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# NLMK GROUP

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## Dear colleagues!

NLMK Group's development of a unified technological process, whereby all the links of production chains from the Altai to Pennsylvania are synchronised, is an important goal that we are working towards step by step. We make NLMK's tremendously complex mechanism work better and faster by eliminating internal barriers within the Group. We are achieving the goals we have set and attain record efficiency even in a challenging market environment.

This is not just a case of eliminating the borders between our component companies, it's about creating closer connections: a single information and conceptual environment; close-knit teams within functions; and cross-functional teams across the Group.

Tools for internal communication, such as team-building sessions which bring together employees from different sites, play an important role in this process. Initial steps in this direction have already been made by our financial and HR services, procurement, logistics, OHS, R&M, investment projects, risk management and internal control functions. Team sessions that bring our employees together around a single goal are held regularly at Group management level as well as at individual companies.

Our efforts are already yielding results. Now that key business processes have already been set up for individual companies and functions, shared projects are the most appealing in efficiency enhancement terms. An example is our project to optimize logistic processes at Stoilensky, which included initiatives to optimize BU KPI based on business process analysis and their place in the company's value chain; or the project of setting up a payment factory which already covers our Russian and European sites and continues to expand; or the project



to create HR competence centers that involve both HR specialists and experts from the departments which formulate the requirements for these centres.

As the 'quick wins' period of our operational efficiency programme comes to an end, the promptness and quality of decision making within the Group come to the fore. Nowadays more than ever we need to strengthen horizontal connections as part of our cross-functional teams, as without this the transition from one-off gains to continuous improvement is unthinkable. Connections should be set up in such a way that any objective can be resolved without excessive written exchanges.

We are half way towards the development of a true open space within the Group and everyday the NLMK team becomes more and more close-knit, and that means that the entire Group is becoming more efficient in the face of new external challenges.

Oleg Bagrin  
NLMK Group President and CEO



## NLMK Europe: reset

*Implementation of NLMK Production System principles at NLMK Europe*



In 2015 NLMK Production System (NLMK PS) principles and tools have started to be adopted at NLMK Europe – Strip Products under the declared strategy aimed at NLMK Group assets' operations efficiency enhancement.

NLMK La Louvière was selected as a pilot company. The team responsible for NLMK PS development has already been defined at the company, and main optimization areas – “bottlenecks” of the production chain – have been selected: hot-strip mill and pickling line.

One of the initial stages of NLMK PS transfer is personnel training in new principles and approaches. Engineers of cold and hot rolling shops, Camille Miroir, Hamid Yousaf, Samuel Nokam, were selected as “in-house coaches”, who will in the future be cascading the knowledge related to NLMK PS at their company.

In order to train the future “in-house coaches”, three-day onsite

training was arranged for them at NLMK. The project manager, Renaud Moretti, Director for Production, NLMK La Louvière, was also directly involved in the training.

The training program included 2 main parts:

- theoretical training in the course of which the trainees got to know the main principles of NLMK PS, methods of selecting the most appropriate tool for any given task, new approach implementation procedure and methods of such approaches efficiency evaluation,

- hands-on training in the course of which the European colleagues had an opportunity to see how the tools are actually applied on site in NLMK shops as well as to practice new approaches themselves.

During the on-site training the examples of successful A3 projects implementation in the Rolling Production were shown to the trainees,

## By personal example

*NLMK managers complete OHS culture training*

At the end of May, a seminar on the development of a culture of safety for production unit managers took place at the Lipetsk center for corporate training with the support of NLMK's professional personnel development department. The seminar was lead by Viktor Togobersky, NLMK Group Director for Occupational Health and Safety.

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19 Novolipetsk managers took part in the seminar.

The goal of the seminar was to introduce managers to basic OHS principles; and to teach them about management behaviour models that could enhance occupational safety. Viktor Togobetsky pointed out that the development of a culture of safety relies largely on management behaviour models. A manager has to lead by example, promoting safety among employees.

'At the seminar, we looked into root causes of accidents; at ways of preventing them; and at what managers can do personally to

contribute to the process. We tried to assess the state of NLMK's existing safety culture and the impact that each of the participants in the seminar had on the development of the culture of safety at the plant,' said Oleg Tsybanenko, Head of Development at the OHS Department.

These seminars have already been organized for all Russian and

international companies of the Group. Two similar sessions will take place at Novolipetsk in the near future.



*3 questions about NLMK Production System to Renaud Moretti, Operational Director of NLMK La Louvière*

**1. Renaud Moretti, what is your general impression from the visit to NLMK?**

The training program was very interesting to us. This on-site training was very impressive especially the efficiency of the system and the large area of implementation. The new

approaches are very rigorous. We discovered the main principles of NLMK PS (Production System) and how to apply these tools in our plant. We had a lot of constructive exchanges with our Russian colleagues. We shared best practices and experiences.

**2. Do you use any similar tools at your plant or all the methods seen are completely new for you?**

NLMK La Louvière was identified as a pilot company because our plant has an important potential of improvement. We already use some of those tools in our plant: 6S, A3, visual management... For instance, we have successfully developed the 6S method at the roll workshop in HSM and cold rolling mill. Now we will complete or adapt these tools with the new approaches we saw during the training.

**3. Which tools in your opinion could be the most efficient for your plant? What are going to implement at the first stage?**

It is time to raise our game in terms of operational efficiency. Our priority is to improve the equipment availability by learning and avoiding repeat failures by using good methods. In addition to 6S, A3 and visual management, we will implement the PEIS IS in our plant. This system will collect all the downtimes of our operating lines and some keys parameter deviation. We will use it in order to help technical organization to focus resources on the main root causes of our failures. We also want to develop the mapping of repair and manufacturing operations. This tool will free up time for steel production. A plan of NLMK PS Development will be prepared. The first step has started. We will give you more details in the next magazine.



# Efficient interaction



**T**eam-building sessions have become a tradition for NLMK Group management. They help bring NLMK's top-management team together around a single goal and promote cross-functional interaction within the Group.

The fifth team-building session was special. Functional heads met in Moscow to discuss the priorities of the Group's HR strategy leading up to 2018 including goals and objectives

in relation to the strategic goals and objectives of NLMK Group as a whole.

At the beginning of the session, Stanislav Tsyrlin, NLMK Group Vice President for HR and Management System, presented to participants the results and analysis of an electronic survey held among the managers a few days prior to the meeting. The survey was about the interaction between the HR service and other functional units of the Group. Considering these results, the HR department prepared a list of priorities

for future strategy and put it up for discussion at the session.

Top-managers split into small groups to discuss HR partnerships, motivation systems and career planning, employee training and development, as well as business process optimization. After that, each group presented the results of their discussions to the others.

'We received all the necessary information and feedback and plan to present the Group's HR strategy leading up to 2018 at the Management Board

meeting in June. Given the serious changes that have taken place in the company, including the changes to the management team, and the challenging economic context in the industry and overall; as well as intense competition that calls for consistent improvement, the importance of efficient top management interaction increases manifold. Team-building sessions allow NLMK Group managers to work more efficiently as a single team and tackle strategic challenges together,' Stanislav Tsyrlin said.





# Champions of change

Grigory Fedorishin, NLMK CFO, talks about life 'beyond budgeting', his expectations of his employees and his belief that leadership can be taught.

Yulia Taranova

**You brought NLMK Group finance employees together at the beginning of the year for a conference in Lipetsk. What goals did you set for them?**

At the conference I set goals both for my team and for myself, in fact. Firstly, I wanted to tell my team what is going on in terms of strategy and development. Secondly, I wanted to summarize what we achieved within the financial function over the last two years. Thirdly, we needed to discuss how we could move the process forward. It was also important to me that people from different departments that normally communicate over the phone or by email could meet face to face. What I took away from the conference is

that my employees share the main goal of the financial function as a business partner. The team now has a clear vision regarding how we fit into the overall strategy of the company, the strategy of operational efficiency.

**When you took on the role of CFO, the structure of the finance function was quite different. Two years on and a lot has changed, you have a truly closely-knit team. How did you go about setting up the structure of your function in order to make this work?**

As I noted during our first interview two years ago, the team was strong to begin with. We specified the tasks at hand; eliminated functional duplication; and what I think to

be most important, we fine-tuned cross-functional communication. For instance, financial experts and economists are very different roles, with different tasks, and they could find themselves isolated from one another. I set up our work so that all the individual functions – controlling, corporate finances,

When the employees have a clear grasp of our common goal, they know what to do within their sphere of responsibility better than me





Grigory Fedorishin at the financial function conference

strategy, reporting and accounting – constantly interact within joint projects. Moreover, I think I gave my team enough independence to resolve their tasks, focusing more on determining our priorities. When the employees have a clear grasp of our common goal, they know what to do within their sphere of responsibility better than me.

**Could you give an example of such independent development?**

For instance, the 'payment factory' that grew out of the idea of centralizing the treasury across Russia. Since then, the project has evolved way beyond its initial boundaries. We now have a centralized treasury in Europe. The project is developing, and the lead makes her own decisions about where to take it next. Or, for instance, our accounting center project, that has moved beyond just accounting processes and now works on related tasks such as organizing the procurement service back-office. This is happening because



**CONTROLLING  
TAUGHT ME THAT  
'ECONOMICS'  
AND  
'PRODUCTION'  
AREN'T  
SEPARATE  
CONCEPTS**

the accounting center has developed the competencies necessary for efficient participation in other processes. I observe and adjust the way a function develops, I learn from the team.

**You said 'learn from the team'. It's usually the other way round, with the manager training the team.**

When I started in this role I was very familiar with some of the financial function areas including reporting, strategy and corporate finance. Areas such as the treasury and process economics were relatively new to me and so I had to learn from my team. There are also non-technical aspects, when you are exposed to new styles of communication and management. One of the best examples is controlling. I realized how deep you have to go into the essence of the business and all the processes to give out the right recommendations so that they wouldn't be perceived as coming from a novice. Controlling taught me that 'economics' and

'production' aren't separate concepts, they are two aspects of the same thing. And the depth to which an economist can be immersed into the business was a real revelation to me.

**Since we are talking about the team, have the expectations you have of your employees changed over the last two years?**

I remember that in our last interview I said that the most important thing is for people to have the drive to grow and to learn, to not stop doing so, and I am glad to see this happening. I find the term 'champions of change' particularly pertinent here. A company as big as ours needs people that can constantly 'shake up' the system and lead the process of change. I like to think of our function as a champion of change. That's why development and initiative are what I still expect from my team first and foremost. This has to do with the fact that the company itself continues to change, we

A company as big as ours needs people that can constantly 'shake up' the system

operate in the context of continuous improvement. We understand that change is not a stress that must be passed through, nor is it a given. We have to be constantly in the flow. We have stopped seeing operational efficiency as a project; we now treat it as a continuous process.

**And are you seeing impressive results?**

Yes, the results are good and this is why we continue to push forward.

We used to have 20 operational efficiency projects, then 200 and now there is up to 1500 of them. Obviously this system requires a completely different level of support from the financial function. This is one of our key goals. We adjusted ourselves to 20 projects, then to 200, now we are working on accommodating 1500 and upwards.

**What do you do to achieve this?**

An example is forecasting. Currently, the company has understandable and objective information at hand about the economic consequences of business decisions. But this is not enough. The market is changing quickly, and it is necessary to assess what is going to happen next; that is why the focus is shifting to forecasting information.

**But forecasts are a thankless occupation, wouldn't you say?**

I think it was Eisenhower who said that 'plans are nothing; planning is everything.' Plans can come to fruition; or they can fall through. What's important is that you are thinking about the future. We discussed a concept called 'Beyond Budgeting' at a conference we held with an outside expert, which outlines the three main aspects of planning. First of all, you have to set ambitious goals. Secondly, you need to make objective forecasts of what is going to happen to the market; which can be more responsive and conservative than the goals. And thirdly, you need to plan how you are going to distribute limited resources.

**And this concept suggests dividing these aspects?**

Yes, the idea is to take care of each of the three aspects separately. Each plan has different goals; and bringing them together as part of the budgeting process can result in a conflict of interests. It was



Bjarte Bogsnes, author of the 'Beyond Budgeting' concept, signs books for conference participants



exciting for us to realize that we are already applying elements of this concept, albeit without the fancy name. For instance, it's been quite some time since we separated operational efficiency programme planning and annual budgeting. This means that we don't work on operational improvements once a year; for us it is a continuous rolling process: we analyze our current programmes and create new ones, setting aggressive targets. Every element that has been devised is included in the budget. We also have forecasts that are developed objectively with no ties to being above or below the budget, for instance our rolling 12 month cash flow forecast.

#### What are the drawbacks of traditional budgeting?

In certain cases the budget can trigger the wrong kind of motivation, for instance to exhaust available funds by the end of the year. Other management practices and tools exist, some of which are radical, for example not to set any limits. This means that each department gets to decide for themselves how to spend their funds rationally.

#### It seems a little dangerous to spend as much as you want without limitation...

Of course for us it seems unusual. But companies that do apply such policies don't see their employees begin overspending mindlessly. In fact, the statistics show that expenses can be reduced because people begin to think about what they spend more carefully, taking responsibility instead of blindly relying on a pre-set budget limit. Moreover, other instruments come into play, such as relative benchmarking. A rating of business units is drawn up based on a particular manageable cost item. No one wants to be at the bottom; but those that do find themselves at the bottom of



One of the internal goals we've set for this year is a strong focus on team training

We have to draw attention to the issue; help the business to develop a response; and control what it leads to

the pack can try to analyze what went wrong and rectify the situation. This results in a cycle that is not regulated by the budget and yet still leads to cost cutting.

#### What changes to the budgeting process should we expect this year?

This will be changes aimed at reducing the time it takes to prepare the budget. The function has great potential for gains made where process and IT system changes meet. So we are going to focus on a programme of IT projects within the financial function within this year and the next.

#### This programme will enable automation of some budgeting processes?

That too. It's a cross-functional project that involves three business units: the controlling directorate; the consolidated financial reporting directorate; and the accounting center. Alongside optimizing the budgeting process, the new system enables so-called parallel accounting that synchs RAS and IFRS accounting. This information will also form the basis for management accounting. Financial

reporting will take less time and the quality of analytical data will improve. Some of these projects will be completed this year. We plan to prepare the Lipetsk site 2016 budget in the new system.

#### Two years ago one of your first projects was to introduce MBO (Management by Objectives). How would you assess it today?

The most important thing I can say about the MBO system today is that it is in place and functioning in two dimensions: business process efficiency and employee efficiency. In terms of the latter, there are already over 300 people within the Group that are covered by the MBO system, and we continue to roll it out further. The other dimension is business process efficiency.



#### Does this mean a single set of KPI-s for all?

Yes, there is a single set of KPI-s and we are all used to that. It's a very useful tool to have, because we can benchmark our companies against one another. We are now entering a new stage in the development of the system. We have unified reporting by key parameters and by implementation of operational efficiency programmes. We don't just state a particular indicator has not been achieved; we instantly start thinking about corrective measures. For instance, which of the operational efficiency projects can mitigate a negative deviation. And this is far more important for the company than just knowing where we went wrong. Over the two years working on operational efficiency programmes we have come to realize that we keep encountering the same weak spots; and now it's time to decide what to do with them. This means resolving several tasks: drawing attention to the issue; helping the business to develop a response; and controlling what it leads to.

#### If we talk about cross-functional projects with adjacent BUs, do you, the financial function, have any experience resolving the conflicts of interests that often arise in such contexts?

The most important thing is to have a common goal. The very root of such

conflicts needs to be eradicated. I'll give you an example. Many of the 1500 operational efficiency projects are cross-functional; and it's not always clear where a project originated or who made the biggest impact. This led to unproductive discussions and conflicts, until we came up with a very simple solution: the entire effect that was achieved is attributed to each of the participating BUs. And this helped: there are more and more cross-functional projects that would not have been possible before precisely because one of the parties was lacking in interest.

#### Besides the IT programme and operational efficiency support projects, what other goals do you have today?

One of the internal goals we've set for this year is a strong focus on team training. Everyone has their individual needs and wishes: it could be change management, project management, development of leadership qualities, etc.

#### So you don't agree with the opinion that you cannot train a talented manager, the talent is either there to begin with or not?

Not at all. This actually contradicts the idea of continuous training and development. The right management style can be taught; one can find an approach that is comfortable for both the individual and the team.

#### Which management style do you prefer?

The coaching style whereby the manager acts as a mentor. This means that employees have a degree of independence, an understanding of the overall vision as well as the necessary support. ●

# Single production mechanism

Alexey Dagman, NLMK Technical Director, talks about setting up and developing a single process environment that brings NLMK Group companies and steel product consumers together.

## TECHNOLOGY OF UNITY

NLMK Group's single process environment is a single system for planning, accounting, controlling and improving technologies at all production stages, from mining ore to manufacturing high value added products. NLMK Group currently comprises companies with their own plans, facilities and technologies located not only in different cities, but across different continents. Working within a single process environment breaks down these barriers and sets up a single technological process with a common goal: maximum end-to-end efficiency. This process is managed through work plans, check lists, and regular meetings. Work groups are created to resolve complex issues, comprising experts from different fields – not only technical experts, production and energy managers, but also representatives of logistic, economic, procurement, sales and IT services.

## THE FINEST COKE

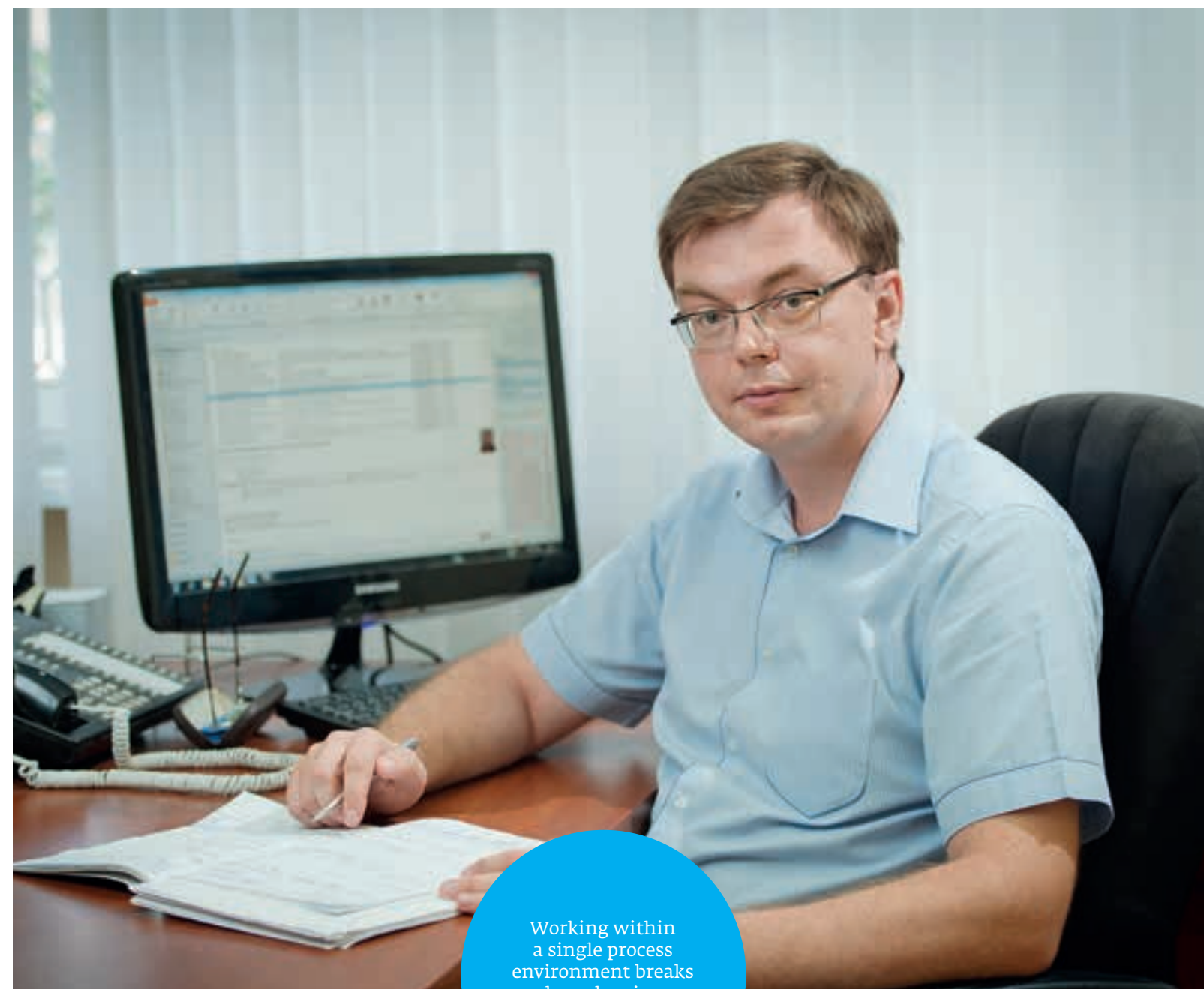
Setting up the single process environment began back in 2013 from

Setting up the single process environment began back in 2013 from a joint project between Novolipetsk and Altai-Koks

a joint project between Novolipetsk and Altai-Koks. The objective of the project then was not only to improve the quality of coke and reduce its cash cost, but also to boost the productivity of blast furnaces and to reduce energy costs.

This approach brought together coke and chemical experts and blast furnace operators: once coke properties were altered, the team had to figure out a way to work with it efficiently; and equal participation in the project eliminated the cross purpose between the two stages of production. Solutions that result in improvements in one stage now don't weigh on the results of the other.

The next important step was to unify the quality of coke. Common requirements have been identified, so the coke has the same characteristics wherever it is produced, be it Novolipetsk coke and chemical operations or Altai-Koks, the only difference is the method of quenching. It made the overall process organization more flexible and enabled stabilization of the blast furnace process.



Working within a single process environment breaks down barriers between NLMK Group companies

We systematically monitor the entire process chain; that the quality characteristics of coke and pig iron comply with the set requirements; as well as the impact of changes to technological parameters on the quality of all operations. We are working together on optimizing our coal raw material base and organizing the logistic interaction between Novolipetsk and Altai-Koks, distributing the flows of wet

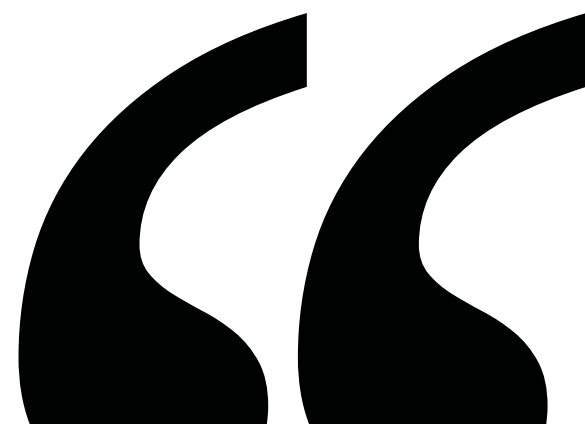
and dry quenched coke across our blast furnaces. As a result the coke produced at Lipetsk and Zarinsk coke plants today is the best quality metallurgical coke in Russia. Blast furnace operations at Novolipetsk have been improved significantly since

2012. We are constantly looking for new ways to improve on our results.

## RAW MATERIALS

The second project was to establish collaboration with Stoilensky. Three ongoing work groups were created in 2014, which have identified common quality standards for iron ore raw materials; single quality benchmarking methods; and control methods for iron ore and





# THERE ARE FIVE JOINT PROJECTS CURRENTLY UNDER WAY WITH NLMK EUROPE

concentrate. We have developed regulations for inter-lab comparative tests of the chemical content of sinter and blast furnace iron ores and sinter concentrate. This allowed us to eliminate data inconsistencies between Stoilensky and Novolipetsk in terms of the Fe content in iron ore raw materials.

Experts from Novolipetsk and Stoilensky are working together on fine-tuning the technology. For instance, they have studied the possible alterations to the fraction composition of sinter ore and their impact on the pelletization of the

sintering mix. We have managed to reduce the range of fluctuation of the mass fraction of Fe in the sinter ore, improving the quality of the agglomerate and saving expensive coke for the company.

We then rolled out our work principles to the suppliers of fluxing materials. We are working together with Dolomit and Stagdok on optimizing the fraction composition of dolomite and lime, including the possibility of supplying one lime fraction instead of two to Novolipetsk. Last year, Dolomit mastered the production of a new 30–50 mm

At a meeting with the delegation from Mikhailovsky GOK in March 2015, we discussed the issue of comparing sampling methods; determining quality standards for pellets; their use in blast furnace operations; joint verification of quality compliance with regulatory documents



fraction. At the same time, experts from our technical center, refractory shop and NLMK's energy efficiency center developed a dolomite calcination in the rotary kilns at the refractory shop.

As a result of these measures, BOF Shop #2 now has a supply of captive calcinated dolomite that replaces part of the magnesium slag materials purchased off the market; it has increased furnace lining life, consequently boosting steel output. Screenings of dolomite used in sintering operations increases the content of magnesia in the agglomerate, boosting the desulphurizing potential of blast furnace slag and, consequently, leading to reduced coke consumption. So it isn't just processes impacting each other at different process stages – the goal is mutual improvement.

## ROLLED PRODUCTS

Alongside our raw materials division, we are collaborating with VIZ-Steel and companies of the NLMK Europe and NLMK USA divisions. Two work groups have been created together with the Yekaterinburg-based plant that are currently leading four projects. These are aimed at improving product quality; and at mastering the high permeability transformer steel technology at Novolipetsk.

It isn't just processes impacting each other at different process stages – the goal is mutual improvement



As part of the single process environment, we also collaborate with other companies

There are five joint projects currently under way with NLMK Europe. The development of a technology to produce slabs for subsequent rolling into sulfide corrosion cracking resistant plates; and works in BOF Shop #2 to improve the efficiency of eliminating non-metallic inclusions in steel deserve a special mention. Experts from OMK (United Metallurgical Company) are also involved in the project.

Moreover, NLMK produces steel that features superior chemical composition standards, and in dimensions that are unique for the Russian market, for OMK. This steel is used to manufacture tubes for oil and gas pipelines. Efforts put in by experts from both companies ensured compliance with the strictest steel quality requirements.

We are also working with our partners from NLMK USA to improve the consumer attributes of our steel.

As part of the single process environment, we also collaborate with other companies. At a meeting with the delegation from Mikhailovsky GOK in March 2015, we discussed the issue of comparing sampling methods; determining quality standards for pellets; their use in blast furnace operations; joint verification of quality compliance with regulatory documents.

To summarize, we have to note that the single process environment system proved to be not only viable and efficient, but vital. Continuous joint efforts of different experts allow us to identify and implement the most efficient solutions not only at a specific stage of production, but, more importantly, along the entire process chain. In this context, NLMK Group companies and divisions can truly work as a single production mechanism. This allows us to reach our common goal: to become leader in the steel sector. ©



**Sergey Napolskikh,**  
General Director,  
Stoilensky:

*The principle of a single process environment involves unified planning; regular information exchange between companies; continuous joint control over product quality; fine-tuning of technical processes; and achieving an end-to-end effect for the entire Group. This applies primarily to production processes: reducing product cash costs; getting the most of our equipment; and fully supplying Novolipetsk with our concentrate.*

*As a result of operating within the single process environment, we have managed to reduce the range of Fe content fluctuations in our products. We are currently looking to optimize the content of moisture in the concentrate to ensure efficient transportation and mixing; as well as lab tests to identify the impact of iron ore concentrate size on the sintering process. More intense cooperation with Novolipetsk as part of the single environment enables us to achieve prompter production management, increasing its efficiency and minimizing the amount of spare parts we have to purchase from third parties.*



**Pavel Lizogub,**  
General Director, Altai-Koks:

*Collaboration between Altai-Koks and Novolipetsk as part of the single process environment involves the production of coke with set quality characteristics for use in a specific blast furnace; as well as continuous improvement of the quality characteristics of coke depending of the specific requirements from blast furnace operations. Coke is produced by strictly following our checklists. These were implemented to ensure a consistent coal charge composition to stabilize the quality of the coke we produce.*

*One of the key goals for 2015 is the optimization of the technological parameters of our coke and chemical process, by changing the structure of coal raw materials that is set out in the checklist. We have to increase the level of homogenization of the coal concentrate we receive, primarily in order to increase gross yield, as well as coarse size coke; to improve the quality parameters of coke, including maintaining the CSR level that we achieved in 2014 at a stable high; improving cold strength and wearability, in connection with the need to reduce logistic losses when delivering coke to Novolipetsk, reducing and stabilizing moisture of wet quenched coke regardless of the time of the year.*



**Valery Vyalov,**  
General Director, Dolomit:

*We began working within a single process environment at the plant back in 2013 by increasing requirements for the quality of raw materials and end products that is supplied to Novolipetsk sintering operations and the refractory shop.*

*In 2014, led by NLMK's technical center, Dolomit experts together with experts from sintering operations and the refractory shop, performed a series of experiments to test pilot batches and identify the optimal fraction composition. As a result of these tests, Dolomit began producing the 30-50 mm fraction for NLMK's refractory shop. Face-to-face meetings, discussions and communication among our experts enables us to see our production issues from both ends; and allowed us to quickly identify the right solutions. There is no doubt that the single process environment opens up the possibility of achieving the set objectives working as a single team.*



**Alexander Zimenkov,**  
General Director, Stagdok:

*The key advantage of working within the single process environment for Stagdok is building production relations on a parity basis: we are no longer just a supplier, we are a fully-fledged participant in a common production process. Following the creation of a single process environment, we had the opportunity to improve the overall steel production result. We now have the opportunity to involve the controlling service that allows us to objectively assess the results of our changes. Working based on a single standard has significantly simplified all the key collaboration procedures, making them more transparent and technologically clear.*

*Through collaboration between the plants as part of the single process environment, our experts began to better understand the impact of various factors on the production process. We hold joint meetings to discuss and identify our priorities that would lead to a higher level of satisfaction for our main consumer and for us as the producer.*





# 6 questions

## for new General Director of NLMK-IT

Elena Demyanova talks about working in line with the SLA standard; developing a detailed catalogue and other Company priorities.

Olga Nikulshina

### 1. Elena, what goals were set for you as the new head of NLMK-IT?

The goals are certainly not revolutionary, so we won't change everything 180 degrees or radically restructure NLMK-IT. The company continues to develop along the guidelines determined three years ago by NLMK Group management. At our current stage, the key goal is to increase transparency and efficiency. 2015 is the first year the company has been using SLAs.

We are developing a detailed service catalogue, so that all the companies we work with can understand what kind of services NLMK-IT provides. This will include approximately 200 items from across our various business areas, ranging from workplace support and Internet access to maintenance of corporate IT systems - SAP and PaL (People and Labor). Regardless of their issue, a user has a single point of contact via our call center which is always ready to take in and process requests. The provision of an SLA enables the user to know when feedback will be received and when the problem is going to be resolved.

### 2. What are the advantages of such an approach?

This approach enables us to benchmark ourselves against Russian and international companies in terms of IT service efficiency. SAP user support and workplace support, all of

these services have their quantitative characteristics: how much the service costs; how fast the user can expect to have feedback; and how long it will take to restore service after a collapse. This allows our clients, NLMK Group companies, to assess both the cost and the quality of our services. We plan to use this detailed catalogue for our 2016 contracts with our clients.

### 3. How do you ensure a consistently high quality of services across all Group sites?

To achieve this, we must train our employees. Efficiency is tied to increasing labor productivity and the skills our workers have. By the end of the year we will have individual growth plans for employees in key areas to improve the quality of service. Without our employees we would never be able to achieve great results.

### 4. One of the priorities is developing NLMK Group's corporate portal. What has already been done?

We have updated the self-help. Any employee can log in to their user account at the portal and gain access to a number of services, for instance, their payroll sheet or the organizational structure. They can also book meeting rooms, sort documents and even look at the canteen menu.

A service-level agreement (SLA) is a part of a service contract where a service is formally defined. Particular aspects of the service – scope, quality, responsibilities - are agreed between the service provider and the service user. A common feature of an SLA is a contracted delivery time (of the service or performance).



WE ARE  
DEVELOPING  
A DETAILED  
SERVICE  
CATALOGUE,  
SO THAT ALL  
THE COMPANIES  
WE WORK  
WITH CAN  
UNDERSTAND  
WHAT KIND OF  
SERVICES NLMK-IT  
PROVIDES



with the participation of NLMK-IT employees. We are going to support our users and provide prompt assistance. Key current projects include updating our external site and developing an internal portal. The internal portal is mostly tailored to self-help services. Later, employees will also have the possibility to access certain services from their mobile devices. With regard to completed projects, all Group companies have been transferred to a single mail service. Now employees all over the country can communicate within a single mailing environment. Mail has become more stable, efficient, and manageable. Secondly, we have completed the first stage of modernizing our automated phone system at the Lipetsk site, where we have replaced and upgraded the equipment.

**6. You have had an impressive career path. You started as a computer operator, meaning**

**that you know the profession inside out. What is the most difficult thing about your job and how do you overcome it?**

A profession isn't something complex. If you truly love what you do and are interested in the people you work with, then you will have an exciting journey and every chance to become a highly qualified professional in your field. ☺

Key current projects include updating our external site and developing an internal portal

**WE ARE FACED WITH THE CHALLENGE OF TACKLING RATHER SERIOUS PROJECTS THAT HAVE BEEN APPROVED BY THE INVESTMENT COMMITTEE**

**5. What are the prospects for project activities within NLMK-IT?**

We are faced with the challenge of tackling rather serious projects that have been approved by the Investment Committee. I am talking about the Development and Support Program. Many of the projects will be implemented and later maintained



## Profile

Born on 5 April 1968 in Podolsk, Moscow Region.



### Educations:

Elena graduated from Moscow Institute of Electronic Machine Building in 1991, majoring in 'Computing machinery, complexes, systems and networks'.



### Professional background:

From 1985 to 1986: computer operator, 1st category technician at the Russian Institute of Space Device Engineering.  
From 1994 to 1999: rose the ranks from administrator to financial analyst at the Russian-

German joint company 'Russvel'.

From 2004 to 2006: Elena was group head at the corporate information management department in Siemens' Russian unit.

From February 2010: General Director, Programme Management Director at the Nuclear Complex of Rosatom's shared service center (Greenatom). Combined this function with being Rosatom's Deputy Director for IT. Starting from November 2014 till the present: General Director of NLMK-IT.



# Chief Blast Furnace Operator

Ivan Kurunov has made a name for himself in blast furnace operations and steelmaking. He has represented Russia at international congresses of blast furnace operations on a number of occasions. He has published four books, more than 270 scientific articles; and been awarded 120 invention certificates and patents. At the end of 2014, according to the Russian Science Citation Index, he was included into Top 100 most-quoted Russian steelmaking scientists, claiming 65<sup>th</sup> place.

'My academic career was more related to on-site research, rather than research in the lab'

Natalia Sviridenko



Ivan Kurunov is a member of the team of authors of the third edition of the "Pig Iron Metallurgy" textbook; he is also the author of the book "The State and Prospects of Direct Reduction Ironmaking"; and a member of the international team of authors of the third edition of "Modern Blast Furnace Ironmaking: An Introduction" published in the Netherlands this year. He also edited the translation of the first edition; and translated and edited the second edition of the book published by NLMK's printing house and used as a textbook.



***I STARTED  
WORKING  
WITH NLMK AS  
A MANAGING  
COMPANY  
EXPERT BACK  
IN 2000***



'My most important project to date is a plant that produces a new blast furnace charge component'

#### How do you feel about being included into the TOP-100 most quoted Russian scientists?

To tell you the truth, it was a real surprise for me. I found out when a colleague sent me a link to a site with the list. I do have quite a few publications but I never expected to make it into the list of the most quoted steelmaking scientists.

#### How did you end up devoting your life to steelmaking?

It was pretty straight-forward. There is a small steelmaking plant in the city of Satka in Chelyabinsk Region where I was born and grew up; its blast furnaces have been smelting pig iron since 1758. It all started for me in 9<sup>th</sup> grade when I went there on a site visit. I was really impressed by the sight of hot metal and the blast furnace. There was also a practical consideration, as scholarships at steelmaking colleges were twice the size of other colleges. I graduated from high school cum laude and was accepted into the Chelyabinsk Polytechnic Institute without any additional exams. After graduation in 1961, my dream was to work at the Chelyabinsk Steelmaking Plant; but despite my merits, I was only third in my class; and there was only one position for a steelmaking



engineer at the plant. So I ended up in the blast furnace lab of the Chelyabinsk Steelmaking Research and Development Institute. I spent two years there working as a junior research fellow. Then I went to graduate school at the Moscow Institute of Steel and Alloys, defended my PhD and stayed on at my department, founded and first chaired by the well-known blast furnace scientist M. Pavlov. I later defended my Doctorate.

#### How many years have you dedicated to blast furnace operations?

It appears I have dedicated my whole life to researching blast furnace operations. My academic career was more related to on-site research, rather than research in the lab. This had to do with the topic of my research: blast furnace process automation. At that time, this was something new. I later started to expand my sphere of interests but they were also in one way or another tied to blast furnace processes. I worked in all the large steelmaking

plants across the former USSR, with the exception of Karaganda. My first plant was Maruipol-based Azovstal, which is where I did my research all through graduate school and afterwards.

#### When did you come to work for NLMK?

I started working with NLMK as a managing company expert back in 2000. In 2004 I was offered the position of chief blast furnace operator. By that time I knew the plant and the team well, so I accepted. My teenage dream finally came true: I began to work at a steelmaking plant.

#### How has blast furnace operations changed during your time here?

There have been some drastic changes, if we compare it today with the year 2000. Blast Furnace #7 has been constructed; blast furnaces have been equipped with pulverized coal injection (PCI) and gas-oxygen mixture injection systems; the quality of the coke used in blast furnaces has improved significantly;

as has the quality of sinter; top-gas pressure has increased; and blast furnace productivity has been boosted. I wouldn't be exaggerating if I said that Blast Furnace #7 currently holds the world record in terms of specific productivity. The structure of blast furnace charge has changed; silicon content in pig iron has been reduced; fine coke and sinter fractions that haven't previously been used are now involved in the process. All of this has resulted in a lower use of skip and particularly metallurgical coke consumption; and a lower amount of sinter screenings being returned to the Sinter Plant.

#### What blast furnace technologies appeared at NLMK during your time?

One of the technologies I am directly involved in is the use of

## I worked in all the large steelmaking plants across the former USSR

shungite in blast furnaces. Shungite is a unique mineral only mined in Russia, in Karelia. In terms of its mineral content, it's a 90% mix of finely dispersed carbon and silica with a huge specific contact surface between them, which provides for the unique qualities of this material.

Initially, shungite was used in blast furnace operations as a partial coke replacement in the production of cast iron. We were the first ones to use it in the production of steelmaking pig iron in 2000-2002. That's when we discovered shungite's capacity to protect the lining and reduce its wear; subsequently reducing the amount of R&M required. Articles on the topic helped spread the technology across Russia. Together with NLMK blast furnace operators we installed a unit for mixing natural gas and oxygen at Blast Furnace #6; it increases the efficiency of natural gas use in the blast furnace. Back in the 1980s at the Moscow Institute of Steel and Alloys I also participated in the development of an automatic probe scanning system that is currently used at two NLMK blast furnaces. Key ideas for the system were compiled by my student, and later grad student, colleague and friend Vladislav Dobroskok. Elements of this system were first tested in blast furnaces at NLMK, Azovstal and Cherepovets.

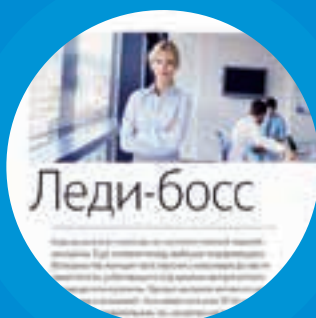
#### Which project is your most important to date?

That would be a plant that produces a new blast furnace charge component, i.e. briquettes from fine Fe containing metallurgical waste. We have already completed the basic engineering and are working on putting together the project documentation. This project will enable us to eliminate slag and dust from the sintering mix, improving sinter quality and eventually allowing us to get rid of the slag reservoir ponds and to reclaim the land. We have carried out a series of tests, producing briquettes from various slags as well as from concentrate. We then proceeded to test heats using these briquettes and established that our blast furnace reacts normally. I think that these briquettes have a big future ahead of them. ☺



Blast Furnace #7 currently holds the world record in terms of specific productivity





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