>50% of the world’s data was created last year … but less than 0.5% was analyzed or used.
...open Eco-System

Source: carlosbscience.blogspot.com
Source: zastavki.com
MindSphere – The cloud-based, open IoT operating system from Siemens

**MindApps**
- Use apps from Siemens, partners or develop own apps
- Gain *asset transparency* & *analytical insights*
- Subscription based *pricing model*

**MindSphere**
- Open interface for development of *customer specific apps*
- Various cloud infrastructures: SAP, AtoS, Microsoft Azure offered as public, private or on-premise (planned)

**MindConnect**
- Open standards for connectivity, e.g., OPC UA
- Plug and play connection of Siemens and 3rd party products
- Secure and encrypted data communication
Use Case: New digital Service-Model for COFAC AG:
online monitoring of Oil Quality

- Continuous monitoring of oil quality
  - e.g. for steam turbines, hydraulic systems…
- Proactive alarming
- New digital service model for COFAC AG
- Product-as-a-Service model to end customers
Use Case: Failure prediction for transport systems

- Identification of all potential failures in baggage trail
- Condition based maintenance of defective baggage carts

MindSphere-Fleet Manager

MindConnect Nano

3 OPC UA variables:
- CART_ID
- PEAKPEAK1
- PEAKPEAK2

IFN-VIB-A:
- 2 Vib. sensors
- 2 optical sensors
- 1 AI Strip reader

Identification of baggage trail potential failures
Condition-based maintenance of defective baggage carts
Use Case: Condition-monitoring for drive-trains

- Online condition monitoring of mechanical components
- Enables planned preventive maintenance
- Monthly reporting of equipment status to customer
- Decision support for maintenance, operations and management
Real example: bearing failure at the flywheel of an automotive press

- Trend monitoring of RMSAcc shows an increase middle of August.
- The bearing was running for two more months and the downtime of the press was planned.
- The values for RMSAcc are lower than the previous normal level after the change of the bearing.
some personal learnings...

“Start smart not big…”

“Start simple…”

“Lonely wanderers will not survive…”