equipment for cable remains processing;
- joint organization of staff upgrading.

The effect of the proposed activities implementing:

- reduction of production cost up to 20% (due to wholesale purchases);
- reduction of transportation costs to 50% (through wholesale purchases);
- reduction of waste to 100%;
- The staff upgrading to 100%.

It is necessary to calculate the costs of the distribution center for JSC "CMA" and LLC "Protect". Expenses for non-current assets in 2017-2018 amount to 2 540 thousand rubles. Including the cost of renting premises for production at the address: Kazan, Sovetskiy district, Adela Kutuy St. 161, costing 66 thousand rubles a month, an area of 324 m². This is a production and storage room in a guarded fenced area, the ceiling height of which is 8m, gate height - 3m, it is heated, block, with crane-beam for 3t, video surveillance in the territory, good access roads and office facilities. In addition, within the framework of the proposed measures, it is planned to purchase a machine for winding the cable UPK-22PRG with AKU-1100 for 440 thousand rubles.

Modern innovative technologies introduced in industrial enterprises should be environmentally friendly and energy and resource-saving ones. The most environmentally friendly and cost-effective way of processing the cable is to process the current conductors using a special installation. The automation of the cable waste processing with the help of compact Guidetti rigs (worth 330,000 rubles) will increase the processing shop speed, facilitate the workers hard work and do no harm to the environment.

The next important element of the company's costs is the cost of employees' salaries. The main structural subdivisions of the distribution center being created are: the storage area, production areas and workshops, equipped with equipment for cutting the cable and equipment for processing the remaining cable.

Let's consider the total number of employees and the distribution center fund in 2017-2020.

The payroll of 6 workers was 378 thousand rubles a quarterly, 1 512 thousand rubles per year and 3 024 thousand rubles in 2017-2018, including accrued insurance premiums in the amount of 1,028 thousand rubles. Thus, the total cost of salary for employees, including insurance premiums, is 4 052 thousand rubles.

The volume of the current project costs for the period under review will be 64,402 thousand rubles, and includes the costs of repair and maintenance of equipment, depreciation, marketing costs, fuel and lubricants, banking services, utilities, communications, purchase of stationery and etc.

Thus, the cost of starting a distribution center and manufacturing at the total costs necessary to replace this facility, taking into account the development of new technologies, allowed us to estimate the total cost of the project (investment costs for the settlement period), which amounted to 8 million rubles.

Accumulated cash flow during the whole life cycle of the project, taking into account the sale of cable products in 2017-2018 will be 80 000 thousand rubles. Having considered the profitability of the project, we calculate the total need for investment. In 2017-2018 years the expected volume of cable products potential sale proceeds will amount to 67,797 thousand rubles. In 2017-2018 years the expected volume of net profit from the cable products sale will be 9,834 thousand rubles. In 2017-2018 years the expected EBITDA from the cable products sale will be 12,571 thousand rubles.

Let's consider the indicators efficiency of cable production total investment costs taking into account the discount rate assumed equal to 20%.

In this project, the net present value (NPV) is equal to 1,774 thousand rubles, accordingly the project is considered beneficial for the investor. The internal rate of return (IRR) of the distribution center forming was 22.2% (nominal - taking into account inflation), i.e. the received internal rate of return is higher than the discount rate assumed to be 20%, which indicates that the project is profitable for investment. The rate of profitability income on discounted costs (PI) is 1.54 times. Simple payback period of the project was 1.47 years, discounted payback period (PBP) -1.54 years.

DISCUSSIONS

To determine the role and importance of competition in the industrial enterprises activities, a retrospective analysis of theoretical and empirical approaches was conducted that characterizes the real contribution of competition to the economic development of economic entities. It should be noted that competition is one of the mechanisms of a market economy that has been thoroughly investigated theoretically. However, the results of real empirical studies often contradict theoretical postulates and assumptions [11, 12, 13, 14, 15, 16, 17].

The use of competition as a basic element of economic activity organization in industry must have clear quantitative goals, expressed in the system efficiency and effectiveness increase, which is possible on the basis of the competitive environment creation and constant modernization as a carrier of specific relations, stimulating: the increase in the efficiency of resource use, an increase in the level of the nation's well-being; growth in the volume of industrial products most important types production; ensuring economic efficiency and competitiveness of the competitive environment agents; introduction of innovations and permanent development of business models of industrial enterprises on the basis of search competition. The experience of economists which can be applied to solve this problem is useful [4, 18, 19, 20, 21, 22].

At the same time, in the presence of theoretical and methodological material's large amount, a unified methodology for increasing the competitiveness of industrial enterprises, formalized quantitative approaches combining the latest achievements of modern management science and taking into account the essential specifics is still not developed.

CONCLUSION

The paper gives an assessment of the current state of the manufacturing sector competitiveness in the Republic of Tatarstan, which indicates that in recent years positive dynamics of industrial production growth, shipment of industrial products, and labor productivity growth have been noted.

The shared profit sharing model choice is scientifically justified as a promising direction for increasing the efficiency of enterprises activities and competitiveness. The algorithm for implementing the share sharing strategy for industrial enterprises is described, which allows to reduce the production cost, reduce the production energy and resource intensity, minimize waste, improve the production ecologization, upgrade the employees' skills, and

reduce logistics costs and etc. In the framework of the share sharing strategy for JSC “CMA” and LLC “Protect”, a joint creation of a distribution center was proposed. In this project, the net present value (NPV) is equal to 1,774 thousand rubles, accordingly the project is considered beneficial for the investor. The internal rate of return (IRR) of the distribution center was 22.2% (nominal - taking into account inflation), i.e. the obtained rate of profitability is higher than the discount rate accepted equal to 20%. The rate of profitability income on discounted costs (PI) is 1.54 times. Simple payback period of the project was 1.47 years, discounted payback period (PBP) -1.54 years. The results show that the project is profitable for investments, therefore, it can be concluded that programs to increase the enterprises competitiveness in the industrial complex based on the shared profit sharing strategy provide valuable benefits to both consumers and suppliers.

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