

## Magnitogorsk Iron and Steel Works to save over £3 million annually with data analytics

*Seven years of historical steelmaking data combined with a machine learning model from Yandex Data Factory led to 5% reduction in raw material costs*

July 19<sup>th</sup> 2016: [Magnitogorsk Iron and Steel Works](#) (MMK), Russia's third largest steel works, is to save more than £3 million in steelmaking costs by using a bespoke machine learning and big data analytics service from [Yandex Data Factory](#).

MMK produced 12.2 million tonnes of crude steel and 11.2 million tonnes of commercial steel products in 2015, meaning that even small efficiencies in raw material costs would yield enormous savings. Yandex Data Factory therefore created a machine learning service that uses seven years of MMK's granular steelmaking records, with more being added, to predict the optimal combination of ferroalloys needed to produce specific steel grades with international standard chemical compositions, and at the lowest cost for each specific smelting. These insights and practical recommendations enabled MMK to achieve an average decrease of 5% in ferroalloy use, equating to annual savings of more than £3 million, while maintaining the high quality of steel produced.

The Yandex Data Factory service receives data on the composition of the working mixture, compares it to the required chemical composition of the output steel, and then uses the data on MMK's historical smeltings to make real-time recommendations on the amount of ferroalloy and supplementary materials needed to produce the necessary end products at lowest cost.

"MMK is a pioneer amongst the industrial companies of Russia in the application of digital technologies. Our work with Yandex Data Factory is a new wave in industrial automation with the use of big data analytics," said Sergey Sulimov, Deputy CEO for Finance and Economy at MMK. "We believe that the possibilities of mathematical models using big data analytics, as well as the rapid development of IoT technologies, will reduce the costs of industrial companies by 5-10% over the next 3-5 years."

"MMK's forward thinking in the use of machine learning is a core reason for the successes we have seen and delivered, and we are looking forward to continuing our work together," said Alexander Khaytin, Chief Operating Officer of Yandex Data Factory. "The commercial value that this project delivered shows the importance of moving from talking about the better, but abstract, tomorrow of the industry to practical problem solving. We are confident that others will see this as an example of leading the way in an industry with the application of new technologies."

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### About MMK

OJSC "Magnitogorsk Iron and Steel Works" is one of the world's largest steel producers and a leading Russian metals company. The company's operations in Russia include a large steel producing complex encompassing the entire production chain, from preparation of iron ore to downstream processing of rolled steel. MMK turns out a broad range of steel products with a predominant share of high-value-added products. In 2015, the MMK Group produced 12.2 million tonnes of crude steel and 11.2 million tonnes of commercial steel products. MMK Group had sales in 2015 of USD 5.839 billion and EBITDA of USD 1.668 billion.

### About Yandex Data Factory

Yandex Data Factory are the machine learning and data analytics experts that use data science to improve business' operations, revenues and profitability. By building upon the real-time personalisation and predictive analytics technologies of its parent company Yandex, one of the largest internet businesses in Europe and Russia's leading search engine, Yandex Data Factory helps clients improve their business through the exploitation of their own data.

Yandex Data Factory's proven data science and technology continually analyses, tests, refines and reapplies thousands of hypotheses to the customers' datasets to determine the best next course of action. It offers tailored, scalable, SaaS-driven machine learning services to a wide variety of data-reliant verticals, such as retail, financial services, manufacturing and telecoms, who wish to use their data for purposes such as improving personalisation, segmentation, churn prevention or fraud detection.

Yandex Data Factory was founded in 2014 by Yandex and is headquartered in Amsterdam, operating throughout Europe.

