

VESTNIK

EVENTS
SOCIETY
ECONOMY
TECHNOLOGIES

INDUSTRY
BUSINESS
RATINGS
IDEAS

PROJECTS
FORECASTS
ANALYTICS
COMPETENCES

INDUSTRIAL POLICY 2024

HIGHER LABOR
PRODUCTIVITY IN
BASIC INDUSTRIES,
BETTER
COMPETITIVENESS
AND ENTRY INTO
FOREIGN MARKETS –
THESE ARE
STRATEGIC GOALS
OF THE INDUSTRIAL
COMPLEX
DEVELOPMENT SET
BY THE PRESIDENT
OF THE COUNTRY. IT
SHOULD BE NOTED
THAT THEY FULLY
CORRELATE WITH
OUR STRATEGIC
VISION |

20
24

...increasing p...
...Russian production f...
...the developed countries...
...in industry, figures of out...
...in various branches are 5-10...
...than those in the western countries.
Having analyzed in detail the production
facilities operating in the Kaluga Region, we
came to a conclusion that the output per
employee at new production facilities exceeds
the average regional level by more than twice.
So, we have someone to look up to |

...THESE ARE
...INDUSTRIAL POLICY
...IMPLEMENTATION STAGE WAS STARTED IN LAST DECEMBER.
...CREATED A REGIONAL CENTER OF LEAN PRODUCTION
...THESE PRODUCTION FACILITIES WERE SELECTED WHICH
...DEMONSTRATED THEIR ACTIVITY AND WISHED TO MOVE TO A TOTALLY NEW
...LEVEL OF MANAGEMENT, ENSURE A STABLE GROWTH OF PRODUCTIVITY AND
...COMPETITIVENESS |





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Kaluga Region

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FOR ECONOMIC DEVELOPMENT
OF KALUGA REGION

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Industry has been and remains the foundation of social and economic development of Kaluga Region

NLMK-Kaluga is the winner of the award "Labor Productivity: Russian Industry Leaders - 2018".

Vladimir, the branch structure of the regional industry has considerably changed in recent years. Please tell how this process is going on and what is the basis of the industrial complex today?

The mechanical engineering complex has been and remains the basis of industrial growth in Kaluga Region. Today, it is represented by both production facilities traditional for the region and new plants built by investors. The metallurgy and metal processing, food industry, production of construction materials, and pharmaceuticals play a major role. Currently, these are the branches ensuring the growth of gross product of our industry and development of the scientific area in many respects.

Certainly, with commissioning of large industrial facilities, since 2006 there are as many as 108 plants, the region's industrial complex have changed. For the years of active investments, branches appeared, which were

absolutely new for Kaluga Region. For example, car-making. For a short period of time, our region managed to grab over 11% of the Russian automotive production – this is the 3rd place among the regions. The share of car-making in the industrial production of the region continuously grows. Having started from 1% in 2007, it accounts for above 35% now. The pharmaceutical industry develops right in front of our eyes. We open the most advanced production facilities of the region. Today, we already produce over 150 medicines, and additional 25 products are being developed. We are steadily working to get a significant share in the Russian pharmaceutical market.

The IT industry, radiology medicine, chemical industry are actively developing, the production of computers, electronic and optical equipment, home appliances and TV sets grows. Even today, 100% of all Samsung TV sets and monitors sold in Russia are manufactured



Vladimir POPOV,
Deputy Governor
of Kaluga Region



Volkswagen Group Kaluga Plant – the winner of Transformer of the Year – the world's best Volkswagen plant in terms of efficiency indicators.

in Kaluga Region. Currently, more than 60% of industrial products are manufactured by plants that have been built and upgraded in the region in the recent 13 years. Production facilities of the branches, which are traditional

focused efforts to support them. For the past year, the output at plants of the defence industry amounted to RUR 55 bln – this is 7% in the total industrial production of the region. Power equipment manufactured in

In 2018, Kaluga Region reported 104.5% growth of its industrial production. This year, we observe the growth at the level of 107%.

for the region, also operate in a stable manner: power machinery engineering, rolling-stock manufacturing, and military industry. The government takes

Kaluga has been exported and successfully used in almost 40 countries of the world. Many types of manufactured railway machinery and locomotives are operated both in the Russian Federation and abroad. You can see that the industrial complex of the region is rather diversified and focused on the development of hi-tech industries. The average annual trends in the industrial production index is fixed at 106% starting from 2012. Since 2006, the production in the region grew by more than 3 times. In the recent years, Kaluga Region has been the leader among Russian regions in terms of volumes of processing productions per capita. The key indicator demonstrating better competitiveness of our industry is higher exports and increased number of exporters. For 2017, Kaluga Region was among TOP3 best regions in the Exporters of the Year federal contest, and in the last year the exports grew by almost 11%. An increase in exports is also reported for non-CIS countries that is another confirmation of our manufacturers' high competitiveness.

This means that the industry has been and remains the foundation of social and

economic development in the region. A year ago, the President of the Russian Federation announced top priorities of the country development for the next five years. Which objectives of the region's industrial complex are in line with these priorities and what will be main focus areas of the industrial policy?

Higher labor productivity in basic industries, better competitiveness and entry into foreign markets – these are strategic development goals of the industrial complex set by the President. It should be noted that they fully correlate with our strategic vision.

In 2018, Kaluga Region reported 104.5% growth of its industrial production. This year, we observe the growth at the level of 107%. This means that our industrial complex has a strong basis and a large potential for successful achievement of the national priorities.

Implementation of the Higher Labor Productivity and Employment Support national project is focused on increasing productivity indicators at Russian production facilities to the level of the developed countries. Today in the Russian industry, figures of output per employee in various branches are 5-10-fold lower than those in the western countries. Having analyzed in detail the production facilities operating in the Kaluga Region, we came to a conclusion that the output per employee at new production facilities exceeds the average regional level by more than twice. So, we have someone to look up to. Many our production facilities are leaders in their branches and Kaluga plants of international companies are leaders in their global production systems – Volkswagen, Continental, L'Oreal, Volvo, NLMK and others. They all enthusiastically share their knowledge and experience in improvement of the production culture, as higher labor productivity is the

cornerstone of the production culture. The active project implementation stage was started in last December. The region created a regional center of lean production competencies. Production facilities were selected

have to do this work at 109 plants of the region by 2024. I would add that efforts to improve production processes can be taken both using own resources and engaging external advisors. Since this year, the key

for the regional economy by 2024. It is important that the participation in this project enables companies of the region to renew from inside without significant financial costs. If changes require considerable investments,

exporters is at a rather high level. In this connection, we can say that the processes of labor productivity increase and export growth are interconnected. In the current year, conditions of governmental support

improvement programs (CCIPs). Companies, which successfully pass the qualification selection, will be provided with access to low-interest funding mechanisms. I would like to note that CCIPs are a central element

Trade of the Russian Federation will prepare a unified list of manufacturers with which CCIP implementation agreements will be signed. In addition, such contracts will become an additional advantage for companies to benefit from other support initiatives.



Our key resource and a unique advantage are clever, hardworking and talented people.

You have said that the national priorities almost fully correlate with the social and economic development strategy of Kaluga Region through 2030. Implementing its principles, the region has already managed to achieve success in many areas: increased industrial production, higher salary, investments' boost, and export buildup. It seems that Kaluga Region has inexhaustible resources and unlimited opportunities?

Actually, Kaluga Region has no resources that provide raw material regions with a high economic status. Our key resource and a unique advantage are clever, hardworking and talented people. Everything that has been created here is a result of their daily thorough work. Today, our key task is to make Kaluga Region a territory where you want to live and work. It's no coincidence that both the social and economic development area and all its priorities are grouped around people.

which demonstrated their activity and wished to move to a totally new level of management, ensure a stable growth of productivity and competitiveness. The pioneers were OJSC Kaluga Turbine Plant and JSC Kalugaputmash. Totally, we

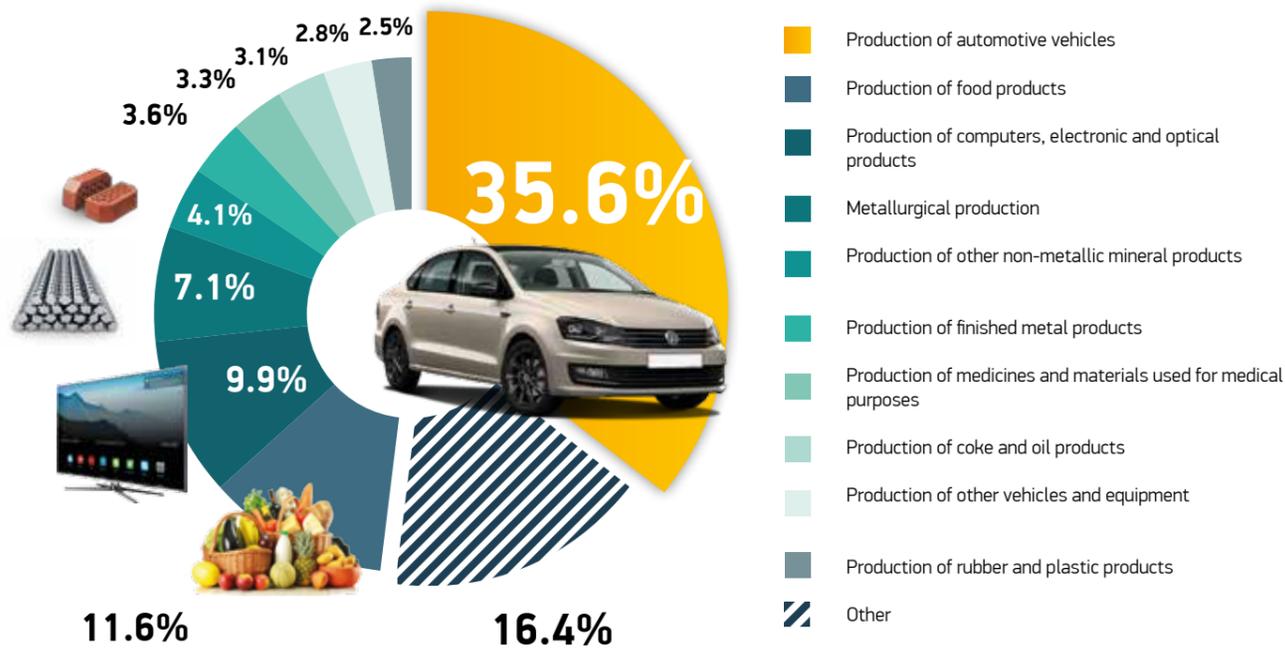
target support is provided by experts of the federal and regional centers of competencies. Our objective as governmental authorities is to involve as many companies as possible in the processes of changes to ensure a 5% productivity increase in general

companies participating in the project can use a low-interest loan of the Industry Development Fund with an interest of 1% per annum. The next strategic development area is to increase exports. I'd first say that, as a rule, the labor productivity of

to exporters change. Now, it is very important to help manufacturers to understand all new rules. For example, since April 1 the regional Ministry for Economic Development selects manufacturers implementing corporate competitiveness

of the International Cooperation and Exportation national project. In my opinion, the launch of this support program is a good basis for a long-term growth of competitive products' manufacturing. After the qualification selection, the Ministry of Industry and

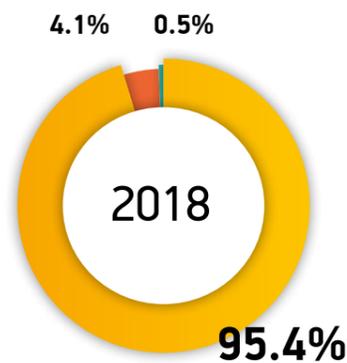
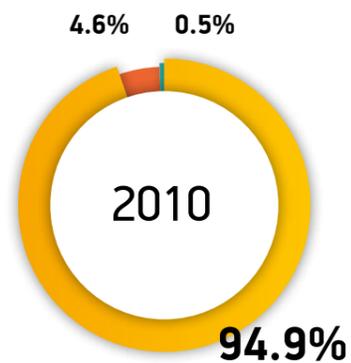
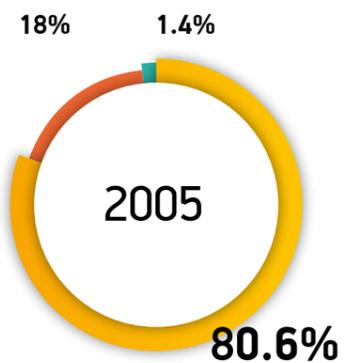
Industrial Complex Structure



3,616
production facilities operating in Kaluga Region

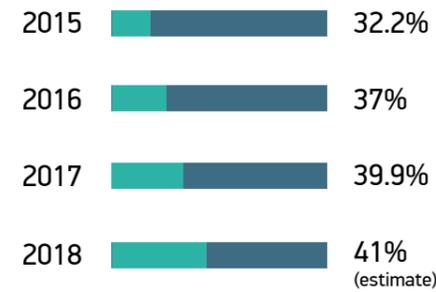
≈300
large and medium production facilities

108
industrial facilities operating since 2006



■ Processing Industry
 ■ Production and distribution of electricity, gas and water
 ■ Mining of mineral resources

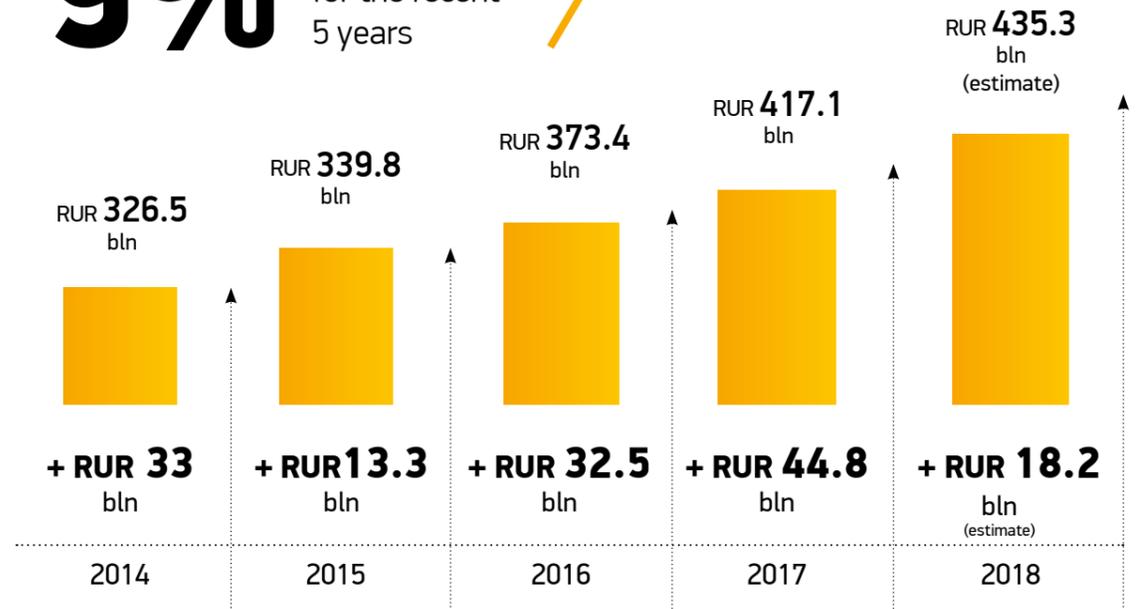
SHARE OF PROCESSING PRODUCTIONS IN GRP



>40%

of GRP are produced by the industrial sector

9% growth of GRP for the recent 5 years



1,009,400
people – population of Kaluga Region

54,408
jobs will be created under the investment agreements signed

550,000
economically active population

REGISTERED UNEMPLOYMENT LEVEL

110,000
people working at industrial facilities

0.5%
Kaluga Region

1.1%
Russian Federation

Industry. Key indicators



1ST PLACE

in the Central Federal District, 1st in the Russian Federation

for processing industry production per capita



1ST PLACE

in the Central Federal District, 10th in the Russian Federation

for the output of industrial products per capita



3RD PLACE

in the Central Federal District, 27th in the Russian Federation

for average monthly salary

RUR 37,735

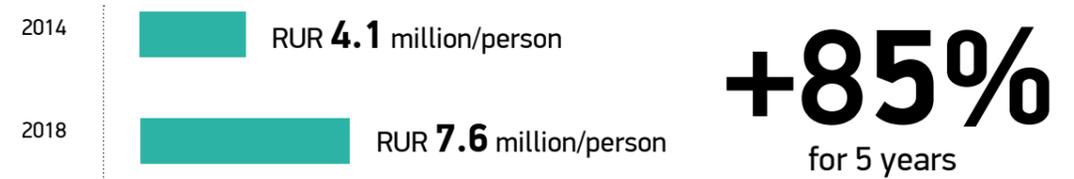
average monthly salary in Kaluga Region

RUR 44,712

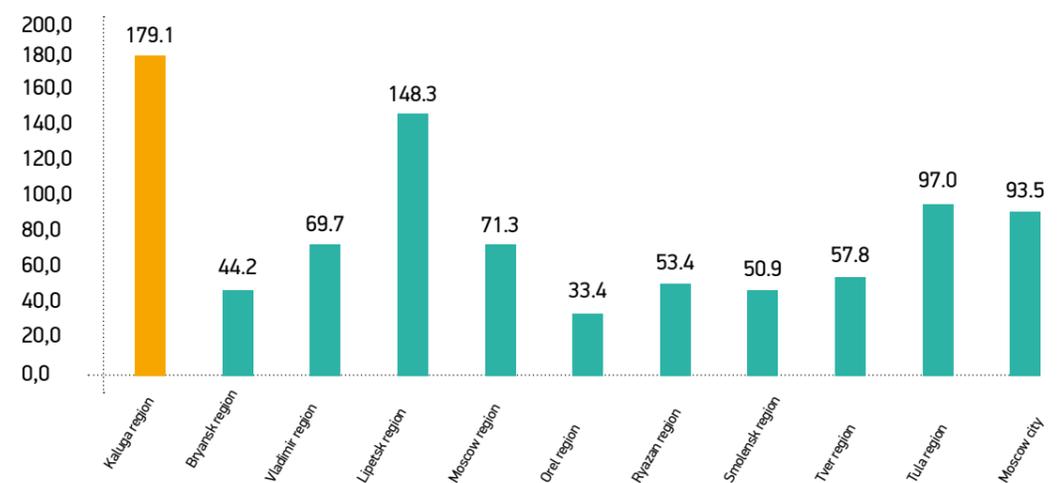
average monthly salary in the industry

	Total processing production facilities	Including	
		Investors' production facilities	SMEs
Number of industrial facilities	2,856	91	2,560
Industrial output, RUR bln	798.5	488.5	45.2
Share in the total industrial output of the region, %	100	61.2	5.7
Produced per 1 employee, RUR mln	8.5	20.2	2.6
Average headcount, persons	93,422	24,282	17,216
Average monthly salary of employees, RUR	46,522	62,586	30,591

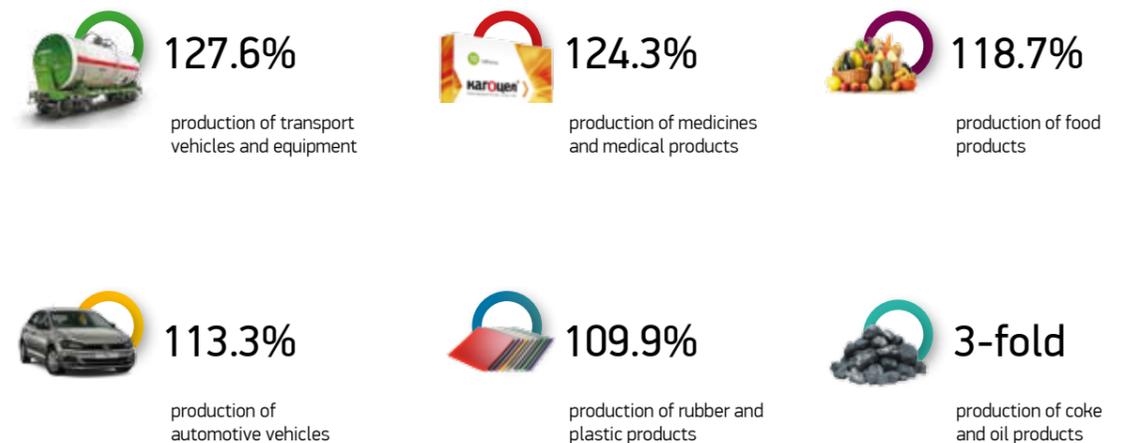
INDUSTRY LABOR PRODUCTIVITY



VOLUME OF SHIPPED PRODUCTS OF PROCESSING INDUSTRY, PER CAPITA (Q1 2019)



INDUSTRIAL PRODUCTION GROWTH, 2019



Kraftway: heading for confidence, innovations and sustainability

Today, issues of ensuring information security of critically important automated systems, data storage and infrastructural facilities are instrumental for all state authorities. The number of incidents is steadily growing: cyberterrorism, new generation viruses, and attacks on control systems of critically important facilities, destruction of digital databases, data stealing, destruction and encryption.



Kraftway is one of the major Russian companies operating in the market since 1993. The company develops and manufactures trusted platforms with integrated data protection equipment, creates hardware and software systems on their basis tailored to customer's needs, and also implements infrastructural solutions. Major state and commercial structures are the strategic customers of the company.



Trusted router

High dependence on imported software and hardware existing now in Russia results in higher vulnerability of IT systems of national enterprises and state authorities in a strained political and economic situation, with the buildup of new information threats. Development of computer systems, telecom channels based on domestic hardware and software will enhance level of protection for the national information systems.

The use of the concept of trusted platform suggested by Kraftway may successfully prevent information threats and ensure reliable operation of the systems. This concept is based on the development of circuit design solutions and manufacturing of motherboards in Russia, creation of source codes for microcode software for key elements (BIOS for motherboards and firmware for all microcontrollers), specialized software for data collection and processing and also systems for infrastructure monitoring and

control. Today, motherboards and final products are manufactured at domestic plant in Obninsk.

Kraftway production facility was commissioned in Obninsk in 2007. More than USD 30 mln was invested in its construction and modernization. The plant can be compared for a good reason with the best plants of the global leaders in hi-tech industrial production. Currently, all production capacities of Kraftway are consolidated in Obninsk: here 3 assembly lines operate, a line to manufacture printed boards, assembly section for complex server systems, section for special tests and studies. Production process at the plant is highly automated, and a combination of stack and conveyor technologies provides additional flexibility to production process. Big potential for further extension of production planned at the design stage will allow, upon necessity, to increase the output in a short time frame.

monitoring of production processes is performed on a regular basis, a special program is adopted to mitigate industrial waste, the company plans to abandon using environment-hazardous materials in its production processes, primary processing of industrial waste is carried out.

Today, the plant manufactures a wide range of trusted computers and telecom equipment: from tablets and PCs to powerful servers, data storage systems and switches. They are all based on uniform hardware/software secure platform developed by Kraftway. Unique specifics of the products manufactured by Obninsk plant is the use of components capable to ensure continuous monitoring and protection against malicious effect throughout entire lifecycle of the product. Among the most important developments of the last years: new generation of protected motherboards, high-speed trusted router, new generation of data storage systems,



Trusted DSS

Commissioning of the new complex allowed integrating educational and scientific potential of Obninsk with investments of Russian business in real sector of economy. It gave extra momentum to the development of the entire Kaluga Region. The company is focused on improving of production processes, wide implementation of electronic document control and partial transition of management function from human to computer. Kraftway also pays much attention to sustainability: environmental

information kiosks, trusted video cameras for CCTV systems and hardware peripherals. The status of Kraftway as a Russian technological leader is confirmed not only by development of innovative products and their serial manufacturing, but also by its extensive experience in implementing infrastructural projects. Acting as an infrastructure integrator, the company successfully builds complex systems. Its list of successfully implemented projects is constantly growing. Among its recent landmark projects the

following can be cited:

- Equipping of more than 600 healthcare facilities in Moscow Region with information terminals for self-service medical appointments;
 - Supply of trusted components for deployment of automated system of tele-healthcare consultancies at perinatal centers in Russian regions;
 - Integrated automation of fountain complexes at VDNKh;
 - Creating system of CCTV, information collection and processing for the facilities of Gormost FSUE;
 - Updated video replay system for All-Russia short track competition.
- In 2018 the company completed all procedures necessary for obtaining conclusion on Russian origin of wide range of products manufactured at its Obninsk plant under its brand. Development of own innovative technologies, further localization of production processes and sustainability were and remain strategic vectors of Kraftway development for the next years.

KADVI – enterprise of Military-Industrial Complex with strategy of diversification into non-defense products



Yuri LEYKOVSKY,
Director General,
PAO Kaluzhsky Dvigatel

PAO Kaluzhsky Dvigatel (KADVI) has been operating since 1966. This is a diversified enterprise specialized in manufacturing of small-capacity gas turbine engines for onshore power units of various purposes. The plant specializes in manufacturing products within the framework of the state defense order: overhaul of gas turbine engines, manufacturing of components and units for aircraft construction, car manufacturing industry, Russian Railways, oil and gas production industry, consumer goods and gardening equipment; it also provides maintenance and delivery services under orders placed by enterprises.



Yuri Alexandrovich, creation of KADVI plant enabled our country to achieve new level in manufacturing defense products. It was certainly an innovative project for that time. How the plant is developing today?

Indeed, construction of KADVI plant in 1966 was a major innovative project on a national scale implemented upon initiative of the Government. Kaluzhsky Dvigatel plant was the first one to master manufacturing of gas turbine engines and power units for onshore use. Before that, small capacity gas turbine engines were manufactured exclusively for aviation. Thanks to KADVI plant and new production technologies, major defense enterprises began to use small capacity gas turbine engines, which created new generation equipment with unique technical possibilities. Among them, T-80 tank can be mentioned as the most known and landmark equipment using gas turbine engine, as well as anti-aircraft missile systems for the national air defense.

Today, manufacturing of military equipment remains the most important element of our work. PAO Kaluzhsky Dvigatel is in the list of strategic enterprises of military-industrial complex; it has a honorary name 'Labor Glory of Kaluga Region'. The plant not only manufactures small capacity gas turbine engines, but also ensures overhaul of GTD-1250 and power mono blocks. We manufacture autonomous power supply units for gas turbine engines, components and units upon orders of enterprises from various sectors. Additionally, we manufacture wide range of gardening equipment up to 9 h.p. capacity and accessories for them. We also opened new line of business; it provides for modernization and repairs of metal-cutting equipment under orders of specific customers.



KADVI plant is one of the first Kaluga enterprises, which implemented modern methods of work organization: automation of management, production, technology and financial processes. Does this enabled higher

external environment. Computer-aided design and engineering solutions implemented in our engineering services already enabled us to substantially reduce timeframe of new projects' development, to ensure digital interface with production sites.

the latest developments created by our engineering center is a completely new innovative gas turbine engine for new non-defense equipment. Now, our engines can work not only on traditional fuels, but also, on gas. Specifically this goal was formulated



productivity? Did you manage to optimize financial component?

Main requirements for modern production, irrespective of its scale, mean production flexibility, ability to promptly react to changes related to customers and market in general, rational use of all types of resources. Digitalization and solving tasks of automation are certainly efficient tools to respond to modern market challenges. It should be noted that for KADVI this topic is not a novelty. We began to implement digital algorithms in management already in 2005. Even for our plant with big history and mature processes, it took a lot of efforts, resources and time to launch digital data exchange throughout the entire production loop. For that, we purchased necessary hardware and software; we installed fiber optic lines between our remote sites, buildings and warehouses. We performed large scope of work related to the creation of safe storage systems for databases, training of skills to work in digital environment. Today, generation, storage, analysis and exchange of big volumes of data takes place not only within the enterprise, but also helps some of our services to operatively interact with

It allows us creating high-quality products tailored for customer needs. It is important that we already get significant economic effect from the implementation of such systems. In combination with implemented modernization program, in particular, purchase of NC-machines, optimization of labor resources and growth of production volume, it certainly provided positive dynamic in labor productivity. And definitely, we value very much that the new technologies attracted young personnel to our plant.

Not every enterprise can boast of full production cycle. Moreover, KADVI Plant has its own engineering center and a design center developing new science-based technologies. Please, tell about the most interesting developments for non-defense sector?

High scientific and engineering potential serving as a basis for production from the very beginning, high-precision equipment, highly-qualified personnel, availability, as you mentioned, of full production cycle, these are fundamentals of the plant operations, which enable us to solve key tasks and deliver new scientific and engineering developments. One of

by the President and was included in strategic program of industrial development of the Russian Federation. Today, we proceed to a new stage of its implementation: we launch our new gas turbine engine to the market. The stage of new product market promotion always requires serious efforts. We have already hold negotiations with enterprises from various sectors, which showed interest in the new product. The Russian Railways, representatives of oil and energy, oil and gas production industry, truck-making and shipbuilding are interested in this product. Undoubtedly, in some years, the sector of production and use of gas-based equipment will be fast-growing because of high demand from various industries throughout the big territory of Russia, including territories with harsh weather conditions. The market generates new requests, and KADVI Plant keeps up with the times.

KEMZ masters new types of products



Kaluga Electromechanical Plant (KEMZ) was established in 1917 on the basis of repair shops for cable and telephone equipment. The enterprise lived through different stages in its development and finally became the founder of instrument-manufacturing sector in Kaluga. Today, the plant develops and manufactures communication equipment and consumer goods. The plant has modern process equipment enabling it to manufacture products meeting modern requirements.



KEMZ PLANT USED THE EXISTING STATE SUPPORT MEASURES FOR ITS CONVERSION PROGRAMS:

01

Subsidized loan from the Industrial Development Fund

02

Use of resources provided by leading national research centers: Tomsk Polytechnic University and Novosibirsk State University

03

Interaction with small & medium businesses, attracting finances from the Fund of Small Businesses Promotion in Scientific and Engineering Sector.

CONVERSION

The President of the Russian Federation set a task to achieve share of hi-tech non-defense and dual-purpose products at the plants of the military industrial complex (MIC) at least of 30% by 2025 and of 50% by 2030. Further development of Russian economy and national defense capability and security depends on successful diversification of the MIC. Experts are unanimous in saying that it is also important to keep existing capacities of the MIC enterprises in the process of such diversification. Implementing the diversification tasks set by the President and the Governor of Kaluga Region, KEMZ Plant actively masters new types of products. The enterprise is interested in higher volume of output of hi-tech non-defense products. Among 2019 projects, product range of LED lamps for different purpose may be mentioned, as well as intellectual proprietary mechatronics system and metal detecting arches. The plant has its own test base; therefore, all products undergo the entire set of mandatory tests, including mechanical, electrical and lighting-related tests.



MODERNIZATION OF PRODUCTION SYSTEM

Further stable development of the plant directly depends on its competitive ability at the market of non-defense products. Mastering of new products required revision of standard management system based on vertical hierarchy structure. Project-based management is considered by KEMZ as optimum method for planning and management of implementation of non-defense projects. This method is oriented to satisfaction of the needs of non-defense market within the frame of existing time, budget and resource limits. KEMZ managed to master timely and successfully main methods and tools of the modern production organization.

- Since 2013 1C MES (Manufacturing Execution System) has been implemented in the company. It enables to plan production of products and semi-products within the shop up to a level of work center taking into account shifts, load and availability of equipment and resources.
- New stage in the development of 'digital manufacturing' consists in implementing 1C PDM (PLM). Implementation of this system substantially accelerated preparation for manufacturing, preliminary computation of prices, launching of items into production cycle and further support of final products.



LED LAMPS

KEMZ Plant developed and proceeded for serial production of its own product range of LED lamps of various purposes: from modern office models to street lamps and fire- and vibration-resistant industrial lamps. Today, the wide product range allows to the plant entering the open non-defense market and successfully compete with leading domestic and foreign manufacturers of LED lamps.

Today, digital technologies are implemented in practically all areas of KEMZ operations: production, business processes, marketing and customer relations. In addition to the range of applied systems, digital manufacturing includes use of technologies of modeling and design both for products and articles themselves and for production processes throughout the entire lifecycle.



METAL DETECTING ARCHES

Metal detecting arches manufactured by KEMZ are designed to ensure public security at places of mass gathering. Metal detecting arches are equipped with video cameras with the face recognition system based on one of the fastest and the most accurate algorithms worldwide from NtechLab Company. The efficiency of this solution was proved on many occasions when ensuring public security at the events of various scale, up to international ones: a number of convicted criminals were apprehended with use of this system during FIFA 2018 World Football Cup.

INTELLECTUAL MECHATRONICS SYSTEM

Innovative product of non-defense use consists of control block and synchronous motor. These motor may be designed for general or special purposes. Intellectual mechatronics systems are already used in lift equipment, car-making industry, for special-purpose equipment, in industrial and household ventilation, in robotics sector and in oil & gas industry. In the near future, intellectual mechatronics system from KEMZ will be used for unmanned aircraft systems. The intellectual

mechatronics system are purchased by major customers: OAO Shcherbinsky Lift-Making Plant, OOO RusLift, OOO UAZ, AO Avtoelektronika, PAO AVTOVAZ, GC Elikor, OOO VEZA, NPP TEC, AO IEMX Kupol, PAO NPO Strela.



Innotechmet: we outrun similar foreign equipment by the majority of parameters



Igor DZHIKAEV,
Director General
OOO PO Innotechmet



OOO PO Innotechmet renders services in precision high-tech metal processing, design and manufacturing of complex body elements made of hard-to-cut alloys, including stainless and heat-resistant steels, for a number of sectors of the Russian industry.

The Company successfully implements the project to create production center, which will develop and implement in serial production wide range of import-replacing tool-making products at the level of the best global manufacturers.

Please, tell us about the most promising projects of your company. What is main competitive advantage of your products? Where are they used?

For almost 10 years, we work for the national military industrial complex (MIC) within the frame of state defense order. We manufacture various types of components, units for space equipment and missiles using our metal processing equipment. Since 2014 we are oriented to diversification and we began partial switching to non-defense products. Today we started serial production of equipment for tool-making sector. Our company manufactures a wide range of servo-controlled tool blocks for any processing equipment of machine-tool fleet in Russia. We are the only company in Russia to manufacture such products. The Ministry of Industry and Trade of the Russian Federation included our products in the critical segment of the Russian industry, because of the level of localization.

In May, our company took part in the international exhibition 'Metal Processing 2019' for the first time. Representatives of foreign and Russian machine-building enterprises, metal works, and companies manufacturing different equipment take part in this exhibition. This is one of the most important events in the sector of mechanical engineering. Our products were equally interesting for professionals in the industry and for representatives of government structures.

Innotechmet obtained its competences while working in the MIC; we developed and launched into production complex body parts made of hard-to-cut alloys. Today we use the same metals and technologies to manufacture non-defense products. The result is very decent, both by operational parameters and by anti-vibration properties. We outrun foreign analogues by majority of parameters; we also win by the cost of final products and deadlines of their supply.

Does Innotechmet plan to expand geography of its sales?

The potential of the market expansion is immense. Today the share of imported products similar to what we manufacture is practically equal to 100%. According to data from the Federal Customs Service, analogue products for RUR 5 bln were imported to Russia last year. Therefore, we are, certainly, oriented to the Russian market. Though, we have plans to develop export to European countries and the countries of the Eurasian Economic Union. I am sure that our target of production volume – 10,000 items/year (or, if take product range – 270 types of products) are quite achievable. Also, by the end of this year, we plan to create our own warehouse for final products.

In 2017, within the frame of bilateral Russia-Japan relations, specialists of Japanese companies performed technical audit of Russian enterprises with further implementation of kaizen system at production sites. What was efficiency of this project for Innotechmet? Did you manage to increase labor productivity?

We were one of 12 companies, selected by Japanese specialists for the technical audit. At the time, I visited Japan on several occasions, I knew their principles of work and understood that Japanese colleagues have something to suggest for us. This is why I agreed to take part in the project. In a seven-day period, auditors reviewed our production organization; they helped us to modernize and expedite production processes, reduce production chain and optimize working environment. Many things were new for us. They helped to eliminate unnecessary relocations of workers, cut the time spent on operations. Sometimes, we managed to achieve 50% reduction. These changes resulted in higher labor productivity. We borrowed methods to ensure quality of personnel from our Japanese colleagues. Everything is made in our company to ensure that the working time is fully

Kaizen is the Japanese system of continuous improvement of quality, technologies, processes, corporate culture, labor productivity, reliability, leadership and other aspects of company activities. As opposed to Western approach of improvement through innovations, the main focus of kaizen is oriented at continuous improvement of company operations through higher quality of personnel and initiatives of employees.



dedicated to work.

Kaizen tools, or otherwise, principles of lean production include not only organization of process chain, but also improvement of work culture at a production site. When we hire people, some 90% of applicants fail to complete 3-month probation period, because smoke breaks, and sitting on chairs in working time are prohibited. A worker must work at his machine-tool four hours before and after lunch time. We manufacture critical parts for aircraft, missiles, and we should be morally responsible, not allow negligence, because any defect may result in a failure of equipment and catastrophes. Although, we strictly observe 8-hour working day. This regulation has never been violated. Failure to observe work culture always affects quality of products, their value and competitive ability. This is why we eagerly began to implement and develop kaizen system.

Did you manage to extend kaizen tools to the entire production process?

Yes, after the audit, we began to use recommended methods not only at the experimental site, but also applied them for every employee, we studied the chain of all production operations; we optimized

the environment. At the earlier stage, we thought that large space would be more useful. Japanese colleagues demonstrated to us that in fact it results in unnecessary relocations. Today, we applied these recommendations to all sites of production process. Our management team, our process engineers are actively involved in solving these issues: they digitalize obtained data and make their input for improvements.

Active implementation of lean production is intended within the frame of Labor Productivity national program, which, one can say, segregated from kaizen system. To what extent, in your opinion, enterprises should master new principles of production organization?

The implementation of lean production is certainly an important and requisite task. Experienced people with detailed knowledge of business are needed for its successful implementation. In this regard, availability of arrangements with competent specialists and exchange of practical experience are very much important. I would go as far as saying that today we are one of the model companies in Russia, as far as implementation of kaizen practices is concerned. Surely, partners visit our company; they see how we work. But the process of exchange of best practices is not yet smoothly progressing. I hope that when programs would be adopted at the state level, which stimulate implementation of lean production, the situation will change. I am confident that those, who want to keep up with the time, who want to manufacture products competitive at the global level, understand that all this is possible only with modern approach to production organization.

Labor productivity and sustainable employment



Alexander MOSALEV,
Expert of Federal Center
of Competences in Labor
Productivity (FCC)



National project Labor Productivity and Sustainable Employment is one of the most important in the context of industrial development. What main tasks will be solved in the process of its implementation?

The President of the Russian Federation has set rather ambitious task in his May presidential decree – to become one of five major global economies. By 2024, labor productivity should increase at medium and major enterprises in base non-resource sectors of economy at least by 5% every year. It is a very high bar. Today, only China demonstrates such dynamics worldwide. The national project transformed from priority program will allow increasing labor productivity at the accelerated rate. The national project is divided in several milestones and has three main parts. First one is Systemic Measures. They mean creating of comfortable environment at the state level enabling increase of labor productivity. Second one is Sustainable Employment. Actions are included to train and, if needed ensure employment of employees from the enterprises participating in the national project. And third one is Targeted Support to Increase Labor Productivity at Enterprises. In order to achieve the target under this part of the project, 10,000 Russian

enterprises will receive federal state support. It should be said that enterprises began to receive such targeted support already in late 2017, within the frame of priority program. By early 2019, we significantly simplified access to the state support, and today 158 enterprises in 36 regions became recipients of federal assistance, including enterprises from Kaluga Region.

Please tell about the concept of Lean Production. Why an emphasis is made specifically on this aspect?

The main thing in the concept of Lean Production is the maximum satisfaction of the needs of ultimate customer. All production and office processes are aligned to meet this goal. Japanese Toyota Corporation demonstrated, how advantageous such approach can be. It allowed it promptly becoming a major global car maker from a regional company. All processes in the concept of Lean Production are assessed from the point of the value for consumer. Actions, which consume resources, but not involved in product creation, are determined as losses, and should be eliminated whether practical. For example, expenses for development of vivid design or formulation, which will extend service life of the product, are not questionable. But consumer

is not prepared to pay for the time, during which employees uselessly moved throughout the territory of enterprise, or for the rent of warehouse, where unsold or defective products have been stored for years. It should be noted that currently all these expenses are included in production costs of the product. When we provide targeted support, our purpose is to help enterprises understand, where they lose resources; suggest a set of measures to exclude such losses. Lean production – it is always quality-oriented approach. Defective products, expenses for their manufacturing and further rework are wasted resources. Therefore, one of the principles of lean production is 'Quality at the Source'. It means that an employee should not accept, manufacture and further transfer defective products. Tools and methods of lean production are universal; this is why an emphasis is made on it. Its implementation means exclusion of losses, higher quality and maximum orientation on consumer. We constantly speak about competitive ability, but under market conditions one can hardly imagine a company, for which it has no importance.

Special operator - Federal Center of Competences- was created in order to implement the project in the regions.

What are its tasks?

The Federal Center of Competences (FCC) is the operator of National Project Labor Productivity and Sustainable Employment; its role is to provide targeted support for enterprises and 'one-stop shop', through which the state support can be obtained. The FCC is responsible for achieving the target – increase of labor productivity by 30% in 2024 at 10,000 enterprises in Russia. We have highly competent experts specializing in production systems; they worked in leading Russian and international companies. It should be noted that, when the national project started, there were only 2,000 such specialists in Russia. One of the FCC tasks within the project frame is to train 23,000 specialists in production systems by 2024. Additionally, the FCC should form sustained interest of the business community for the issues of labor productivity, create environment for further development of continuous improvement culture at Russian enterprises.

What tools of support are planned within the frame of the national project?

There are the following support measures offered within the frame of the national project: individual consultancies from experts in production systems at specific enterprise participating in the national project, training programs and soft-term financing. Industrial consultants will be present at the participating enterprise practically all the time within first six months from three years of participation period. They create pilot model site and perform training of employees, who will replicate the experience in the future at other sites and will develop the culture of lean production. Interactive production training sites created in the regions or process factories under the FCC standards will help to master in practice tools and methods of lean production. Among financial measures of state support dedicated for participating enterprises, targeted loan from the Industrial development Fund (up to RUR 300 mln, 1% annual interest for 5 years) can be mentioned. Opinion from the FCC experts is mandatory for receiving such soft-term financing. The opinion should state that relevant production system is created at the enterprise, and existing reserves and resources are used in appropriate manner.

ANO Federal Center of Competences in Labor Productivity (FCC) was created on 18.12.2017 by decision of the Presidium of the Presidential Council for Strategic Development and Priority Projects.

MAIN TASKS OF THE FCC:

- 1 Planning of project tasks and implementation follow-up
- 2 Selection of enterprises for participation in projects
- 3 Support for participating enterprises in achieving project targets
- 4 Appraisal of compliance between the results of enterprises and criteria of financial aid allocation
- 5 Representation of project at state authorities, public entities and business sector

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Lean production is beneficial



Alexei ERMAKOV,
Head of Lean
Production Center,
GAU KO Agency for Business
Development

Lean Production Center is the operator supporting industrial enterprises of Kaluga Region, which implement programs aiming to increase labor productivity. The Regional Center of Competences (RCC) was created in 2017 within the frame of national project National Project Labor Productivity and Sustainable Employment. In 2019, experts from federal and regional centers will be able to provide targeted support for 28 enterprises of Kaluga Region.



In December 2018, Kaluga Region stepped into the second implementation phase of Labor Productivity project. The project is managed by the Regional Center of Competences (RCC) (Lean Production Center). Please, tell in more detail about your work with project participants.

Together with specialists of the Federal Center of Competences (FCC), we, as the Regional Center of Competences (RCC), actively work with enterprises operating in Kaluga Region. Our role is to select participants using criteria set by the FCC, we conclude agreements with enterprises on behalf of the region; we organize training of project team, which is created at the beginning of the project at each enterprise. The most important thing that we perform preparation and implementation of pilot project in improvement of production flow at a specific production site. After preliminary preparation of the enterprise, two active stages of deployment take place – these are goal-setting/planning and the stage of implementation of decisions. Duration of each stage is 3 months. Our specialists are present at the enterprise almost all the time: 80% of time - at the planning stage and 20% - at the implementation stage. Upon results of this work, the enterprises receive pilot project for the selected product developed under the guidance of the RCC expert, which should demonstrate effect of increased labor productivity, and also reduction of existing production losses: time losses for production (LT – lead time), overstock of materials and work in progress, unnecessary relocations of personnel and materials, unnecessary waiting time, reduction of defective products etc. The result of such work is the lower production costs and justified solutions regarding further development of production system. The experience gained during the implementation of pilot project may and should be replicated to other production sites, to development and modification of new and existing types of products, and also to improvement projects for office and commercial processes and logistics.

How the project is implemented in Kaluga Region?

We selected some 15 enterprises for 1.5-year perspective. Part of them only at the preparation stage for the project. The FCC experts directly work with first enterprises, and we act as co-trainers. This is a big joint work of project team consisting of FCC and RCC experts and also managers of Kaluga Turbine Plant and Kaluga Plant of Railway Equipment and Hydraulic Actuators. Directors and top managers of the both companies visited model plant Kovrov Mechanical Works in Vladimir Region. They saw, how productivity may be increased without significant costs. Then, they created a task force at their plants, which underwent relevant training. At the first stage the task forces studied production process, developed maps of current and target statuses and planned optimization project. Today, at the second stage, project teams of the plants implement step-by-step project measures aiming to increase planned output and to improve production process. In April 2019, Telemetry and Agrisovgas joined the program. They have been already completed their zero stage, and now

they develop action plan for targeted changes. Integration of other enterprises is expected in June and in December, when results of pilot projects will be summed up. I can say that we are happy with the existing dynamics. Also, our task is to motivate all project participants so that already during pilot project stage top managers of the companies were involved in the changes, and after its completion be able to participate in improvement of production, office and management processes, and therefore ensure implementation of lean production tools and development of production systems of their companies. Head of Lean Production Center has completed certification and obtained permit for independent work with enterprises, which will start already from June this year.

Are there any obstacles arising during the implementation of lean production?

Unfortunately, yes. Upon implementation of any innovations, resistance arises. Despite the fact that lean production tools are easily adapted to the existing management and production practices, managers change their work methods and thinking unwillingly and with suspicions. But, when they see first successful results of pilot project, majority of progressively-minded managers take side of lean production concept and practices. It should be noted that lean practices are industry-specific; therefore, for the majority of managers vivid samples from their industries are needed. When there are real examples of success in their industry, enterprises adopt lean production tools far faster and more eagerly. Those managers achieve radical improvements, who independently take interest in higher productivity and lean technologies, because they understand that reduce expenses, cut production costs is beneficial. Also, you raise competitive ability of your company. Such self-motivated managers implement improvements, withdrawing from comfort zone all lines of their activities, all parts of the corporate business cycle: commercial

aspects, marketing, sales, procurement, production, office processes, R&D and service.

When can one see results from the implementation of the program?

One can see first results from pilot project already after three-six months of its implementation. It directly depends on the level of involvement of CEO and on the time of decision-making for the project within the company. If we speak in general about the region, faster management thinking is ensured within the Labor Productivity Program thanks to massive involvement of all key enterprises using lean production methods. For example, in Europe, it took 25-30 years for getting used to these methods, since late 80ies. Our program is planned until the end of



2024, and some enterprises participate in it and get support for 3 years. The practice of implementation of lean production programs shows that the companies interested in improvements achieve serious growth and dynamics in development of their production systems within one or several years. Now, 10,000 enterprises nation-wide

will take part in the program. It is also important that today in Russia, according to different sources, at least another 15,000 entities implement these methods independently. Among them, there are state authorities, schools, polyclinics, which benefit from lean improvements and raise their competitive ability. This is why participation companies have all chances to get excellent results. But we should wait more for significant, radical results. The matter is that lean production thinking, reasoned approach to the management of available resources should be first embedded in the heads of managers of medium and major enterprises. It is important not to manage waves of current orders, but be able to calculate, how rationally resources are used, be able to manufacture high-quality products with

lower production costs for itself, and at the same time providing more customer satisfaction. If it made on regular basis, if lean production is a principle, then a lean eco system of positive management thinking is created, and this is a distinctive feature of the most efficient companies worldwide.

Participants of Labor Productivity national project



ОАО КТЗ

ОАО Kaluga Turbine Plant is the major Russian and CIS enterprise developing and manufacturing steam turbines, turbo actuators and turbo-generating units of small and medium capacity for power facilities of various sectors.

>3,000

Items of power equipment were delivered to customers over 70 years of the company operations

To 42 countries

Steam turbines made by KTZ are exported

1.17

RUR mln/person

Labor productivity upon results of 2018

KEY CUSTOMERS:

в GC Rosatom and its affiliated companies
 PAO Silovye Machinery
 PAO Gazprom and its affiliated companies

Kaluga Turbine Plant OAO joined the labor productivity increase project in December 2018. An assembly shop was selected as a pilot model site for the project. In six months significant improvements were made in terms of production process optimization and efficiency increase. The plant starts implementation of a new stage of the project providing for introduction of lean production principles in other shops and in relations with subcontractors and suppliers.

RESULTS OF RE-ORGANIZED PRODUCTION PROCESS

- 2 internal trainers are certified in the following activities:
 - Implementation of 5S in production
 - Implementation of improvement projects
 - Basics of lean production
- Some 100 employees were trained by internal trainers



АО КАЛУГАПУТМАШ



АО Kaluga Plant of Railway Equipment and Hydraulic Actuators (Holding Sinara – Transportnye Machinery, STM), was established in November 1874. The enterprise manufactures railway equipment for repairs, construction and operation of railroads. The equipment is exported to India, Pakistan, Cuba, CIS and Baltic countries.

Within the framework of the national project implementation employees of the plant underwent training and internship under guidance of FCC experts. Shop of track cranes and mechanized platforms was selected as a model site for implementation of lean production. New logistics chain was developed for the pilot site to supply components, storage systems were aligned and

technology process was adjusted. As a result of optimization, time of searching necessary tools and parts was minimized and labor productivity increased. According to **Valery Savchenkov, Director General of Kalugaputmash**, participation in the implementation of the national project will allow increasing labor productivity by 30% over three years and invest released

resources in the development of the enterprise: "Thanks to the project, manufacturing of four track cranes UC 25/25 per month is real already in 2019. Additionally, Kalugaputmash will be able to substantially increase the production culture".

НПО ТЕЛЕМЕТРИЯ

NPO Telemetry (GC Pandora) develops and manufactures antitheft alarm (car alarms and immobilizers), car service devices and telemetry complexes. Today, main products of the company are Pandora alarms and Pandect immobilizers.

The enterprise plans to increase its earnings from RUR 1.480 bln to RUR 1.924 bln without big investments in three years through the introduction of lean production tools. It will become possible thanks to labor productivity increased from RUR 4.2 to RUR 5.5 per person per year. Process flow, where Pandora LED 520W street lamps was selected as a pilot site. Improvements will allow increasing stability and speed of order execution.

Andrey Petrunin, President of GC Pandora: "We are the only ones in Russia, who has IATF 16949 international quality certificate, which enables us to manufacture electronics for global car manufacturers. Each our product, if not the best one worldwide, then one of the best. The program of the company development is based on new ideas and new developments. Within the frame of federal project we will be able to optimize and to improve production processes; we will get understandable methodology, which can be used at further stages".



NLMK-Kaluga – pilot project of production system

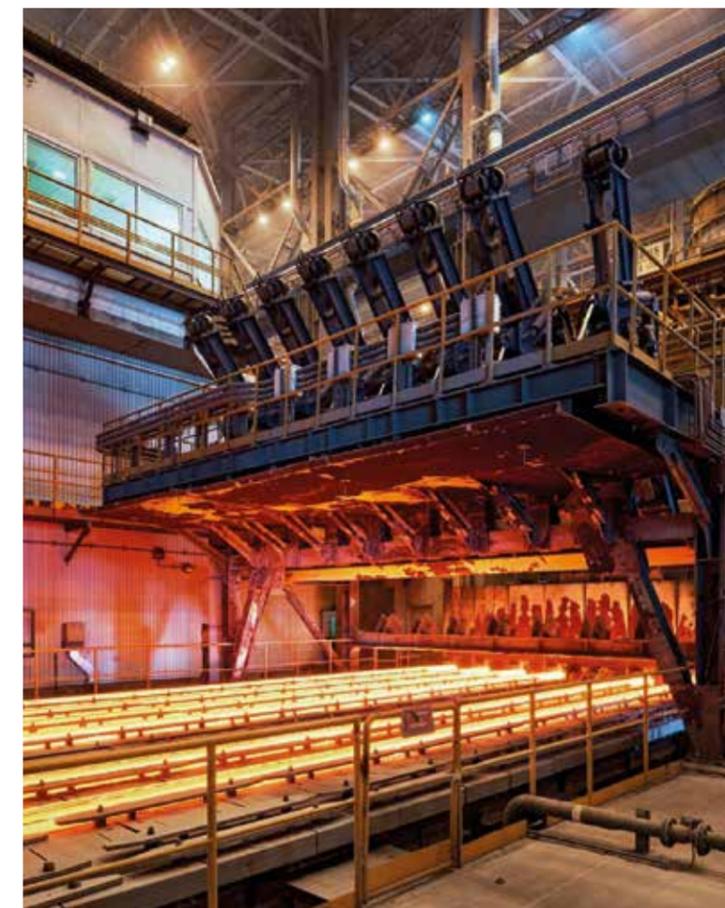
NLMK-Kaluga (Rolled Steel Division, Russia, NLMK Group) is a new-generation steelmaking plant, one of the major rolled steel manufacturers for construction purposes in Central Russia. NLMK-Kaluga project is based on a concept of mini-mill – complex of electric furnace steelmaking and rolling mill located close to raw materials and main customers.

Official ceremony of the plant opening took place in July 2013. Production capacities of NLMK-Kaluga in steel and rolled steel are 1.5 mln tons of steel and 0.9 mln tons of rolled steel per year.

NLMK-Kaluga became a pilot site to implement Production System in the NLMK Group. Each employee can develop and submit proposal aiming to optimize equipment operation, lower energy consumption, enhance quality and reduce production costs, improve and increase labor productivity. Submission of such initiatives is very popular among employees, because it is the simplest way to implement ideas of production improvements. If the implementation of an idea brings positive economic effect, then an extra bonus is paid to its author.

In 2018, 744 employees of the enterprise submitted their initiatives. This is by 3.5% higher rate as compared with 2017. In total, 1,383 initiatives were submitted aiming to enhance production efficiency. Economic effect from the implementation of ideas amounted to more than RUR 627 mln – by 74% more than in 2017. Bonuses at the amount of RUR 18.4 mln were awarded to the employees of NLMK-Kaluga for their submitted and implemented initiatives. Rolling-mill shop of NLMK-Kaluga was the most active one in submitting and implementing ideas.

384 initiatives have been already submitted in 1Q 2019, 358 of them have been implemented. Victor Ivahnuk, operator of continuous-casting machine, became author and implementer of the biggest number of initiatives (47 submitted and 45 implemented) for the second year in a row. His initiative to reduce cutting width of continuous-casting machine became one of his the most significant ideas in 2018.



**Victor Ivahnuk,
operator of
continuous-
casting machine,
NLMK-Kaluga**

“We readjusted our equipment, determined optimum height of gas cutter and installed nozzle of smaller diameter on it. It allowed reducing cutting width, and finally allowed saving more than RUR 6 mln and more than 200 tons of CC workpiece per year. I do not aspire to become a leader; this is simple desire to improve something from

what I see around. Initiatives are the improvements, on which we are all oriented. We understand that it is necessary to go ahead, and not to stay still. It enables us to be the best. Points to be improved and issues to be solved have been already determined at our site. The initiatives help us to solve these issues”.

At the end of each quarter, results are summed up at NLMK-Kaluga, and employees are selected, who were the most involved in the process of improvements. Bronze and silver statuses are awarded to foremen and shop supervisors, which reflect the level of involvement of their personnel in the process of idea generation. The award of status depends on points gained pro rata number of initiatives submitted by their personnel, and also pro rata technical and economic effect from system implementation. This year, gold statuses were awarded for the first time; they are awarded to those, to whom three silver statuses have been already awarded. So, in 2019, Sergey Levochkin, Head of Electrotechnical Laboratory, obtained gold status. 100% of employees at his site actively use tools of the Production System.





Sergey Levochkin,
Head of Electrotechnical Laboratory,
NLMK-Kaluga

“Development of a production system to a great extent depends on support and commitment of manager. He should serve as example to his subordinates, personally discuss and provide assistance in promotion of interesting ideas. We place information on initiatives and trace down their progress at our visualization board. We collectively discuss submitted initiative in order to exchange opinions and experience; and we make an emphasis on safe labor conditions at workplace. It is not only material motivation here. Promotion and implementation

of an initiative is a source of new competences and personal fulfillment. An employee, who suggests interesting ideas, engages his colleagues in the implementation process. They actively join in and make their own input in the form of their initiatives. The most important thing is that the employees understand necessity of all changes at the plant; they are deeply interested and they are set on further active progress in this direction”.

Every year, NLMK-Kaluga sets records at the level of the best world practices by volumes of its output and duration of serial casting. Seven million tons of steel were casted in 2019.

Sergey Shalyaev,
Director General,
NLMK-Kaluga

“Implementation of Production System at NLMK-Kaluga was a success: employees began to openly speak about the problems and suggest ideas to resolve them. Only over one year the number of submitted initiatives increased nine-fold, and their economic effect exceeded half billion Rubles. Today, NLMK Production System covers all main Russian sites. The project came out production only and now it includes labor safety, repairs, energy, logistics and principal and accessory processes. The NLMK Production System structurally changes processes and

culture of the Company. It provides a set of management technologies, which not only exclude losses, but also develops strong behavioral culture. Proper goal-setting, feedback, and team-building – these skills are sought after at all corporate management levels. The Production System helps not only to unlock the potential of the Company, but also personal potential of each of us”.



Industrial cleaning – an indispensable service

“Industrial cleaning”. The term may look not familiar, but it only means well-known cleaning of production premises. Great attention is paid at modern enterprises to cleanliness of premises irrespective of what products the enterprise manufactures. It may be alimentary products, car spare parts, chemicals or construction materials. Cleanliness is needed everywhere. During manufacturing process, an enterprise can hardly avoid dust and contaminants, which may results in allergy reactions and other diseases, reduce lifecycle of equipment. It is evident, that it not beneficial neither to employees, nor to their employer. Certainly, any company tries to maintain cleanliness and order. But, it is not always possible to draw upon own resources, when production premises need cleaning. Not every enterprise can afford expensive equipment for professional cleaning, purchase specialized chemicals and obtain necessary approvals for employees, for example, permit documents for work at height. Additionally, in the process of industrial cleaning it is necessary to follow procedures specified by documents and norms set by GOST, SNiPs and SanPin.

Over more than ten years of operations, our company **Cleaning 911** managed to gain a reputation at the market of professional cleaning. We grew to a major professional network from a small company. Our specialists work in six cities (Kaluga, Smolensk, Bryansk, Moscow, Tula and Pskov). They mastered more than 50 types of cleaning services.

What helped Cleaning 911 to become one of the leaders at the market of cleaning services for industrial enterprises?

One of the factors is the extensive experience that we accumulated in the development of tailored solutions – unique for each specific facility and specific situation. We learn fast specifics of enterprise, we assess the scale of future cleaning, and, the most important thing, we assess specifics of contaminants. Then, professionals begin to work.

What we can clean?

— Premises after any repair work;
— External structures, external lighting, walls, stained-glass windows, windows;



— Work sites: apparatuses, equipment, machine tools;
— Equipment: conveyors, production lines, cooling equipment;
— Storage, attic, basement premises;
— Reception areas, stairs;
— Utilities: ventilation, heating, water supply, air conditioners, sewage;
— Cloakrooms, rest-rooms, canteens, kitchens, lavatories, shower rooms.

Our cooperation

Generally, our cooperation with customers begins from full-scale cleaning of production premises. This is the most labor-consuming type of work. Then, our specialists perform periodical cleaning in order to maintain order, which is far easier. We clean premises from all types of contaminants, including those, which result from production specifics. The purpose of full-scale cleaning is to return premises to their initial state. We do the following for that:
— We clean all surfaces from the floor to the ceiling;
— We remove old stains;
— We remove dust and soil in hard-to-reach places at any height;
— We think through cleaning technology so that expensive equipment is not damaged and deadlines are met;
— We organize high-quality cleaning of large space.

The work that our specialists perform depends on the season.
In winter: we remove snow and clean paths from ice; in summer – we mow

grass, sweep and wash sidewalks. We collect and remove waste. We should separately mention full-scale cleaning at the enterprises of food industry. We know, on what attention should be paid. The reputation of food production and even the health of consumers depend on how qualitatively the cleaning will be made. Cleaning 911 Company uses only specialized chemicals, which suit for cleaning of food production premises.

Often, the companies, which ordered one-time full-scale cleaning from us, when they see for themselves the professional results, become our permanent partners. We are proud of our work, which the best advertising for us. Today, in a modern world, especially in production sector, a manager of company of any level constantly faces challenges, various commitments and arrangements. If you want that cleanliness at your enterprise and clean equipment not become an extra pain for you, you can put this burden on Cleaning 911 Company. For you, industrial cleaning is a necessity, which enhances quality of all production processes, for us, industrial cleaning is a job, in which we are really good.

Cleaning 911 – beneficial terms, real prices. Phone: 8 (800) 234-2-911

Clusters

Cluster principle of industrial development is a key element in social and economic strategy of Kaluga Region. Such approach helps to resolve issues related to provision of personnel, logistics. Suppliers, sales markets; it provides opportunity to cooperate with major international companies, to develop at an accelerated rate and reach new level of competitive ability. More than 10 clusters are now actively developing in Kaluga Region.



Automotive and automotive components cluster

Top 3 of Russian automotive manufacturers

- 3 OEMs-manufacturers
- 28 manufacturers of automotive components
- 12,000 jobs => 10% of persons employed in industrial production
- More than 11% of cars and trucks manufactured in Russia



Pharmaceutical, biotechnology and biomedicine cluster

The only in Russia Silver Certificate, CLUSTER EXCELLENCE (ESCA)

- 64 enterprises and entities
- 10 full-cycle factories complying with GMP standards
- > 70% - share of innovation companies
- 158 names of finished pharmaceutical products (FPP)



Transportation and logistics cluster

Forwarding services, direct access to international transportation corridors

- 2 MLC Freight Village RU.
- FreightVillage VORSINO – major distribution hub in the Central Russia, supporting point of One Belt, One Road Project
- FreightVillage ROSVA – inter-regional logistics complex
- Kaluga International Airport – 11 directions



Agro-industrial cluster

1st place in Russia by the rate of milk production growth

- 750 farms
- 45 enterprises of food and processing industry
- 128 milking robots in 36 farms
- 10% growth of gross agricultural production in 2018



Cluster of composite and ceramic technologies

Development of production of composite materials

- 22 participants – industrial enterprises, scientific institutions, educational institutions
- 11 partner enterprises
- > 400 innovation developments transferred to production



Education cluster

100% training of personnel for the needs of economy

- Modern educational centers
- 80 professions and lines of training
- Dual educational system
- International school – Cambridge International School, IB Standards



Cluster for production and processing of food products

The cluster was created in December 2018 upon initiative of the management of Nestle Purina PetCare. Appropriate memorandum was signed between the Government of Kaluga Region and Nestle.



Cluster of information and communications technologies

Implementation of digital technologies in all aspects of life

- 131 participants – developers, providers, manufacturers, research and education block
- Projects: IT-school, IT-lyceum, Yandex-Lyceum, IT-campus, Smart City, Distance Learning System, Northern Agglomeration Digitalization etc.



Tourism and recreation cluster

Top 10 among Russian regions by the rate of tourism development

- 4,000 historical and cultural landmarks
- 130 unique tourist itineraries
- 20 travel operators for domestic tourism
- 64% - growth of tourist flow over last five years



Alessandro ZANELLI,
CEO,
Nestle Ukraine
and Moldova

“Today, 85% of raw materials for our plant come from local suppliers. We believe that in addition to other advantages, work in a cluster allow us enhancing effectiveness of efforts in localizing raw materials and optimizing supply chain”.

Clusters form new production culture



Anatoly SOTNIKOV,
Director General, AO Agency for Innovative Development – Center of Cluster Development of Kaluga Region



AO Agency for Innovative Development – Center of Cluster Development of Kaluga Region was created in November 2010 in order to create conditions for development and promotion of innovations, formation of new sources of growth, development of high-tech sectors of economy and territorial clusters.



Kaluga Region is one of the first Russian regions, which developed strategy of social and economic development. It happened 10 years ago. The strategy defines priorities of the regional development until 2030. In the industrial context it means creation and development of clusters. 10 industrial clusters began to operate in the region over these years. Please, tell about the most promising clusters.

Indeed, de-facto, more than 10 industrial clusters are now actively developing in the region, but de-jure, only 6 of them are formalized. For example, automotive cluster, being a driver of the industrial development of the region, has not yet been legally formalized. I hope that before the end of this year it will be included in the register of industrial clusters of the Russian Ministry of Industry and Trade. From our part, we provided maximum possible support. Pharmaceuticals, biotechnology and biomedicine is formalized and now uses all available measures of state support. In 2013 it obtained status of pilot innovation cluster of the RF by the Russian Government Decree and three years ago it was included in the clusters of priority project of the Russian Minister for Economic Development 'Development of innovation clusters – leaders of world-level investment attractiveness'. In total, there are 11 such clusters. When we defended this project, we mentioned among targets to be achieved before 2020 a target of annual production volume at the level of RUR 50 bln, development of competences related to production of finished pharmaceutical products (FPP) and radio pharma products, creation of medical industry and nuclear medicine. Now, I can say that fundamentally we achieved the targets already by late 2018. Upon results of the year, annual production volume in pharmaceutical cluster amounted to RUR 51.7 bln; more than 3,000 highly-productive jobs were created at the cluster enterprises. Creation of each cluster is attributed to specific reasons. For example, development of automotive cluster is attributed to the necessity of deep localization of car manufacturing; today, level of such localization for some models reached 70%. The task of our agency, being an operator in forming regional clusters, is to identify, what sectors have the biggest potential of growth, and to create clusters around them. This is the principle, by which pharma cluster was created. I.e., an infrastructure to attract investments and to develop innovations was created around Obninsk, which has significant intellectual potential. Today, already 10 GMP-compliant industrial enterprises operate in the district; they manufacture about 160 names of FPP.

This year, we expect that two more pharmaceutical plants of Sphera-Pharm and PharmsynteZ companies will be commissioned, Novamedica plant is under construction, and Mirpharm company began its construction project. 15-16 pharmaceutical plants of the region will manufacture pharma products in the coming 3-4 years. Cluster, which also has evident prospects, is the cluster of composite materials and ceramic. It was created in 2014. Now, there are 22 enterprises in it; they manufacture products for more than RUR 12 bln per year. The unique feature of this composite cluster is that is the only one in Russia, which created its own scientific and technical council. Every year, positions of agro-industrial cluster become stronger. The main projects within the sector aim to ensure food safety of the region and creation of high-tech production sites in the agricultural sector. Milk segment is significantly robotized in the region; program '100 robotized farms' is successfully implemented; project of wheat deep processing – 'Rosva Biotechnological Complex' is progressing; agricultural enterprises use modern automated technologies in various segments of agro-industrial production. Favorable location of the region, high activity of regional economy ensured efficient development of transportation and logistics cluster. Today, few regions have equal possibilities to optimize logistics processes. We created multi-modal complexes of Freight Village format. Today, Freight Village Kaluga is the biggest and the most modern distribution hub in Central Russia. In 2016, Kaluga Region became part of global project 'One Belt, One Road'. Railway itinerary allows delivering goods from Asian and Far-Eastern countries to the center of Russia within less than 14 days. For reference, delivery by sea takes at least 50 days. Geography of itineraries is constantly expanding. We started from one direction; today goods are shipped from 9 Chinese ports, cities of Japan, Mongolia, India, Latvia and Belarus. Thanks to participation in 'One Belt, One Road' project, over last five years, volumes of export supplies from the territory of Kaluga Region increased almost 9-fold. Other clusters also have excellent prospects of development; it allows being optimistic about future development of the regional industry.

Can we say that cluster format of industrial development pays



10 GMP-compliant industrial enterprises operate in Kaluga Region

off? Are there specific examples of increased productivity, birth of new competences, and entry to new markets?

I previously told you about increased export associated with development of transportation and logistics cluster. Automotive cluster demonstrated unique example of industrial development under cluster principle. 10 years ago, the input of automotive industry in the GRP was measured in one-digit per cents. Today, we see a fantastic leap, when its share in the GRP nears 40%. One can hardly find an analogue to this precedent. Today, enterprises-participants of the cluster manufacture practically all main components needed for the automotive industry; they manufacture engines, oils, tires, glass, electronics – these are all new competences, which were born before our eyes. Both manufacturing of FPP and pharmaceutical substances is developing in pharmaceutical cluster. For example, Bion Company manufactures substances for Bayer — world leader in pharmaceutical industry. This is a true evidence of high production level. Key purpose that was assigned upon creation of information and communications cluster was to develop interaction between regional IT companies with possibility to form sort of consortia capable to participate in major projects. Today, the cluster is a leader by number of joint projects and development of

cooperation; and this is one of key competences in modern world ensuring success in developing innovation technologies. Formation of clusters requires large numbers of new highly-qualified specialists. This is why all clusters, especially information and communications cluster actively develop their educational projects. For example, such training centers as Samsung IT School, Yandex- Lyceum, IT-Lyceum of Astral Company etc. were created with assistance of key companies from the information and communications cluster. So, issues related to personnel training are solved within the cluster. Location of Russian and foreign companies at the same cluster site resulted in a situation, when production culture, approaches to higher labor productivity of highly-effective brand companies expand to local Kaluga companies. It stimulates increase of labor productivity at the enterprises traditional for the economy of Kaluga Region.

Please, tell us about the most significant projects of production interaction between participants of industrial clusters.

We can see efficient interaction within the frame of pharmaceutical cluster. There, outsourcing is actively developing, when major pharmaceutical companies use small and medium enterprises for production of pharmaceutical products. For example, Hemofarm, after buying license to manufacture certain FPP from



Enterprises of automotive cluster manufacture practically all main components needed for the automotive industry

OHFC, maintained manufacturing of these FPP at the Obninsk plant. Cooperation project between OOO Nearmedic Pharma and OOO Hemofarm (STADA) is a unique one not only for the Russian Federation, but also worldwide. This cooperation project has almost 5-year history. Yet at design stage of the plant, OOO Nearmedic began manufacturing of products on contractual basis at Hemofarm production site in Kaluga Region. It allowed increasing production volume almost three-fold event before the commissioning of the plant. Additionally, the personnel of Nearmedic underwent training at the Hemofarm production site. Last year, Palladio, an Italian company, opened its plant to manufacture packaging for pharmaceutical products. Today, many enterprises of the pharmaceutical cluster purchase their packaging from it. Also, a plant to manufacture glass for pharmaceutical industry is now under construction at the territory of the region. Within the frame of composite cluster Porsche French Company has built a vertical production chain related to manufacturing of carbon fiber. It is used to create composite materials by enterprises participating in the cluster. It is not by accident

that Porsche Company has decided to place its plant in Kaluga Region – here, there is a large market of industrial manufacturers of composite materials, for example ONPP Technologya. There are a lot more of such examples. The cluster policy of the region attracts new investors, because the Government of the region created infrastructure of fast response



The enterprises of the pharmaceutical cluster manufacture about 160 final pharmaceutical products

to the needs of businesses. It helped, for example, to reduce transportation costs for supplies of components. All these synergetic effects enable our enterprises to be more competitive and more successful both at the domestic and at the global markets.

What preferences are provided, when a company joins cluster?

Formation of clusters provides powerful synergetic effect; it allows successful promotion of interest of cluster enterprises, achieve improvements in regional and federal regulatory base. Joint activities in personnel training stimulate development of universities and educational institutions. Within each cluster a joint development strategy is formed, which allows to understand industry-specific trends at regional and national scale. There is a number of projects, which work simultaneously for all cluster participants; in particular, a number of common problems were identified some time ago in pharmaceutical cluster – these are waste processing and necessity to create ‘cold chain’ in the transportation, storage and customs clearance of pharmaceutical substances. All these problems were resolved within two years – an investor came and constructed a plant to process pharmaceutical and medical waste; and within the frame of Freight Village Project of logistics cluster warehouses were built, which

allowed storing and ensuring fast process of customs clearance of pharmaceutical substances for our production needs. From the point of direct benefits cluster participants obtain substantial state support and provision of human resources. Our agency as a center of cluster development through programs of SME support has rather large resources for holding workshops and round tables, which allow resolving main issues related to the development of new competences for employees working at the enterprises of the clusters. Today, we perform work to include several our clusters in the register of the Russian Ministry of Industry and Trade, where in the past years direct support existed for inter-cluster projects. Currently, the Ministry re-organizes this support, but a Governmental Decree is prepared related to the development of inter-cluster projects. The support from the Russian Government will consist in subsidizing the entire volume of tax augmentation from the implementation of projects, thus allowing filling the gaps in vertical production chains of the clusters. If this project is implemented, we will be able to obtain new preferences for investors.

What is further development scenario for regional clusters in the context of priority directions of 2024 industrial policy?

The formation of clusters allows bringing production to a qualitatively



Information and communications cluster actively develops its educational projects

new world level. As a result, we will get opportunities for import substitution, because localization of industry-specific production capacities within clusters creates vertical production chains. In the aggregate it allows reducing production costs and increase labor productivity at the enterprises of such chains. Consequently, products of such clusters become competitive both at national and world scale. The goals set by national projects and related to the development of new industrial policy, labor productivity and

export potential become more achievable within the frame of cluster development. Emphasis specifically on the development of industrial and innovation clusters is made in the documents defining main industry-specific priorities. This is a long-term policy, which will create further additional opportunities for the development of our region.

ADVANTAGES OF CLUSTER POLICY:

- + optimization of costs for creation of infrastructure
- + increasing competitive ability of all enterprises
- + development of utility, transport and social infrastructure
- + development of small and medium enterprises
- + attraction of investments
- + expansion of research, technical and production cooperation
- + creation of new jobs
- + diversification of industrial complex
- + growth of innovation potential
- + improving of vocational training system



MORE THAN **500** EMPLOYEES
WORK IN ALL REGIONS OF THE RUSSIAN FEDERATION

Novo Nordisk

Novo Nordisk is a global healthcare company with more than 95 years of innovation and leadership in diabetes care. This heritage has given us capabilities that also enable us to help people defeat other serious chronic diseases: obesity, haemophilia and growth disorders. We try to take initiative in each of these therapy areas, driving change to the better with inflexible faith in that is possible.

See more details at novonordisk.ru

Innovative medicine

Our principal task consists in discovery and development of innovation biopharmaceutical products and making them affordable for patients worldwide. In 2018, Novo Nordisk Company invested 13.2% of its sales in research and development, about 25,000 persons took part in 127 clinical trials at approximately 4,800 clinical centers worldwide. Our portfolio of products includes new generation of insulins and analogues of glucagon-like peptide-1 (GLP-1), and new methods to treat obesity, haemophilia and other diseases.

Principle of 'triple result'

In order to continue helping people, our business should grow and be profitable, but we should achieve it in responsible manner. We call such approach a 'triple result'. It means that Novo Nordisk tries to take into account financial, social and environmental consequences of each decision in the process of its operations. Our environmental strategy 'Circular for Zero' sets ambitious tasks for our Company: zero impact on environment by 2030.

Actions driving change

Manufacturing of vital medicines is a big responsibility; though, it is not enough to defeat serious chronic diseases. This is why we work in collaboration with organizations of patients, with politics, medical specialists and non-government organizations in order to increase awareness, improve prevention, assist in early diagnostics and increase affordability of medical assistance.

• Cities Changing Diabetes™

It is a partnership program aiming to include diabetes topic in cities in the agenda. The project falls beyond the scope of standard healthcare system and means integrated cooperation at the level of public-private partnership, including business, city authorities, healthcare institutions, public entities and scientific community.

• International Diabetes Day, International Haemophilia Day and International Obesity Day

Each year, in collaboration with international and national patients' organizations, Novo Nordisk holds a number of awareness events aiming to improve life of people with these chronic diseases and also to dissemination of knowledge on their prevention and treatment.

• Independent **International Diabetes Fund and Novo Nordisk Haemophilia Fund** were created in order to increase affordability of diabetes and haemophilia treatment in least developed countries.

TOTAL VOLUME OF INVESTMENTS IN THE RUSSIAN PLANT EXCEEDS

RUR 8 BLN



MANUFACTURING OF FINAL ASEPTIC PHARMACEUTICAL PRODUCTS IN CARTRIDGES SINCE 2018



ALL MODERN INSULINS MANUFACTURED AT THE PLANT HAVE NO ANALOGUES IN RUSSIA



ASSEMBLY AND PACKING OF FLEXPEN® INJECTION PENS



Novo Nordisk Russian plant

Pharmaceutical plant to produce modern insulins, built from scratch, was opened in 2015. Plans to build the plant were discussed with Lars Sørensen, CEO of Novo Nordisk, at the state level. The project was supported by Russian authorities: Dmitry Medvedev (2010) and Vladimir Putin (2011) during their official visits to Denmark.

The Novo Nordisk high-tech plant in Kaluga manufactures modern insulins having no analogues in Russia on full-cycle production basis: final aseptic pharmaceutical products in cartridges with use of original substance manufactured at the plant in Denmark. Assembly and packing of Flexpen® pre-filled injection pens. Pre-filled injection pens, for which 89% of insulin analogues^{1,2} accounted for in Russia, are the most common type of insulin injection worldwide^{1,2}. The Novo Nordisk plant in Kaluga is the only one in Russia manufacturing complete portfolio of modern insulins.

Novo Nordisk plant is an example of successful investments of the Company into localization and modernization of pharmaceutical industry of the Russian Federation. The production complies with GMP standards, corporate standards and Russian legislation in pharmaceutical production; advanced solutions are used at the plant as far as energy efficiency and environment protection are concerned. More than RUR 8 bln were invested in the development of production site; about 300 jobs were created; total surface of the plant is 13,000 m².

Today, Novo Nordisk is a Russian manufacturer fully-compliant with goals of production localization defined by Pharma-2020 Strategy and developed Pharma-2030 Program; it develops production for the benefit of Russian patients.

1. <http://zakupki.gov.ru>
2. IMS Health database, ATC Class 4, MAT Sep 2017 version

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80 BRANCHES



R&D CENTERS
CHINA, DENMARK, USA,
GREAT BRITAIN

MANUFACTURER
IF
**ALMOST
HALF OF
INSULIN**

PRODUCTS
ARE SUPPLIED
to **170+**
COUNTRIES



MORE THAN **29,000,000**
PERSONS WITH DIABETES USE INSULIN
MANUFACTURED BY NOVO NORDISK



43,200
PERSONS
WORK IN THE
COMPANY

ANNUAL TURNOVER
15 BLN EURO
210,000
SHAREHOLDERS



PRODUCTION
ALGERIA, BRAZIL,
CHINA, DENMARK,
RUSSIA, FRANCE,
JAPAN, USA

NEARMEDIC: 30 years in the service of innovations



Nearmedic is a company with 30-year experience in epidemiology, immunology and molecular microbiology. Since its foundation by a group of scientists from the N.F.Gamaleya Research Institute, the company's activities are focused on the development and introduction in medical practice of innovative medicines defying infection diseases. Today, Nearmedic specialists work in the segment of regenerative healthcare, developing modern methods of activation of biological processes aiming to reinstate damaged tissues and organs.



NEARMEDIC

INNOVATIVE ACHIEVEMENTS

Nearmedic has been implementing its own scientific developments over 30 years. In late 1980s the Company was the first one to raise the issue of chlamydia in the country and developed test system identifying the infection using molecules, which allow determining presence of bacteria in any material. On the basis of molecular and genetic studies, the Company also produced diagnostics test systems and reactants to identify mycoplasmosis, ureaplasmosis, herpes virus infection, syphilis and viral hepatitis.

In 1996, in collaboration with Murex Biotech, one of the first in Russia GMP-complying production sites was created. It allowed manufacturing of a number of diagnostics products, which then were included in the centralized purchases of the Ministry of Healthcare of the Russian Federation.

Today, there are several dozens of unique medicine projects at different research stages in the portfolio of Nearmedic.

STATE SUPPORT

Significant number of Nearmedic systemic projects is implemented thanks to state support, within the frame of Pharma 2020 State Program and programs of Industrial Development Fund. Measures to support domestic pharmaceuticals are critical for the industry under strained economic conditions and external pressure.

Programs of the Russian Ministry of Industry and Trade in fact revive pharmaceutical industry, and gradually pull it out of situation of dependence on imported products; they form fresh approach to Russian developments both within the country and abroad.

PRODUCTION IN KALUGA REGION

Since 2015, the company has been manufacturing anti-viral Cagocel medicine at Nearmedic Pharma full-cycle plant in Kaluga Region. The capacities of the plant allow manufacturing of 80 mln packages per year. The product is supplied to pharmaceutical markets of Russia, Belarus, Kazakhstan, Georgia, Armenia, Moldavia and Mongolia. In the near future, production of much sought-after anti-tuberculous medicine will be opened.

In November 2018, the Company launched first Russian production facility to manufacture reactants for genetic person's identification and establishment of filiation. The products are aiming to ensure national security and designed for use by forensic science laboratories of the Russian Ministry of Healthcare, by expert laboratories of the Ministry of Internal Affairs, the Investigative Committee and



the Ministry of Defense of the Russian Federation.

The opening of this production facility will allow reducing dependence of the state on imported test-systems by 50% and changing the odds in favor of domestic companies. The plant is certified under ISO 18385 International Standard, which in addition to GMP includes specific requirements for manufacturing products for forensic analysis.

Also, a project to manufacture test systems determining narcotic drug

content in saliva is prepared for implementation at Nearmedic Pharma plant. The product is designed for use in civil and military sectors – for pre-shift and pre-trip testing, for testing at narcological dispensaries and hospitals, for performing tests at workplaces, and also at the places of road accidents. Advanced technologies of Nearmedic allow promotion to the market of test systems for simultaneous identification of maximum number of psychoactive drugs.



Continental Kaluga Is Ready to Respond Quickly to Economy Changes

Continental Kaluga LLC has started mass production in Kaluga Region in October 2013. The plant manufactures winter and summer tyres for passenger cars and light trucks. More than 200 tyre types labelled "Made in Kaluga Region" are now supplied to the Russian market, to Europe, Asia and North America countries. Within the territory of the tyre plant, a ContiTech division is located, which manufactures air conditioning systems and steering control system.



Georgy ROTOV,
Chief Executive Officer of Continental Kaluga LLC

Following the results of the financial year, can it be said that Continental Kaluga has confirmed the yearly forecast despite the market situation? Tell us about manufacturing development directions. Whether intellectual technologies are implemented, productive capacities are expanded and innovation potential is grown at the Kaluga plant?

Last year, we have produced and sold a planned volume of tyres. In 2018, we have also invested additional funds in production section upgrade, have purchased new machines for tyre assembly and studding, have expanded and upgraded assembly lines. A part of equipment is a unique one: for example, new generation of studding machines allows to use various types of spikes to simultaneously stud a tyre. The machine has the improved stud feeding system: a special chamber does not allow defective or wrongly positioned studs to find their way to a tyre. Studs themselves are covered with an adhesive compound to securely fix them in a tyre tread. All of this was an important step towards launch preparation of IceContact 3 – a new winter tyre model with rubber-coated studs. Among flagship models, we are also manufacturing in Russia EcoContact tyres using innovative rubber mix Green Chili and premium tyres PremiumContact 6.

Continental is the leading automotive component exporter of Kaluga Region. It is a significant breakthrough taking into account initial enterprise orientation towards the internal market. How the export potential is being developed? Whether are you feeling the state support of export?

Yes, more than 200 tyre names labelled "Made in Kaluga Region" are now supplied to 22 countries in Europe, Asia and North America apart from the local market. If we talk about the state support of exporters, then one may note a successful example of incoming VAT separate accounting cancellation in 2018. In the past, an exporter company was obliged to maintain a separate accounting of incoming VAT in accordance with the Tax Code of the Russian Federation. To that end, incoming VAT should have been separated into internal market and export, which is problematic for production. Let us assume, a

plant buys a few tons of raw rubber to manufacture tyres. It is hard to calculate what part of the material will be included into tyres for the internal market, what part – for export one and what part will be rejected as defective.

Prior to this year, we have exported products to Continental distribution centers only through the intermediary company – Continental Tyres RUS LLC. Among other things, we have raised the issue at Autoevolution event in 2017. Then, Continental experts were invited to Russian Export Center JSC for consultations in the course of the project development. It is good that those changes have come into force as early as 2018. Now, we are exporting our products directly to end buyers without any intermediaries. It has allowed to reduce document flow by a factor of two and to add a sales margin for the benefit of the plant.

Does the logistics system of Kaluga Region facilitate the development of export projects?

With the provision of Kaluga customs terminal, transport infrastructure for overland shipment using trucks is an undisputable advantage for export activities in any western direction or towards EEC (Eurasian Economic Community) countries. As to the East, for example, export to

China or Republic of Korea, Vorsino hub will be able in the future to become an optimal variant of end product delivery using railway.

Tell us about factors supporting Kaluga plant's high production efficiency as compared to other enterprises of the Group?

Last year's results were marked for us by the important event — for the second year in a row, Continental plant in Kaluga was awarded with the internal company reward in the "Best Plant" category based on quality characteristics among all company plants manufacturing passenger car and light truck tyres. It means that our team has so efficiently built processes it allows to manufacture products of the highest quality with minimal waste quantity, thrifty attitude to energy resources, effective consumption of raw materials and supplies, and complying with labor safety requirements while doing so. The key success factor is qualified professionals, who have become real experts of tyre production in the five years of enterprise operation. When training the personnel, we are receiving help from the system of the company's local and international programs, knowledge network exchange within the Group. Up-to-date equipment, high level of production automation,

support of Continental Research and Development Center in Hannover (Germany) allow us to manufacture tyres at a quick pace, in a quality manner and in accordance with customer requirements. For us, this reward is an important indicator of customer loyalty, high labor productivity and readiness to respond quickly to economy changes.



Technology OSIE – a Flagship of Composite Production Development



A.G. Romashin Obninsk Scientific Industrial Enterprise (OSIE) "Technology" is a Russian competency center in the area of science-intensive, high-technology product manufacturing from non-metallic materials for aircraft, space-rocket, transport industry. It is a part of Rostec State Corporation. It has status of State Scientific Center of the Russian Federation beginning from 1994.

53 spacecraft with Technology OSIE components were launched into orbit

60 partner companies in more than 20 countries (USA, China, Israel, Latvia, Lithuania, Italy, Poland, Austria, Czech Republic, Germany, Switzerland, Norway, Denmark, United Kingdom, France, Belgium, Luxembourg, Moldova, Belarus, Ukraine, Macedonia, Vietnam, Kazakhstan, Uzbekistan)

> **1,400** patients

> **1,000** advance developments

ANCHOR ENTERPRISE for composite material and ceramics cluster of Kaluga Region (AKOTEX)



Technology OSIE is one of the Russian leaders of import substitution. The R&D product of the enterprise, thanks to which production of all-new ceramic, radiotransparent radomes for high-speed aircrafts was organized in Russia, has received a Prioritet-2018 award.

KEY ACTIVITY AREAS:

applied researches and innovative developments in the area of creation of new materials, unique designs, technologies and manufacturing of products from polymeric composite, ceramic and glasslike materials for space, aircraft, overland and water transport, electric power industries.

SCIENCE-INTENSIVE PRODUCTS FOR CIVIL INDUSTRIES

RAILROAD INDUSTRY

High-strength glazing of driver's cabins



Composite cabin of RA-3 railbus (in cooperation with Polyot-Service LLC)



Composite cabin of 2TE25KM, TEMG1 diesel-electric locomotives (in cooperation with MYS CJSC)

AEROSPACE INDUSTRY



The authorial research team of the enterprise has received Award of Government of the Russian Federation in Science and Engineering as of 2018 for development of a new type of aircraft glazing based on monolithic polycarbonate and its manufacturing process.



CFRP (carbon fiber-reinforced plastic) structures of tail assembly of MS-21 passenger aircraft



Made of PCM (polymeric composite material) sound-absorbing panels of SaM-146 aero-engine for Sukhoi Superjet 100 aircraft (Snecma, France)

The enterprise is implementing more than 20 measures to introduce a lean manufacturing system.

The focal areas are automation and broad personnel involvement into improvement process. In 2018, the company has become a finalist of OEE Award for a development in the area of automated management system.



R&D products for Proton launch vehicles:
— nose cone shells
— wiring ducts of rocket stages and booster

MYS: Innovation Technologies of Machine Industry



Starting from 1997, MYS CJSC has been developed and manufactured serial products made from composite materials (fiberglass) and metal for the Russian market.

The company actively upgrades existing railway equipment: nodes, impellers, etc. Innovation technologies of MYS CJSC allow to increase operational life of rolling stock and ensure entry into a market with eagerly sought import substitution proposals. The quality management system of the company is certified to ISO 9001:2008. Patents are taken out for all process solutions.

The focus area is production of accessory equipment for rolling stock: operator cabin modules, fairings of electric locomotives (face part), interior of operator cabins and passenger carriages. The second line of business is production of non-metallic components and elements of transport ventilation systems: lobes, assembled ventilation units, air duct elements, sound-attenuating and airflow direction systems.



MYS CJSC COOPERATES CLOSELY WITH TRANSPORT ENGINEERING COMPANIES, WHICH ARE LEADERS AT THE RUSSIAN MARKET:

- TransMashHolding CJSC,
- Komven Ventilator Plant CJSC (Moscow),
- Kolomna Plant OJSC,
- VNIKTI OJSC (Kolomna),
- Bryansk Machinery Plant MC (Management Company) CJSC,
- Lyudinovo Diesel Locomotive Plant OJSC,
- Sinara Transport Machines (Yekaterinburg),
- Novocherkassk Electric Locomotive Plant LLC,
- Ussuriysk Locomotive Repair Plant, etc.

Projects of MYS CJSC

- Fairings of electric locomotive EP2K
- Interior of control cabins of electric locomotives EP2K, TEP70BS, TEP70U
- Control panels of locomotive 3TE25K2M
- Fiberglass components for ventilator units
- Blower motors for railway transport

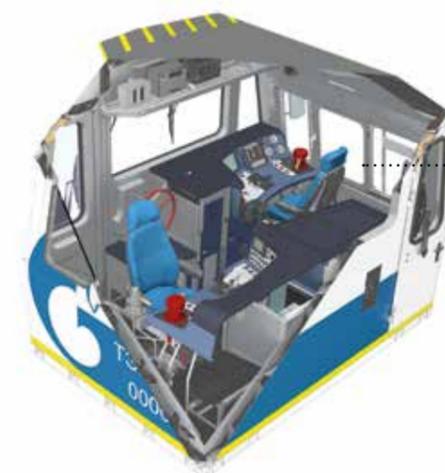


Production Cooperation with LDLP JSC

MYS CJSC has been supplied component parts for Lyudinovo Diesel Locomotive Plant (LDLP) JSC for more than 10 years. During this period, more than 500 manufactured diesel locomotives were supplied with fan impellers.



— Since 2016, the two companies have been implemented the joint project to develop and to manufacture cabins of main-line diesel locomotive TG16M designed for operation within Sakhalin railway.



— In 2018, two joint projects were started to develop and to manufacture cabins of locomotive TEMG1 propelled by liquefied natural gas and commissioned by Gaspromtrans LLC and locomotive TEM10 designed for operation within production enterprises of the Russian Federation. Upon implementation of the projects in 2019, those diesel locomotives will pass certification tests.

Infrastructure for Export Growth



- Projects are being implemented under the auspices of Russian Export Center JSC in cooperation with RR (Russian Railways) Logistics JSC and Transportcontainer PJSC
- Freight Village Vorsino is an anchor point of the Belt and Road Initiative

Beginning from April of 2018, RailCargo freight company has provided a unique opportunity to transport export cargoes using special fares. The price of container freight shipping through the railway route: Freight Village Vorsino terminal — Chengdu terminal (PRC) is equal to USD 1,550 per 40HQ container.

BELT AND ROAD INITIATIVE

- 2016 — project start
- optimal terms in relation to time and cost of cargo delivery from Asia to Europe
- 12-14 days — time of cargo delivery from China
- > 40 000 containers have arrived to Freight Village Vorsino railway terminal from the day of the route opening

FREIGHT VILLAGE VORSINO

- the first Russian multimodal transport and logistics hub of freight village format
- it is included into the master development plan of Moscow Railway Hub, as well as into the terminal list used for distribution of freight traffic flow from Moscow
- services of container and customs terminals, industrial and warehousing property
- total area of the hub is 600 hectares

REGULAR ROUTES OF FREIGHT VILLAGE VORSINO RAILWAY TERMINAL

- Import:
- Dalian (PRC)
 - Shilong (PRC)
 - Yingkou (PRC)
 - Suzhou (PRC)
 - Guangzhou (PRC)
 - Chengdu (PRC)
 - Tianjin (PRC)
 - Ulan Hub (PRC)
- Export:
- Urumchi (PRC)
 - Riga (Latvia)
 - Brest (Belarus)
 - Ust-Luga (Russia)
 - Saint Petersburg (Russia)
 - Chengdu (PRC)
 - Hanoi (Vietnam)

PROJECTS



Digital Container Terminal:

- integration of railway and terminal processes
- automation of terminal operation
- expansion of electronic document workflow



Smart Logistics:

- arrangement of regional train network using Moscow Transport Hub system
- arrangement of trains to the capital, container unstuffing in batches and distribution through the city using light-duty trucks

VMK Invest – Focus on Export Growth



Vladimir SHERSHNEV,
Chief Executive Officer
of VMK Invest LLC



VMK Invest LLC is a modern extrusion plant founded in 2007. This is a full-scale manufacturing facility divided into four areas: casting shop, press line based on 18MN pressing machine, press line based on 28MN pressing machine and packaging workshop. Thanks to its own foundry production, VMK Invest LLC can guarantee quality of the metal, from which sections are made. Nowadays, more than 150 partners are customers of the company.

Growth of non-resource exports is a leading trend of industrial policy of both the region and country as a whole. How relevant is it for your company?

In my opinion, focus on increase of high-technology product export is the most important trend, which is actively supported now by federal and regional authorities. VMK Invest LLC manufactures aluminum sections, which are included into the high-technology product list for priority growth areas of RF Economic Development Ministry. It has to be said that currently the internal market of that industry segment is growing not so fast as we would like. In order for our company to grow successfully in the future, export in the current situation is almost the sole real opportunity to take (idle) equipment into use and to increase output volume. This is why we are currently emphasizing creation of competitive goods. I am sure, such key points should be prioritized by all domestic enterprises, which are trying to integrate into the world economy system. Therefore, I think, the start of the state program for support of export-oriented manufacturing, creation of conditions for export growth are very important for the company. Our export market is Western Europe, where competition is very high. In order to be present there, we should be better than existing players by a substantial margin: in the first instance, we have to ensure perfect quality and reliable delivery; in the second instance, we have to offer a competitive price. European Union protects its manufacturers setting 7.5% import tariff. Taking into account contemporary pricing specifics, it becomes burdensome for our company. Therefore, extension of the state support measures is seen as very desirable and pertinent for us.



Does your company have enough competency and productive capacity to support export activities?

On the one hand, productive capacity to manufacture aluminum sections at the Russian market significantly exceeds real demand, on the other hand, we are operating under the conditions of clear-cut demand seasonality. The seasonality is related to the fact that building industry is the main consumer of our products in Russia. Although, we are actively expanding supply to other industries, for now the tendency is remaining unchanged, when we are operating with only 50% machine utilization in the first quarter of a year. In other words, we do not have issues with productive capacity, we are ready to cooperate with new customers. However, everything depends on external factors influencing demand adjustability. As to competencies, we are trying to comply with traditions rooted in soviet aluminum metallurgy, for which aluminum always was "winged metal" and domestic methods of its industrial production were developed with the express aim of aircraft industry. However, we are combining traditions with contemporary foreign innovations. This includes equipment, raw materials and, of course, effective management, which has undergone ISO audit under control of experts from German TÜV. The qualified team is working at the plant; we are in a possession of experience of the both schools. We are proud to say that sections, which we are producing in Kaluga, fully comply with requirements of European

expenditures for section transporting to external markets. It will give us a significant competitive advantage. For example, average cost of section delivery for 2000 km to Western Europe is €85-100 per ton, and, in many cases, more favorable shipping cost is the decisive factor for contract conclusion.

What are the reasons, thanks to which a high productivity level is achieved? Do you implement methods of labor productivity improvement at the place of production?

We have formed our enterprise in accordance with up-to-date management principles and have focused on high productivity of quality products from the very beginning. Nowadays, VMK manufactures products using only 2 press lines, and, nevertheless, ranks 6th or 7th on the Russian market among extrusion companies by output of aluminum sections. When performing productivity diagnostics, we orient itself at Western European colleagues, compare our figures with BENCHMARK — indicators accepted to evaluate industry segment state. We also cooperate closely with Western European companies and try to use best industry practice at the place of production. Within the national project "Labor Productivity and Employment Support", our company was visited by experts of Federal and Regional Competency Centers. The experts have pointed out high level of plant processes and have recommended further self-sustained development without participation of external consultants.

standards, as well as requirements specification of our customers, and that frequently exceeds general norms.

What measures of state exports support do you consider the most effectual?

Exporters need permanent financing of circulating capital. For that end, they need access to so called "cheap money". Standard payment terms in Europe — 90 days delay. With that in mind, RF Government Regulation, which assumes reimbursement of a part of bank interest rate, is looking most promising. I hope, it will really be implemented in practice. The second important aspect for us is subsidization of a part of transport expenses. This is the program to support manufacturers of high-technology products. According to that program, we can expect reimbursement up to 80% of really incurred



VESTA: Our Goal is Constant Improvement



Andrey VASILEV,
Chief Executive Officer
of Vesta Firm LLC



Vesta Firm LLC has been operating in the corrugated cardboard market since 1990. Using up-to-date equipment, the company manufactures four-valve cardboard boxes, fashioned boxes, non-standard corrugated cardboard and self-folding corrugated packaging with up to 4 color printing. High quality raw materials are used for production. Company's products have repeatedly won awards at all-Russian packaging competitions (Golden Medal "Packaging — Russian Star", Golden Medal "Mister Cardboard").

Vesta products are used by enterprises of various formats, both small and large production facilities in Russia and abroad. Tell us about sales geography. Do you plan to expand your export potential?

Vesta Firm LLC is operating in two directions — machine industry and production of corrugated cardboard. Also, we are providing to our partners a range of services to repair equipment and to recover mechanical parts, we are performing milling, boring, turning, welding and gear-cutting work. We are manufacturing corrugated packaging for various industries: food, building, farming, pharmaceutical, chemical, automotive, etc. Besides Kaluga Region, we are supplying products to Moscow, Tula, Bryansk, Smolensk, Voronezh, Tver, Leningrad and Samara Regions, Republic of Tatarstan, Belarus. Using our packaging, our partners send their goods to Europe, USA and Latin America countries. The second direction of the company operation is machine industry, namely production of equipment for corrugated cardboard industry. Here, we have good perspectives to expand our export potential. Currently, equipment manufactured by us is being successfully operated at Belarus, Moldova, Ukraine, Uzbekistan and Kazakhstan enterprises. We plan to extend our assortment and sales geography further.

What courses of development are adopted for company's promising projects?

The most promising projects of our company are related to increase of logistics and production process automation, equipment upgrade, expansion of product spectrum. A separate development vector is enterprise digitalization, which aim is to increase production by 50% in the next 3 years and to enhance labor productivity no less than 40%. We are actively moving in that direction in order to be adapted to reality of contemporary "digital world" and to retain our competitiveness on the market.

Sustainable production is one of the leading trends of manufacturing these days, how are things going with ecology in your company?

Our production is ecologically-clean, because



all manufactured products are subject to recycling and do not harm nature and human health. Food products can be transported inside our corrugated packaging absolutely safely. Raw waste of our production can also be recycled and transformed into cardboard. Having implemented new technologies, we have achieved better figures in utilization of fresh and secondary raw materials. Those figures are on the same level with European enterprises, for which it is important to create sustainable production in order not to jeopardize nature integrity.

Have you arranged cooperation ties with enterprises of industrial clusters or other industrial plants of Kaluga Region?

As to cooperation, we have one good rule: everything that can be bought (raw materials, component parts and services) in Kaluga Region, we purchase here rather than elsewhere. Currently, we have fine-tuned relationships not only with enterprises of new industrial clusters but also with enterprises, which have multiyear successful history of operation within the region. Such approach allows to minimize logistics expenditures, to increase reliability of our production and to create good partner relationships. On the other hand, those enterprises become buyers of our products, and it facilitates growth of all cooperation participants and Kaluga Region as a whole.

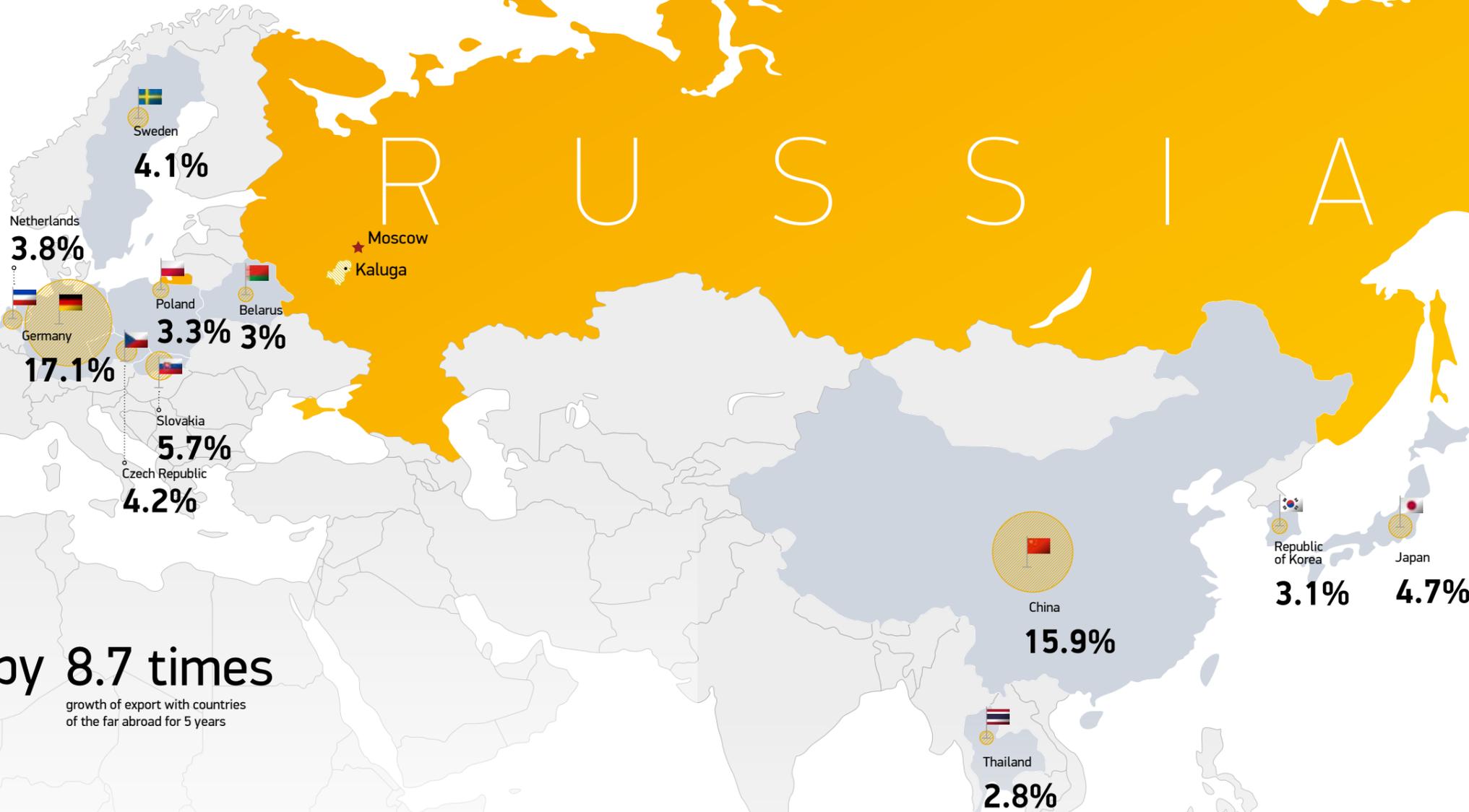
Do you implement experience of

especially successful partners, having production management different from domestic practices?

A dozen of renown world brands is among our partners. Cooperation with them allows us to improve quality management system and to adopt their management experience, various technologies, ongoing personnel training methods. Each of those enterprises performs regular audit of production and quality management system. It allows us to become better. We borrow many decisions from them, not reinventing a wheel and obtaining the result faster.



Main Trade Partners of the Region



Export

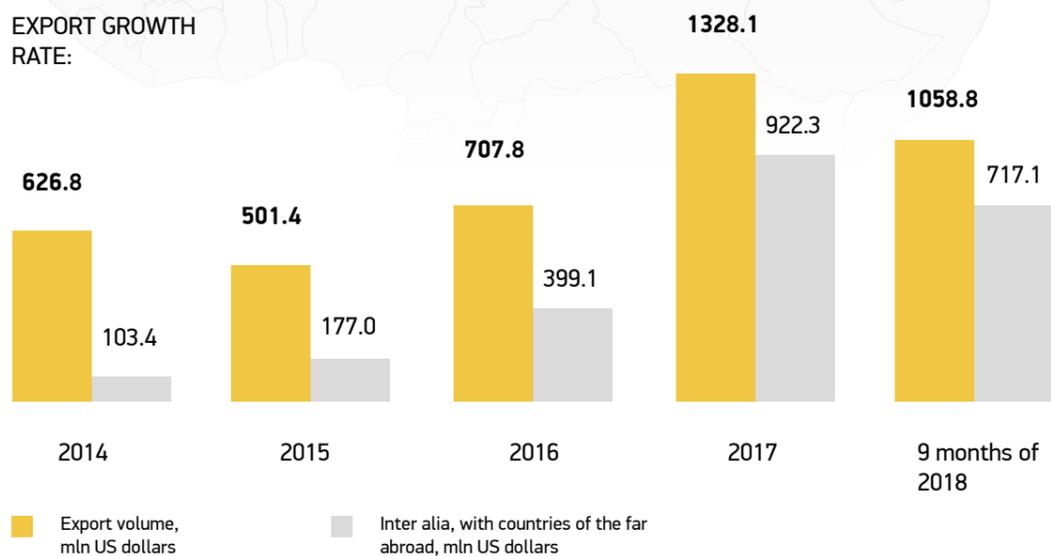
170%

export growth for the last 5 years

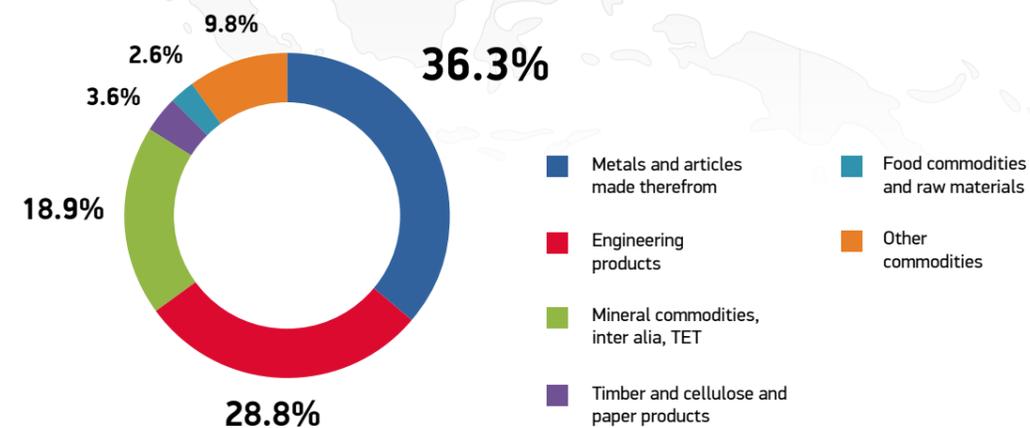
by 8.7 times

growth of export with countries of the far abroad for 5 years

EXPORT GROWTH RATE:



EXPORT COMMODITY STRUCTURE:



Measures of State Support for Manufacturing Industry



AT FEDERAL LEVEL:

01 facilitate enterprises to receive support within RF state programs, Federal Target Programs, PDF (production development fund) programs

02 facilitate conclusion of special investment contract (SPIC) by Kaluga Region enterprises

03 facilitate receipt of federal tax exemptions by enterprises investing in implementation of investment projects

INDUSTRIAL DEVELOPMENT FUND:

from 20 to 100 mln for 5 years

provision of concessional loans to industrial enterprises

8 programs of fund raising

- Development projects
- Machine-tool manufacture
- Component parts
- Defense conversion
- Leasing projects
- Drug labelling
- Productivity
- Digitalization of industry

AT REGIONAL LEVEL:

TAX EXEMPTIONS FOR CORPORATE INCOME TAX:

Register of Investment Projects	Regional Investment Projects (RIPs) (up to 2028 inclusively)	SPECIAL INVESTMENT CONTRACT (SPIC) (UP TO 2025)	
		Federal SPIC	Regional SPIC
Capital investment: from 100 mln roubles – within 3 years	Capital investment: 50 mln roubles – within 3 years; 500 mln roubles – within 5 years	Capital investment: at least 750 mln roubles	Capital investment: at least 300 mln roubles
<p>FB (federal budget) – 2%*</p> <p>RB (regional budget) – 13.5% (4.5% reduction)</p>	<p>FB – 0% (2%* reduction)</p> <p>RB – 13.5% (4.5% reduction)</p>	<p>FB – 0% (2%* reduction)</p> <p>RB – 10% (8% reduction)</p>	<p>FB – 2%*</p> <p>RB – 13.5% (4.5% reduction)</p>
Up to 4 taxation periods	No more than 100% of capital investment amount	For SPIC validity period, but no later than 2025 inclusively	For 7 years, but no more than 50% of capital investment amount

* In 2017-2024, FB tax rate is equal to 3%, RB tax rate – 17%.

TAX EXEMPTIONS FOR CORPORATE PROPERTY TAX:

Register of Investment Projects	Regional Investment Projects (RIPs)	Federal SPIC	Regional SPIC
<p>0% Full tax exemption in relation to property created and/or purchased as the result of investment project implementation within the first three years of project implementation.</p>			

TOTAL INVESTMENT AMOUNT WITHIN THE FIRST THREE YEARS OF PROJECT IMPLEMENTATION

EXEMPTION PERIOD

from 100 to 300 mln roubles inclusively	1 year
from 300 to 500 mln roubles inclusively	2 years
above 500 mln roubles	3 years
above 500 mln roubles (for pharmaceutical manufacturers)	5 years

Measures of State Support for Manufacturing Industry

REGISTER OF PP&E UPDATE AND UPGRADE PROGRAMS

CAPITAL INVESTMENT AMOUNT FROM 5 MLN ROUBLES.

Inclusion of enterprise's pp&e update and upgrade program into Register of PP&E Update and Upgrade Programs.

MEASURES WITHIN PP&E UPDATE AND UPGRADE PROGRAM:

- Purchase of new equipment, creation of new equipment, reconstruction, retrofitting, modernization and/or refitting of existing production facilities, as well as upgrade of fixed property.

Corporate income tax – investment tax deduction (ITD):

Indicator	Corporate property tax			
	Newly-created (purchased) movable property	Upgraded movable and fixed property with relative weight of upgrade cost in object depreciated value:		
Exempt property		Above 76%	from 51% to 75% inclusively	from 25% to 50% inclusively
Exemption type	FULL EXEMPTION		Reduced tax rate 0.5%	Reduced tax rate 1.1%
Investor's capital investment amount within a program (mln roubles)	from 5 to 100 mln roubles inclusively	from 100 to 300 mln roubles inclusively		above 300 mln roubles
Quantity of consecutive grace tax periods	1	2		3
Justification	s. 5 Article 3 of Kaluga Region Law №263-RL as of 10.11.2003			



KRISTALL-RUBIN

j e w e l r y s h o p



1961

KRISTALL RUBIN jewelry shop has for the first time opened doors to the noble world of jewelry art in 1961.

The shop range of products includes:

- jewelry from gold
(inter alia, handcrafted)
- jewelry from silver
- table silver
- exclusive bijouterie
- watches
- icons



*Discount
for wedding rings*

55%



Kaluga
jewelry shop
KRISTALL RUBIN
Kirov Street, 47

+7 (4842) 56-25-01

kristall_rubin

SME Success Depends on Experience and Support of Region Administration



Viktor ZHELNAKOV,
Chief Executive Officer
of Yablochko LLC



Yablochko LLC is a young company with contemporary approach to technology implementation and production organizing. It has been operating in Kaluga Region since 2017. Using Kaluga Sweets brand, the company manufactures 9 types of fruit marshmallow and other products on its production facility made from natural raw materials — souffle sweetmeat, marmalade, fruit leather. To manufacture the products, it uses raw materials from Kaluga and neighboring regions. The company also supplies its products to China.

Why did you choose Kaluga Region among all Russian regions to deploy your business?

Frequently visiting Kaluga Region, I have seen how quickly business grew there. I was in many places in Russia and abroad, therefore I can make comparisons. I was surprised to see how such large quantity of all types of production facilities have arisen so quickly within the small territory. Having studied the information, I discovered that system of small and medium-sized entrepreneurship (SME) support is well developed here. Opening my business in Kaluga Region, I have received help from all levels of authorities: from municipal to regional. Everyone was interested that such small business as mine has come to fruition here rather than elsewhere. All emerging barriers were eliminated in record-breaking time. Colleagues from other regions could not simply believe it. In other regions, you can spend months and years trying to solve organizational issues, which are resolved here within one-three days. I have never encountered such desire to meet the needs of business. In Kaluga Region, you receive maximum result while employing minimal resources and time limits. We are also trying to solve existing issues with regulatory bodies. Their work reduces motivation for further business growth, and regulatory body tools can frequently be used by competing companies. In Kaluga Region, you have to give proper respect to region chief, who tries to create an adequate algorithm of interaction between regulatory bodies and business to reduce load on SME. It is possible, I would not have deployed my business here, if there was no such colossal support from authorities in the region.

What specific state support has your enterprise received in Kaluga Region?



Our company as a SME entity has received help from Business Development Agency (BDA). Having taken part at appropriate time in one of the projects supported by BDA, we were able to receive concessional lending under low interest rate. BDA has Export Development Center operating under it. Because of the fact that we intent to advance in that direction, I am currently undergoing training in the Center. Also, BDA helps us to arrange tradeshows in foreign countries. Particularly, they are currently helping us to organize our product exhibition in Shanghai: we will exhibit our products within the combined exhibition stand of Kaluga Region. I can tell from experience that, within the period of 1.5 year, our enterprise in Kaluga Region has achieved figures, which were achieved in another region at the previous production facility only in 3-4 years. In my opinion, company's success here is related not only to accumulated experience but to regional state support as well. In Kaluga Region, I have many opportunities to settle various kinds of issues: I can receive any consultation in development institutions without hindrance and free of charge, if necessary, I can directly address to representatives of authority. For example, having addressed to municipal officials, we have received help to bring utility lines relatively quickly. Having taken part at appropriate time in one of the projects supported by BDA, we were able to receive concessional lending under low interest rate. Also, regional institutions help us to arrange tradeshows in foreign countries. Particularly, they are currently helping us to organize our product exhibition in Shanghai: we will exhibit our products as a part of the combined exhibition stand of Kaluga Region.

Tell us about your products and plant capacity, sales markets. Is there a chance "Kaluga Marshmallow" will become a regional brand, such as "Kaluga Dough"?

Yablochko LLC manufactures various types of "Kaluga Marshmallow", which has very specific – and unique – flavor. Marshmallow recipe was developed purposefully and, I think, gourmets were already able to feel the difference. Our products are in demand and, hopefully, taste associations of Kaluga Region will be related to our marshmallow in the near future. Anyways, many delegations of Kaluga Region take our company products to their travels even today. Also. We are producing confitures,

marmalades, souffle sweetmeat – we have large assortment. All those products are manufactured under "Kaluga Sweets" brand. Certainly, Kaluga Region is particularly renown by its developed heavy industry, and, in my opinion, food industry is present not so widely, therefore authorities help in its growth. Meanwhile,



situation with sales markets remains relatively problematic. This trend covers all Russia — retailers (large retail chains) dictate terms, which are inconvenient for business. For example, 40-day payment delay, goods return in large quantities. Nevertheless, we try to overcome all obstacles. Even today, the company supplies "Kaluga Marshmallow" to a variety of cities in European part of Russia, Siberia and Urals. We are making first steps in exports development. I already noted, that I am undergoing training in the regional Export Development Center. However, we have started on our own participating in exhibitions in China and exporting small batches. China market is very unique. In order to export food products, it is necessary to adapt them by flavor profile, prepackaging. To ensure successful promotion of a product at the Celestial Empire market, it is necessary to present a large assortment, out of which two or three positions may be selected. Regardless, China market is huge and we are interested in its "capture". The most optimal routes of cargo delivery to China are railway and automobile transport. So far, we are using the second type and paying about 100 roubles per 1 kg of cargo. As to railway transportation, it is more expensive for us as SME, even

taking into account excellent access to international transport corridors created in Kaluga Region. So far, it is beneficial for large companies only, which export products by entire railway trains. I know, Kaluga Region Government is now making some steps to tune export railway shipping operations for small enterprises. Last year, I have taken part

in the meeting of entrepreneurs with Freight Village Kaluga management and deputy governor Vladimir Popov. The agenda was focused on the proposal concerning combination of small batches destined for China. However, although the authorities accommodate requests and arrange such projects, very small number of companies have indicated their willingness to participate for the last half-year. It is surprising that having such state support conditions Kaluga entrepreneurs use them so inactively. I hope, the regional exporter union, which is being created under the aegis of regional Ministry of Agriculture, will allow to change the situation.

Do you plan to expand production capacity?

The potential to increase production capacity was already laid at the production start. So far, we are using approximately 40% of our capacity. At this stage, it is very good indicator for us.

Infrastructure for Industry Development



12
industrial parks

7,539.8 ha
total area

>100
residents

Greenfields
— fully prepared sites for industrial construction

Brownfields
— ready-for-use industrial space

Build-to-Suit
— construction of production space according to customer requirements



gas supply



electricity



water supply



sewage facilities



Gi TAJYU,
founder of **ORAC NV**
company:

"Russian market is strategically important and promising for us. We expand the pool of Russian business partners. Our company is open for new ideas, which will be implemented in Russia. What we were able to do here, in Vorsino industrial park, is impressive. Particularly, commissioning time is impressive".

RESIDENT GETS:

01

personal manager to accompany project

02

sites connected to utility lines

03

access to customs and logistics terminals

2 Kaluga SEZ Sites

1,024 ha
total area



15
residents

0%

- customs duties
- transportation tax
- land tax
- property tax
- VAT

FOR THE FOLLOWING TYPES OF ECONOMIC ACTIVITY:			FOR ALL OTHER TYPES OF ECONOMIC ACTIVITY:
	Income tax:		Income tax:
<ol style="list-style-type: none"> 1 Machine and equipment production 2 Wood processing and wood product manufacturing 3 Production of automobile parts, accessories and engines 	0% from 1st to 5th tax period	5% from 1st to 10th tax period 9% from 11th to 15th tax period 13.5% from 16th tax period to SEZ existence termination	
	3% from 6th to 9th tax period		
	5% from 10th to 11th tax period		
	8% from 12th to 13th tax period		
	10% from 14th to 15th tax period		
	13.5% from 16th tax period to SEZ existence termination		

Infrastructure for Industry Development

140

greenfields

of various land areas within municipalities of Kaluga Region



Fabrizio CELLINO,
Chief Executive Officer
of SMK LLC (Cellino S.r.l.):

"In 2014, Cellino S.r.l. have decided to localize production in Kaluga. Regional Development Agency of Kaluga Region (RDA KR), which accompanied the project implementation, has proposed several brownfield variants for deployment, among which free areas of Kaluga Engine PJSC were chosen. Site readiness level has conformed to all our requirements and the ribbon-cutting ceremony of the first SMK LLC production facility has happened as early as 2015. Automatic robot welding line, unparalleled anywhere in the world and designed to assemble aluminum fuel tanks, was set into operation. In July of 2018, we have upgraded the line and it have attracted new investments. That same year, we have started negotiations with Volvo Group concerning supply of our products, such as air tanks for trucks, as well as tippers made using Gervasi technology – know-how, which was purchased by Cellino company in Europe, for Kaluga plant of the Group."

Founded in 1950, Cellino S.r.l. is one of the largest European manufacturers of truck components, as well as component parts for large-size building and farming machines.

150

brownfields

within the territory of existing Kaluga Region enterprises



Andrey CHURAEV,
Chief Executive Officer of Bosco
Manufactories LLC:

"In December of 2016, Bosco has concluded an investment cooperation agreement with Kaluga Region. In the course of building site preparing for plant deployment within Kaluga-South industrial park, we have for a long time selected premises to organize trial production. The point is, it is very important to take into account a lot of parameters for sewing flow operation: light, temperature conditions, ability to arrange optimally logistics flows, etc. In our opinion, we have found the correct solution, having deployed trial production at rented areas of Oka industrial park. In the near future, we will move to the already built plant within the industrial park, however, we would like to see a new sewing production is operating at our place using already formed and tuned production capacity. In response, we are ready to have partner cooperation with production facility."

Bosco Manufactories manufactures clothing of worldwide renowned Bosco di Ciliegi brand. The first Russian plant of the company is being built in Kaluga Region. Growth strategy of Bosco Manufactories assumes entry into markets of CIS and EU countries.



Anna KIZINA,
authorized person for construction of facility to
manufacture medical products based on collagen,
BioPHARMHOLDING LLC:

"To increase volumes and to expand Collost product line, in 2017, the company management has made a decision to create a new, full-cycle, high-tech manufacturing facility in Kaluga Region. Site selection process was hampered by the requirement to have a sanitary zone around the facility, however, I would like to thank specialists of Regional Development Agency of Kaluga Region, who have rendered us invaluable assistance. A brownfield in Mosalsk has become the most convenient variant for us. Two years later, we are preparing to commission the first Russian workshop to process hides and derma of animal origin to manufacture medical products. At the same time, work is in progress to construct "clean premises" of D/C/B/A classes according to GMP standards. Ongoing accompanying by the Agency and municipal authorities facilitates accelerated brownfield redevelopment and creation of new jobs."

Beginning from 2001, BioPHARMHOLDING LLC is developing and producing COLLOST™ medical product based on original technology designed to create native, unreconstructed collagen of I type with high biocompatibility. The product is used in various medical areas and is merchandised within the territory of the Russian Federation and in other CIS countries. In 2020, new products created using patented new technologies will supplement COLLOST™ product line.



Denis GUZILOV,
Chief Executive Officer
of Trusted Products LLC:

"When we had to choose a site in Kaluga Region to organize production of Greek yogurt, we have used the help of Regional Development Agency. Together with Agency's professionals, we have inspected several deployment sites — it has to be said that selection is really large in the region. In the basis of project implementation period and available initial investment amount, decision was made to purchase a brownfield within the territory of former Iznoski milk processing plant. We have performed capital repairs and premises upgrade at the plant. Together with our foreign process engineer, we have arranged the whole production technology. Currently, we are actively promoting sales."

Trusted Products LLC manufactures products based on Greek yogurt under Venn's brand at the milk processing plant in Iznoski district of Kaluga Region. Within 2019, Trusted Products LLC plans to achieve product output up to 4 ton per day with a subsequent output increase.



L'Oréal: Corporate Social Responsibility

L'Oréal is the world cosmetics leader and is a synonym of beauty, quality, excellence and innovative scientific achievements in 150 countries of the world for more than 100 years. The company goal is to provide the right to beauty for everyone, the mission — to make beauty affordable. After all, beauty gives us self-confidence. The rich history of L'Oréal in Russia already includes more than 25 successful years. Nowadays, L'Oréal is present in Russia in all distribution channels: beauty salons, apothecaries, own boutiques, supermarkets. L'Oréal is represented in Russia by 26 international brands, it is the leader of cosmetics market*. September 23, 2010, there was the official opening of the first L'Oréal Group plant within the territory of the Russian Federation. The plant is located within Vorsino industrial park in Kaluga Region and it manufactures haircare products (shampoos, after shampoo products), hair dyes, as well as skin-care products under L'Oréal Paris and Garnier brands.



SUSTAINABLE DEVELOPMENT COMMITMENT

L'Oréal plant in Vorsino complies with the highest standards of quality, safety and environmental protection. Being a socially and ecologically responsible company, L'Oréal is actively working in order to reduce environmental impact, inter alia, increases efficiency of production processes, takes measures to increase energy efficiency and to improve thermal insulation of buildings. In September of 2017, solar panels were installed within the plant territory, they generate up to 10% of the total energy consumed by the plant per year. Implementing L'Oréal sustainable development program "Sharing Beauty with All" (it envisages measures up to 2020), the plant was able to reduce CO2 emission

significantly and to reach zero waste disposal at landfills. The new production space of the plant, commissioned in 2017, was certified according to the world most rigorous certification system for sustainable and energy-efficient building construction LEED v.4 and has received certificate LEED v4 of Platinum level. Thus, L'Oreal plant in Vorsino has become the world first production facility, which received LEED v4 Platinum certificate. The special emphasis in the plant expansion project was placed on implementation of up-to-date, highly-efficient water treatment technologies, which have allowed to upgrade the local treatment facility and to ensure 95% recirculation of sewage water.

BEAUTY FOR A BETTER LIFE

In 2009, L'Oréal Group Fund has initiated and started international program "Beauty for a Better Life" basing on the firm conviction that beauty can deliver specific social benefits. The program mission is to help vulnerable segments of the population to gain self-confidence and to ensure social integration using hairdressing, makeup and self-care trainings. In Russia, joint project of L'Oréal and charitable endowment "Who If Not Me?" was started in Kaluga Region in 2010. 6 hairstyling rooms and 4 nail shops were

opened in social childcare institutions of Kaluga Region within the scope of "Beauty for a Better Life" program from 2010 to 2017. In 2010, the first hairstyling room has begun to operate in Obninsk orphan boarding school Hope. In June of 2012, there was the first hairstyling exam for 9 female students from three Kaluga Region institutions, who have mastered hairdresser profession. Female graduates have received beginner course certificate and L'Oréal diploma. Over the course of project existence, 195 students have completed training in hairstyling rooms. The rooms are equipped with workplaces, which have armchairs and mirrors, installed washers and hair driers, as well as everything required for full-scale theoretical and practical training using technologies and products of Matrix professional brand. In 2014, a new specialization was opened in the scope of "Beauty for a Better Life" program – nail shop training. The first



The program mission is to help vulnerable segments of the population to gain self-confidence and to ensure social integration using trainings.

room has been opened in Azarovo orphan asylum. In 2016, the second room was opened in Kaluga orphan boarding school No.5 for hearing-impaired and late-deaf children, and in 2017 – in Kirov orphan boarding school and Kaluga school for children with limited health abilities "Harmony". Joint project of L'Oréal and charitable endowment "Who If Not Me?" is being successfully implemented for more than 9 years helping pupils of orphanages to enter into adulthood with necessary communicative skills, as well as unique professional knowledge, which will surely help them in the future. Youngsters not only receive new abilities for development and self-fulfillment, but also a real chance to try hand in a new job and become beauty industry professionals.

THERE IS ACTIVITY FOR EVERYONE

In 2019, L'Oréal commemorates 10th anniversary of corporate day of social responsibility. Each year within the last 10 years, L'Oréal employees around the world dedicate one business day to bring their qualifications and energy in aid of non-governmental and environmental organizations. In June of this year, employees of L'Oreal plant in Vorsino together with charitable endowment Who If Not Me? will visit Orientir social rehabilitation center in Balabanovo, where they will organize a quest for children. The plant employees will also paint benches and plant trees in Obninsk orphan boarding school Hope. They will visit Veteran Club organizing a concert and giving gifts, and will arrange sports festival in Trust rehabilitation center for children and teenagers with disabilities. On that day, a bench made from recycled materials will be installed in Obninsk public park, and a river bank within the territory of Vorsino industrial park will be cleaned.

KEY INDICATORS OF L'ORÉAL GROUP:

- 1st** cosmetics Group in the world — turnover in 2018 **€ 26.9 bln**
- 150** Countries of the world Employees around the world **86,000**
- 505** patents registered in 2018

Important contribution into the growth of Kaluga Region economy

Selection of Kaluga Region for the plant construction was based on the fact that the regional economic development policy creates optimal conditions for the project implementation. Kaluga Region is a recognized industrial center and has an ideal geographical location to supply the central part of Russia. Expansion of L'Oréal plant in Vorsino has helped to increase employment level in Kaluga Region. L'Oréal continues to employ specialists of the region and to develop partner relationships with local suppliers. In May of 2019, L'Oréal plant was awarded three times at the Regional Prize Ceremony "Employer of the Year – 2018".



*Source: L'Oréal based on Euromonitor International 2018 data

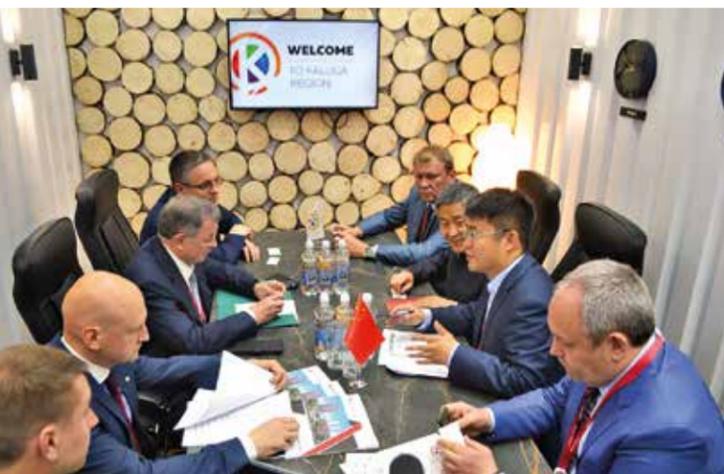
St. Petersburg International Economic Forum 2019

30

business meetings

17

agreements

RUR 17^{bln}total investment amount
according to agreements

NEW RESIDENT OF KALUGA SEZ

Kaluga Region has signed agreement with Sy Tszefu, chairman of the board of Harbin Electric Corporation (HEC), concerning construction of a plant to manufacture boilers, steam turbines and turbine-generators for 200, 300, 500 and 800 MW generator units of thermal stations within the territory of Lyudinovo site of Kaluga SEZ. The size of the land plot is about 22 hectares. Planned investment amount is 10 bln roubles. HEC is one of the largest power station equipment manufacturers in China. The company manufactures more than 3 thousand different products for oil refining, chemical industry, machine industry, metallurgy, nuclear energetics and defense industry.

RSPIC WAS SIGNED BETWEEN KALUGA REGION AND NESTLE RUSSIA

The Region Government and Nestle have signed the second Regional Special Investment Contract (RSPIC). It is planned to invest 4.3 bln roubles in expansion and upgrade of production capacity of Nestle Purina Pet Care plant (Vorsino industrial park). At the contract signing ceremony, Marcial Rollan, head of Nestle in Russia and Eurasia, has told the following: "We highly appreciate support, which is being given by Kaluga Region Government to Nestle, and confirm our commitment to further business development in that region."



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