

Danmarks Mejeritekniske Selskabs seminar:
Industry 4.0

11 October 2018

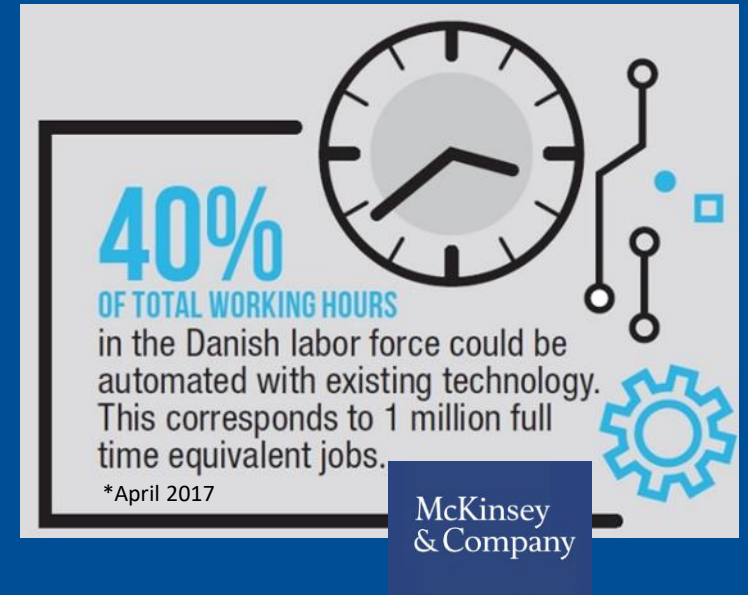


Agenda

- Industry 4.0 – why bother?
- Industry 4.0 – technologies
- BILA & Industry 4.0
- Case xxx

Industry 4.0 – why bother?

- Increased productivity
- Improved competitiveness
- Lower costs
- Higher efficiency
- Greater flexibility in the production
- More intelligence in the production solutions

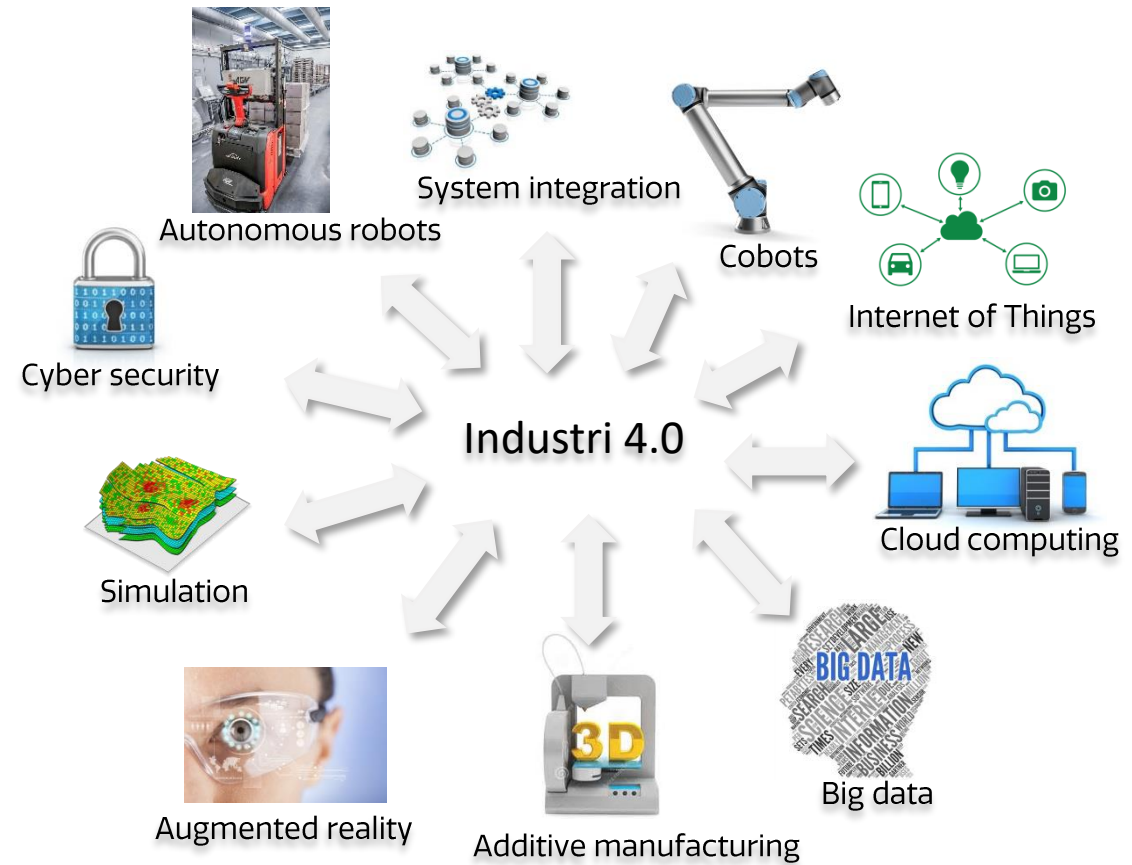


The potential is estimated to be an additional DKK 35 billion in revenue, DKK 23 billion in exports, and up to 10,000 new jobs in 2025.

*January 2016

McKinsey
&Company

Industry 4.0 Technologies

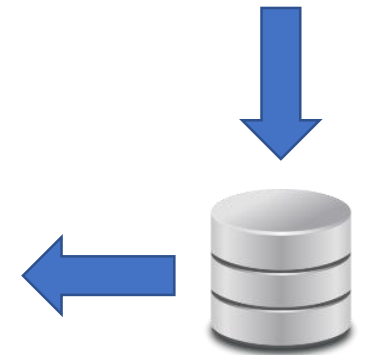
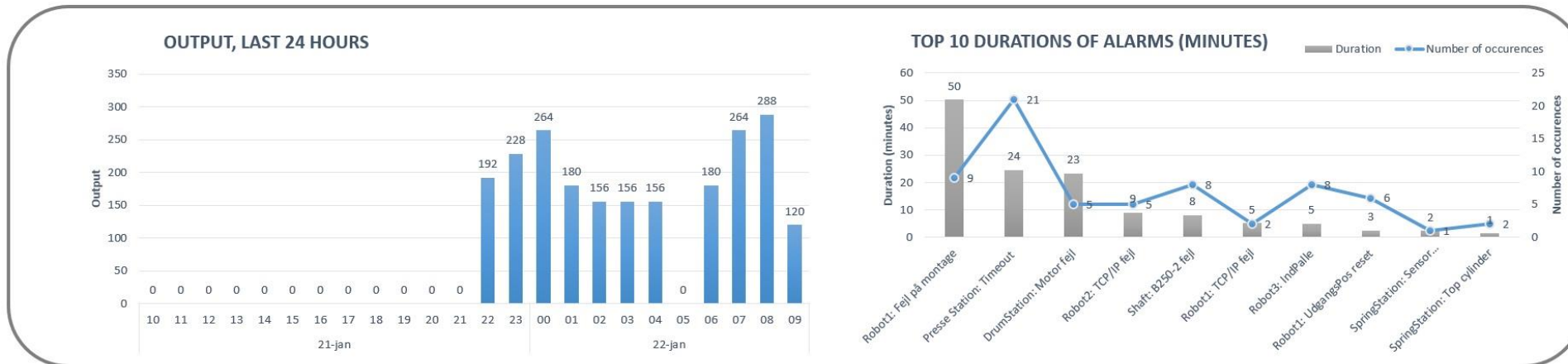
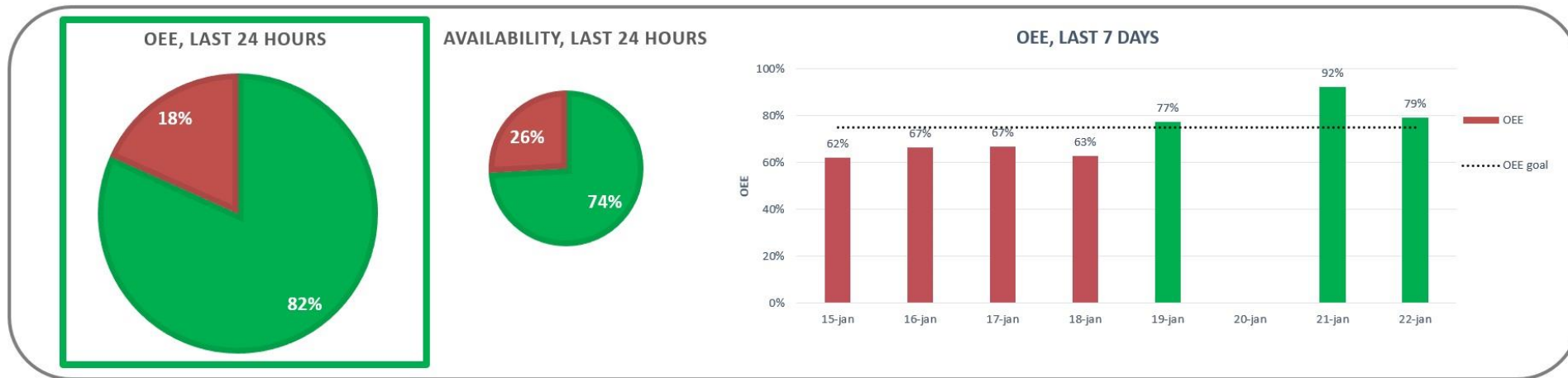


BILA & Industry 4.0: BILA DataCollector

Production equipment



- *"If you don't know where you are, a map won't help"* – Watts Humphrey
- Extract data that is already present in the equipment
- Forms a basic stepping stone for further optimizations



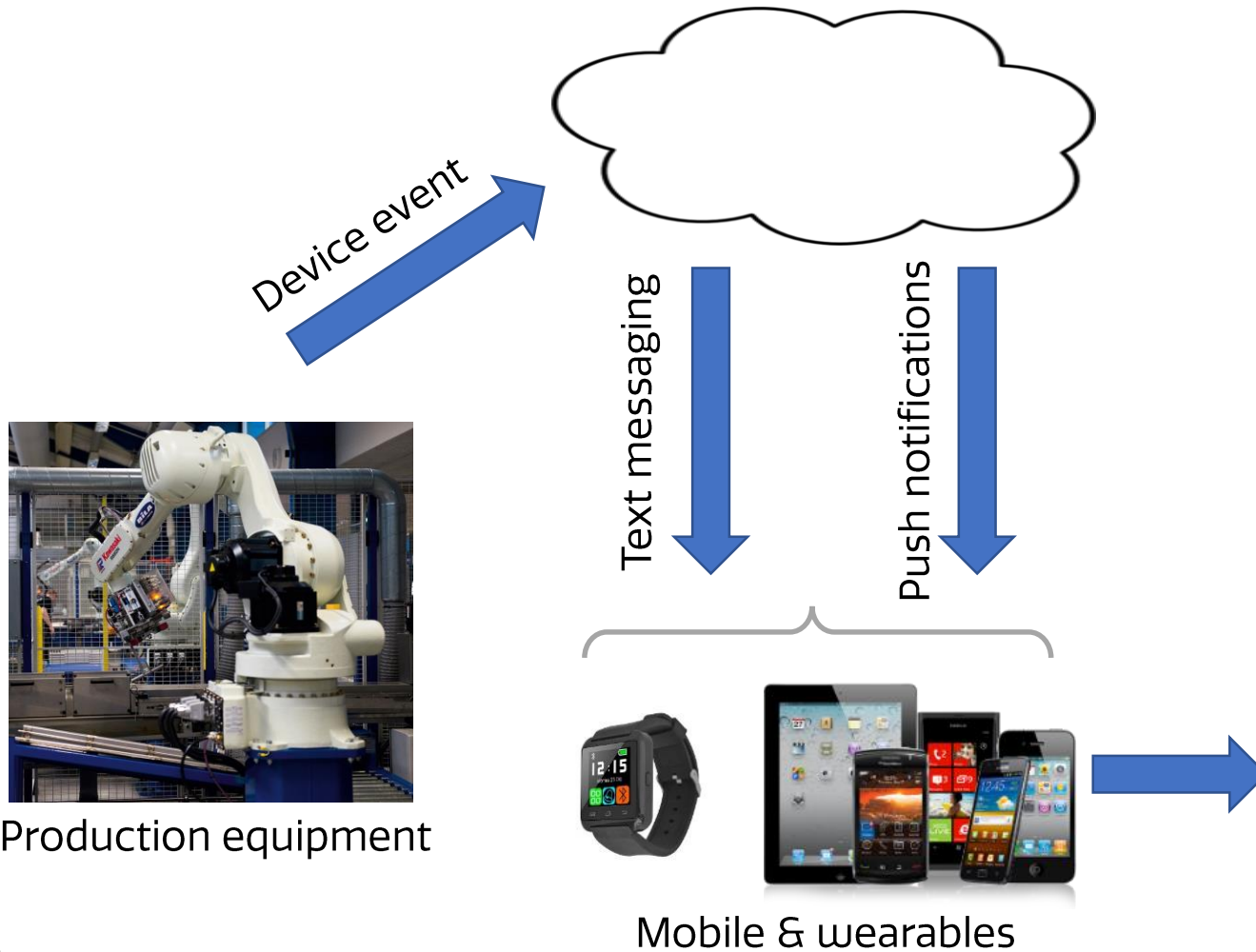
Business logic and storage



BILA & Industry 4.0: Alerts and notifications

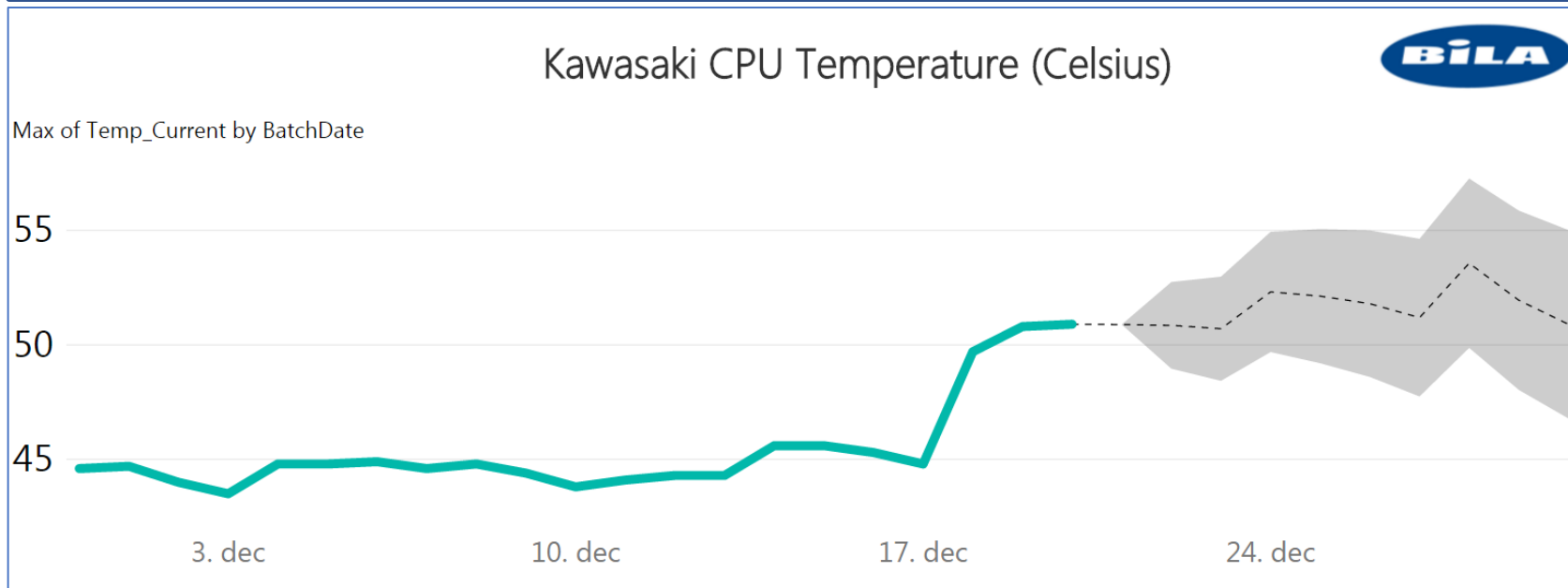
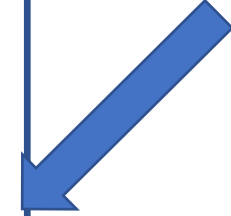
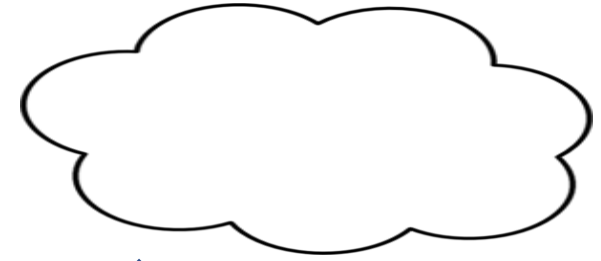


- We are utilizing mobile devices and wearables as platforms for notifications
- Alarms and notification applied to:
 - Re-active use-cases
 - Proactive use-cases



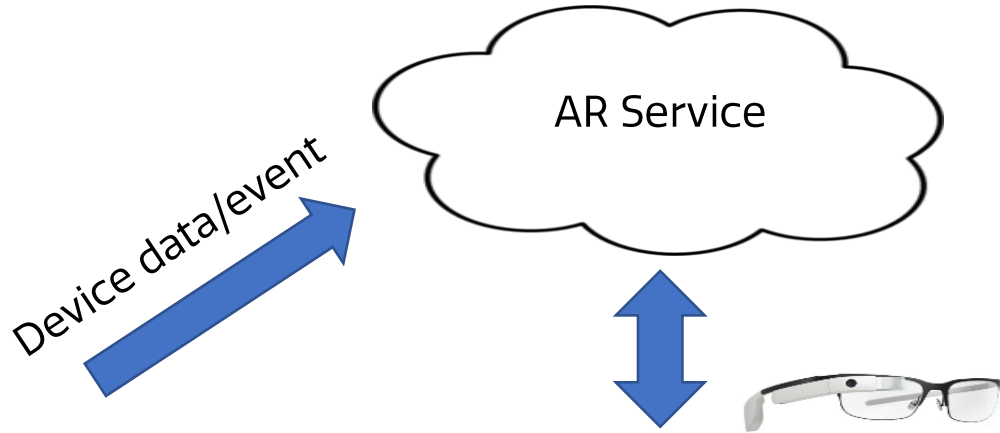
BILA & Industry 4.0: Predictive maintenance

- Predicting the equipment's behavior can prevent production downtime
- At BILA we have started with basic forecasts:
 - Robot temperature
 - Current on the robot's servos
 - Pneumatic component's energy level
- Our next goal is to use more advanced mechanisms for data analysis



Production equipment

BILA & Industry 4.0: Augmented Reality (AR)



- AR provides e.g. operators with context dependent information
- BILA focus areas:
 - Remote assistance
 - Training
 - Inspection
 - Error solving

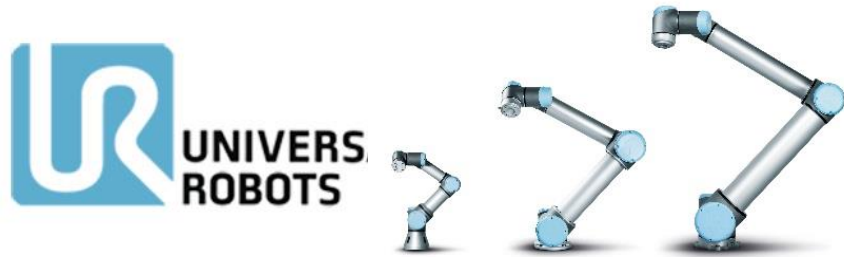


AR devices



Example: Virtual device

BILA & Industry 4.0: Cobots (Collaborative robots)



- Easy programming
- Fast set-up
- Flexible Deployment
- No safety guarding
- Low price compared to other industrial robots

BILA & Industry 4.0 – MiR (Mobile Industrial Robot)



- Automated in-house transport solutions
- Transportation of smaller items between eg. production and stock
- Maneuver safely around people and obstacles, even in very dynamic environments



BILA & Industry 4.0 – AGV (Automated Guided Vehicle)

AGV
SCANDINAVIA



- Automated Guided Vehicle
- Transportation of pallets from eg. production lines to stock
- Maneuver safely around people and obstacles, even in very dynamic environments

Thank you

- Read more on www.bila.dk
- Find us on  