

## Upgrading Belarusian automotive industry using new technologies, Phase II

The project, executed by UNIDO with financial support from the Russian Federation (USD 450,000) was launched in March 2018. The project focuses on practical shop-floor interventions in pilot companies including industrial upgrading using Industry 4.0 technologies.

The shop-floor interventions included provision of training to national experts on lean management and Kaizen as well as their practical applications in selected pilot companies. UNIDO interventions contributed significantly to cut the costs and enhance productivity in targeted companies: one company reported annual savings of BYN 1,000,000 (USD 500,000) based on improved productivity by 50%.

Overall project achievements include:

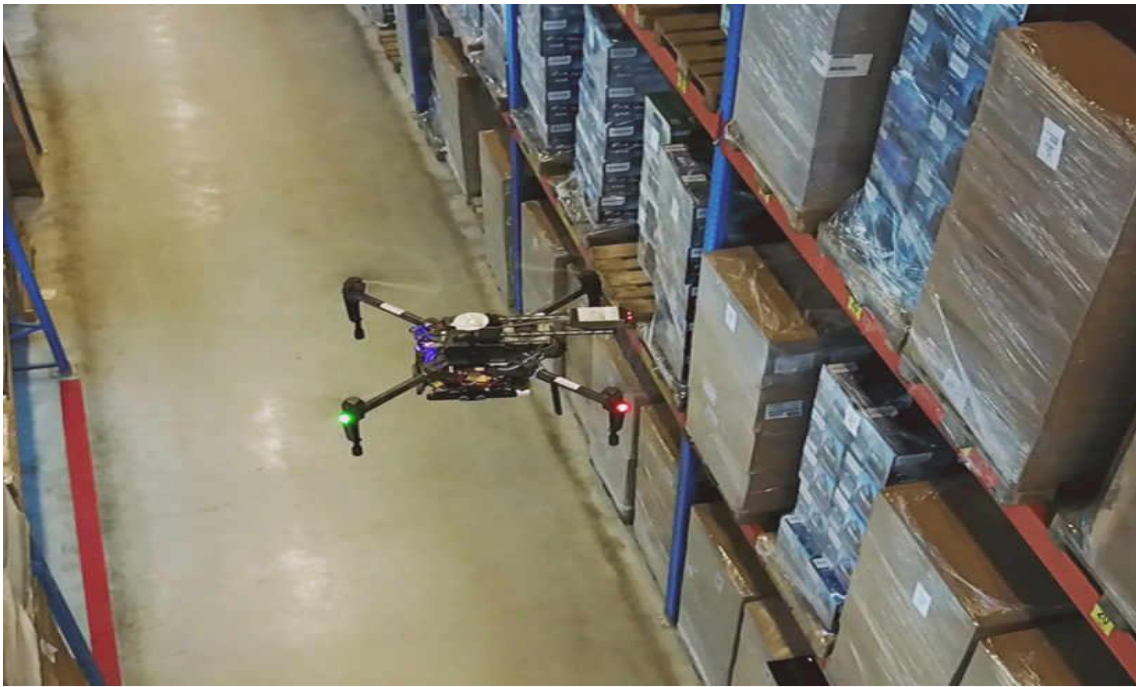
- Cutting costs and increasing saving of around USD 4 million (including results from the project Phase I) in the targeted companies.
- 36 pilot companies capacitated to use UNIDO methodologies on lean management
- More than 400 staff members of beneficiary companies trained
- Increased exposure to best practices through designed study tours to Austria, India, Russian Federation, Slovenia and Turkey
- Internship program organized and implemented for the Belorussian students
- Partnerships with the public education institution “Retraining Institute” established and joining lecturing provided for Belorussian automotive companies.
- Conference “From lean manufacturing to Industry 4.0” in Minsk on 17 October 2018 successfully organized and addressed issues such as the disruptive potential of the fourth industrial revolution and the convergence of technologies, and the importance of being prepared to deal with the challenges related to these processes including at the macro-, meso- and miro-level; prospects of leveraging new Industry 4.0 technologies for the ongoing UNIDO project (see photo and video ).

Shop floor before UNIDO interventions



Shop floor after UNIDO interventions





See video on automotive warehouse management using drones, imaging <https://www.youtube.com/watch?v=hzKmtjTXCgw&feature=youtu.be>

2) Continuation of shop floor assistance program on lean management

3) Conference on Industry 4.0 in Minsk in May 2019 with a focus on automotive Industry

4) Establishment of a Center/ Entity on Industrial Upgrading; Feasibility study approved by the Steering Committee

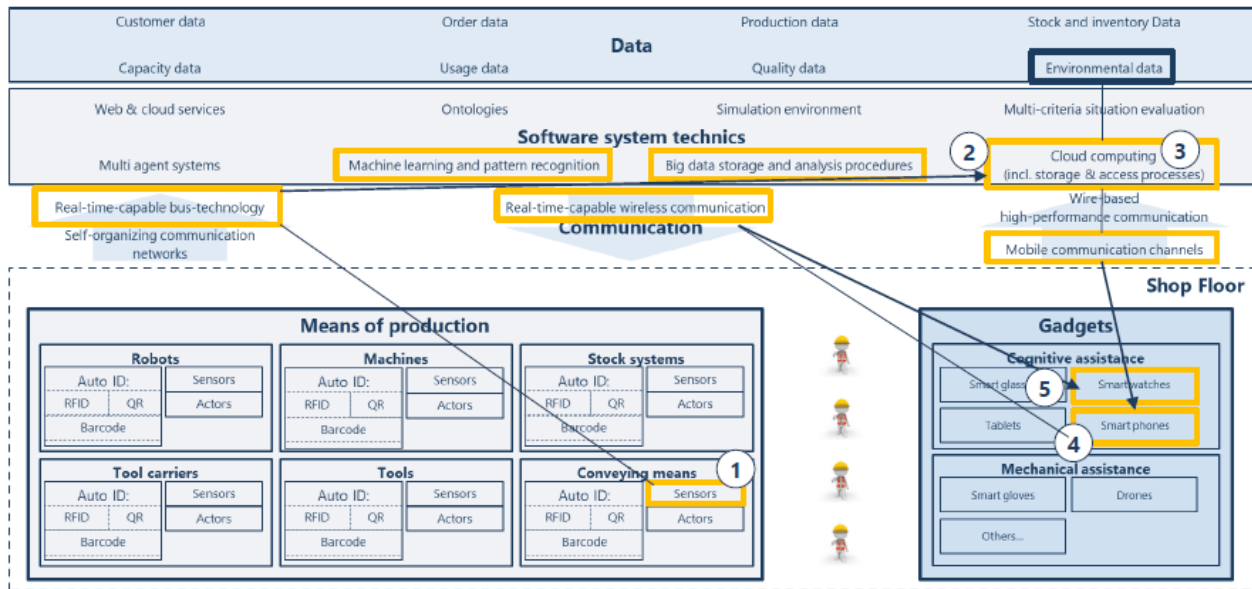
During shop-floor interventions, national project experts were trained within the first project phase capacitated in-company employees on the basics of the lean manufacturing. The national project experts then jointly selected and upgraded pilot zones using lean instruments. Such practical trainings are valued by the beneficiary companies as they contribute significantly to cost savings and inspire company specialists to make further improvements. One example of success, based on feedback from a project beneficiary company, is the project intervention resulted in an annual savings of BYN 1,015,749 (appr. USD 500,000), which was achieved by improving productivity by 50 per cent. To date, the project has saved Belarusian companies USD 4 million in total. Other project achievements include:

- 36 pilot companies capacitated to use UNIDO methodologies on lean management
- More than 400 staff members of beneficiary companies trained in lean
- Study tours to Austria, India, Russian Federation, Slovenia and Turkey
- Internship programme for the Belorussian students implemented
- Lectures held for Belarusian automotive companies in cooperation with the public education institution "Retraining Institute"
- Innovation survey with relevant stakeholders conducted and report on innovation activities containing recommendations produced
- Awareness on project activities and lean manufacturing enhanced (numerous TV reportages, 2 project videos, more than 340 Instagram subscribers, 8 newsletters)

In 2019, the project team will continue implementing the shop floor assistance programme, as well as will introduce Digital Kaizen approach to a pilot company. Another milestone will be a Conference on Industry 4.0 in Minsk in May 2019, which will bring international and national stakeholders together to discuss challenges and opportunities of the New industrial revolution for the automotive industry.

See picture below on Digital Kaizen applied (pictured: machine availability) to utilize existing infrastructure and connect industrial assets through data analysis (from machines, sensors) more efficiently.

### Visual description of technology interactions



#### Explanation

##### Legend

- Link
- ↔ Technology interaction
- ▭ Technologies in use
- ▭ Data in use

- 1-2: Transmission of sensor data to the cloud in real-time via bus technology → Pattern recognition and big data analysis of surroundings data (material flow)
- 3-4: Transmission of the analysis results/ anticipatory evaluation (via notification) to a smartphone in the affected area
- 4-5: Notification forwarding to smart watches in the area via real-time capable wireless communication (bluetooth)

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