



EKONS: VISIBLE SAVINGS

Visualising operational metrics has saved SIBUR about RUB 3 billion since 2018.

EKONS is based on mathematical models of differing complexity, which calculate key operational metrics in real time and display them on the users' screens. A process operator does not just see the real-time values of process parameters (e.g. the gas flow rate at a compressor inlet or the temperature at a coil outlet), but also their impact on the overall economic performance of the facility.

ZAPSIBNEFTEKHIM CUT ITS CARBON DIOXIDE EMISSIONS BY 80,000 TONNES PER ANNUM

Simple but effective

The new system's key feature is that it visualises the maximum number of material process parameters possible. The operator can take in all the information on the screen in a couple of seconds, finding out how well the process is running and how it performing economically. Everything is intuitive, with no additional expertise in IT or economics required. If indicator is in the green zone – we are making money, in the red zone - losing money.

“SIBUR has long boasted a high level of automation, which, among other things, allows operators to see all key indicators in real time and quickly tweak the process,” said Alexander Koblov, EKONS Project Manager.

When EKONS was first piloted, its future end users were sceptical of the innovation. For this reason, the implementation team prioritised engaging with operational staff. Operators and process engineers were told about all the potential the new digital tool held and its likely impact on process performance. This ongoing, in-person communication proved beneficial to both sides of the implementation process. Thanks to user feedback, the tool's functionality was significantly expanded from the original design.



Following the results of the EKONS implementation in Kstovo, it was decided to replicate the system at the rest of SIBUR's enterprises.

AS FOR ECONOMIC BENEFITS, THANKS TO LOWER PRODUCTION COSTS, SIBUR SAVED MORE THAN RUB 200 MILLION IN THE FIRST YEAR OF THE SYSTEM OPERATION, AND ABOUT RUB 550 MILLION IN THE SECOND

“The key objective of implementing EKONS is to improve the process’ bottom line,” said Alexander Koblov. “But for the operator, even with all data visualised, they were still looking at nothing more than abstract figures – until it directly impacted them, too.” Initially, this feature was not included, but with time, we linked process performance to the performance of the specific employee running the process. As a result, colleagues can control their own bonuses and really feel that they own the process. Motivation is thus very straightforward and effective: “The more and longer the indicators are in the green zone, the more money the company will make and, therefore, I will.”

Implementation stages

After the results of implementing EKONS in Kstovo came in, it was decided to roll out the system to other SIBUR facilities. The next production asset to implement the system was in Tobolsk, followed by production assets in Tomsk, Voronezh, and other cities. A total of 46 Company production facilities are already successfully using the digital tool, with the number expected to reach 49 by year-end.

Each SIBUR production site poses unique opportunities and constraints for EKONS, so in each case it is implemented in three consecutive stages.

The first stage involves technical and economic analysis. The project team engages with the plant engineers and operators that will use the system to thoroughly review all processes and identify potential uses for the new tool, as well as key areas for operational performance improvements. This stage also includes designing a template for EKONS views, as well as deciding on key indicators for each operator’s workstation, with routes to maximised performance identified in each case. This is a cross-functional effort requiring a high level of involvement from operational staff, because it is this stage that will make or break the success of the future system.



In total, more than 70 employees have passed through the EKONS implementation team. Some are still implementing and developing the solution, while others, having gained experience and knowledge, have returned to production in new roles with more responsibility and a wider range of tasks.

THE PROJECT IS ALREADY PILOTING ITS NEXT PHASE OF DEVELOPMENT, MAKING THE TOOL MODULAR LIKE A CONSTRUCTION SET. END USERS AT EACH INDIVIDUAL PLANT WILL BE ABLE TO ADD NEW INDICATORS TO THE SYSTEM, WITHOUT HAVING TO GET THE DEVELOPMENT TEAM INVOLVED

The next stage involves building a working prototype and integrating it into the existing enterprise information system so that it can receive the necessary data from sensors monitoring various processes. Then comes the industrial testing stage and handover for continuous operation. Since operational staff is actively involved at all stages of implementation, additional training is virtually not needed.

While the pilot team numbered six people, at least 56 SIBUR employees from different locations were involved in implementing the tool at the peak of the EKONS rollout in 2020. In total, more than 70 employees worked in the EKONS implementation team at different times. Some are still involved in the implementation and development of the solution, while others returned to their operations teams with new experience and knowledge to take on new roles with greater responsibility and wider scope.

EKONS' impact

By keeping indicators in the green, operators make production more energy efficient and thus more environmentally friendly. ZapSibNeftekhim alone cut its carbon dioxide emissions by 80,000 tonnes per annum through a more efficient use of fuel gas.

As for economic benefits, thanks to lower production costs, SIBUR saved more than RUB 200 million in the first year of system operation, and about RUB 550 million in the second. In 2020, savings exceeded RUB 1 billion, a figure that was already surpassed in the first 10 months of this year. The deployment of EKONS has translated to manifold savings growth, with cumulative annual impact expected to reach about RUB 3 billion by year-end 2021. The payback period for the implementation project at each company is under three months.



Based on feedback from users, SIBUR has already decided on the next stage of development of the project – it should become a kind of constructor.

Not surprisingly, SIBUR has big plans to further develop the tool. SIBUR believes that EKONS should become a benchmark for operational performance visualisation, something that will become an integral part of daily routine for operators and process engineers five years out. Implementing a purely digital tool fundamentally changes the entire organisational model of enterprise management, teaches employees new skills, and streamlines many key business processes.

Based on user feedback, SIBUR already decided on the next phase of development for the project: it should become modular, like a construction set. End users at each individual plant will be able to add new indicators to the system and track them to further improve the economics of production, without having to get the development team involved.

Take a look at RBC's Smart Factories in Russia:

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[acc=%D0%A1%D0%B8%D0%B1%D1%83%D1%80&date=14.12.2021&link=https://youtu.be/4DhI3_SxRDU\)](https://discovery.tech/statistics/statlinks.php?acc=%D0%A1%D0%B8%D0%B1%D1%83%D1%80&date=14.12.2021&link=https://youtu.be/4DhI3_SxRDU)

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