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How to leverage AWS for disruptive innovation on the factory shop-floor

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Factory shop-floors and *Industry 4.0*

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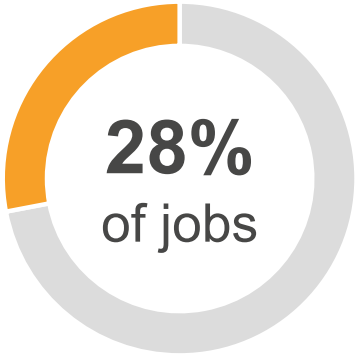
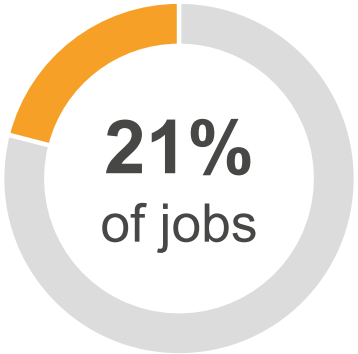
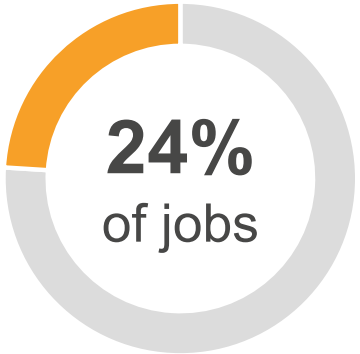
Factory shop-floors are important



Germany



Switzerland



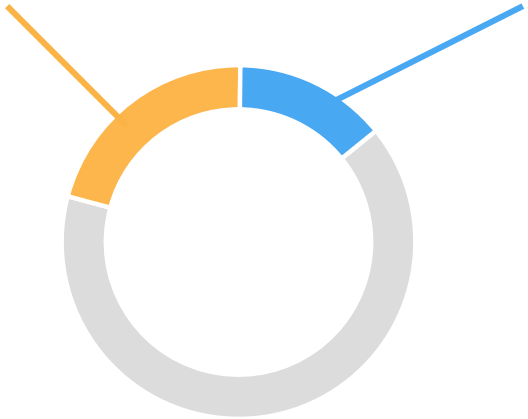
World

Source: World Bank

Factory shop-floors are important

Manufacturing

21%
of CO2

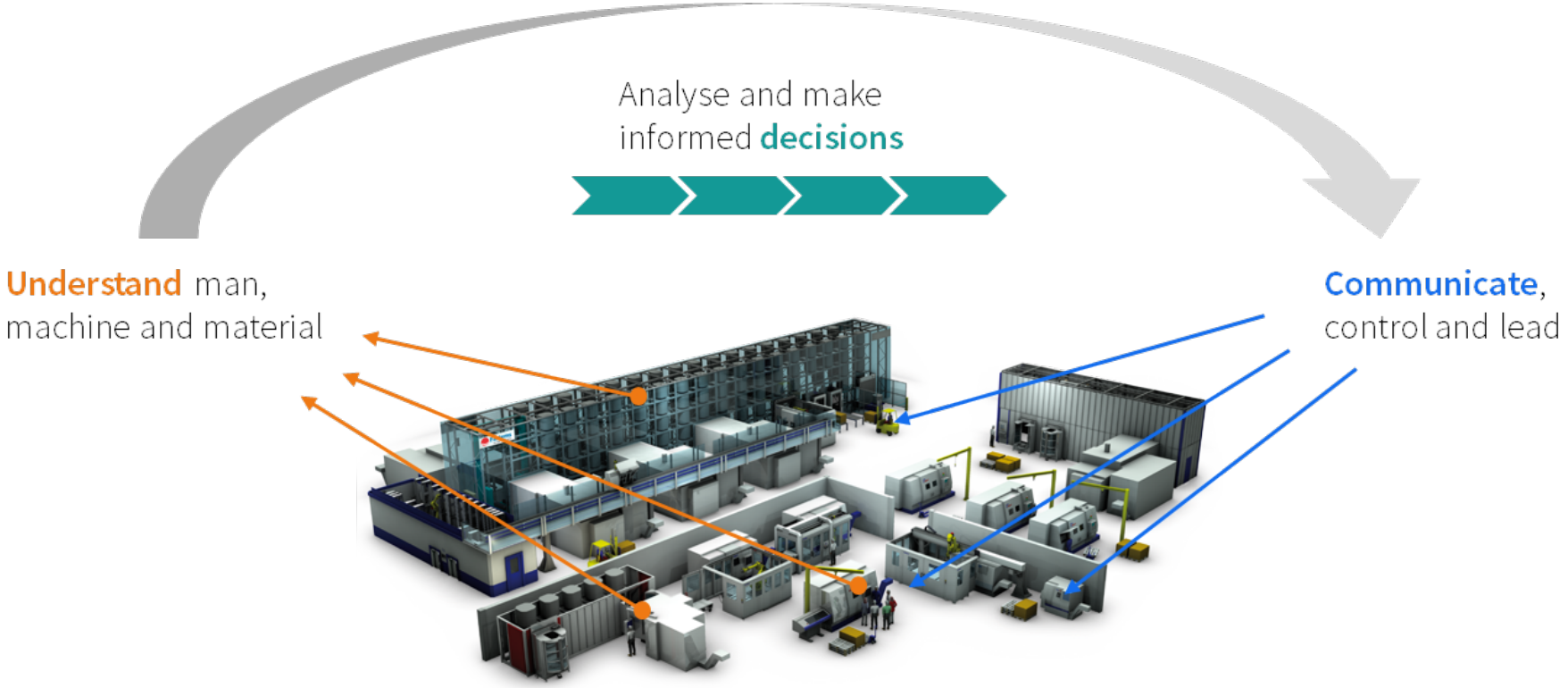


Transportation

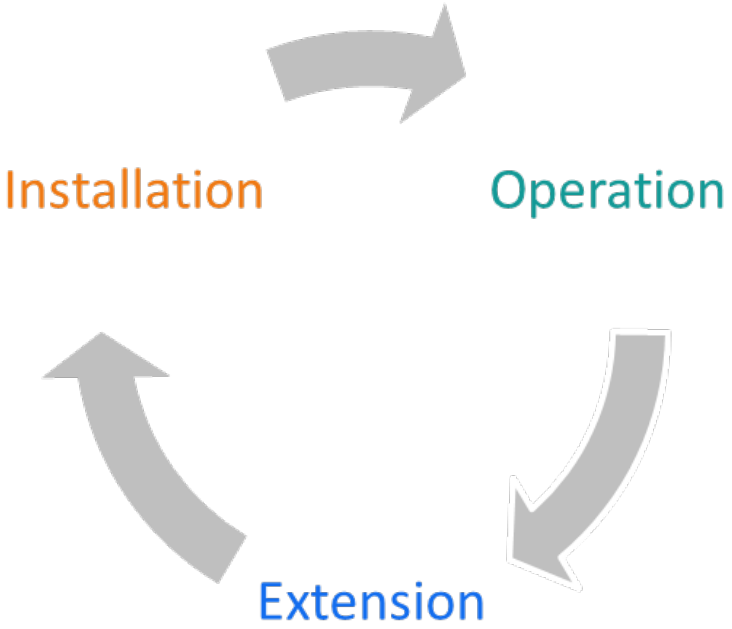
14%
of CO2

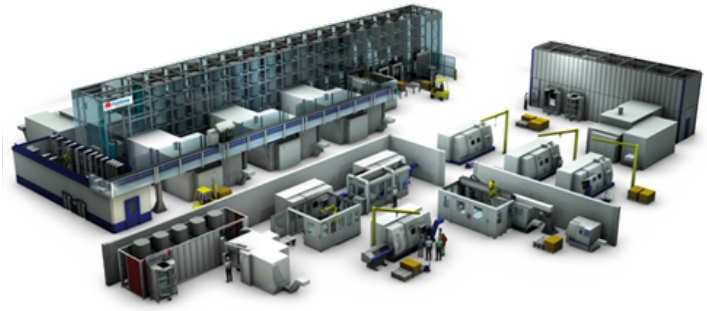
Source: EPA

Key operational value potential of *Industry 4.0*



Key technical value potential of *Industry 4.0*





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Digital Industry Solutions-as-a-Service

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Actyx Solutions

Production Management

The right man and machine working at the right time.

Material Management

The right material at the right location at the right time.

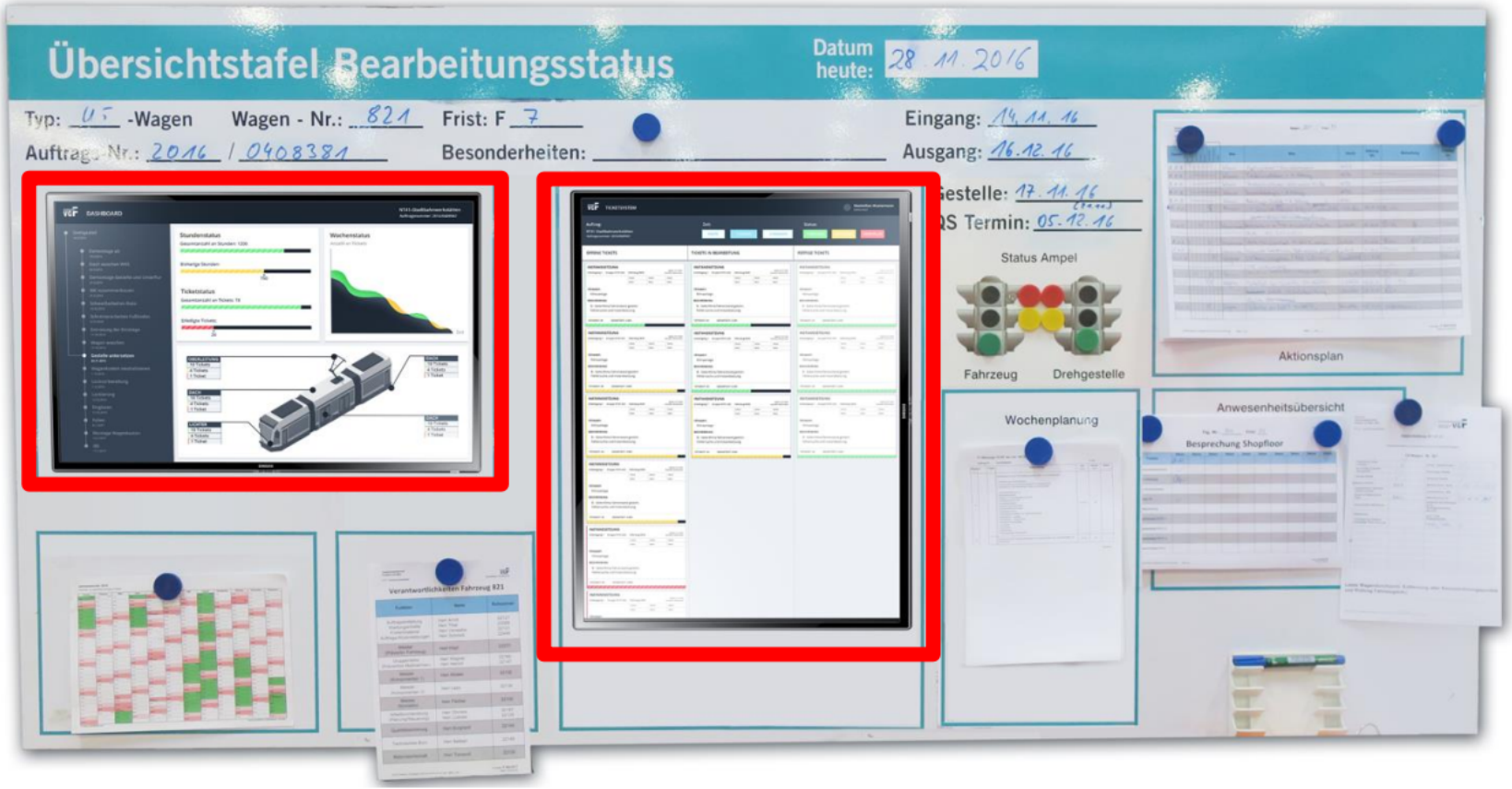
Worker Assistance

Information and insights for doing things the right way.

Actyx Service

- Bespoke solution
- Amazing user-experience
- Absolute peace-of-mind
- Valuable business case
- Built for the future

Example 1: Real-time shop-floor management



Example 2: User-friendly material management

Leveraging AWS to digitize factory shop-floors

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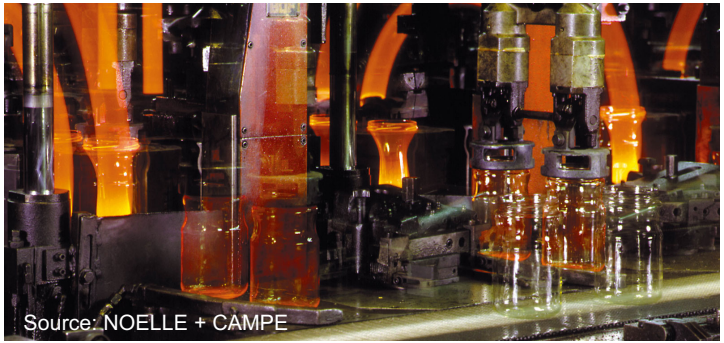
Digitizing shop-floors is *quite* difficult

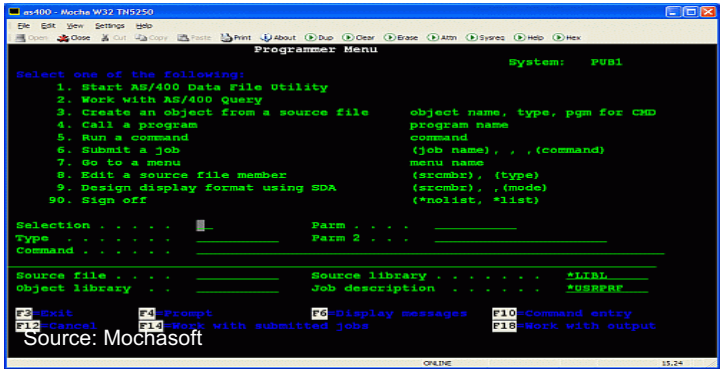
Industrial processes and assets


Source: NOELLE + CAMPE

Analog information flows

Source: Verkehrsgesellschaft Frankfurt

Legacy IT-Systems



Source: Mochasoft

Life-/mission-critical requirements

Source: Yatch Infotech

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Digitizing shop-floors is *quite* difficult

Processes are a little different in every factory

Rapid modelling of events, states and transitions

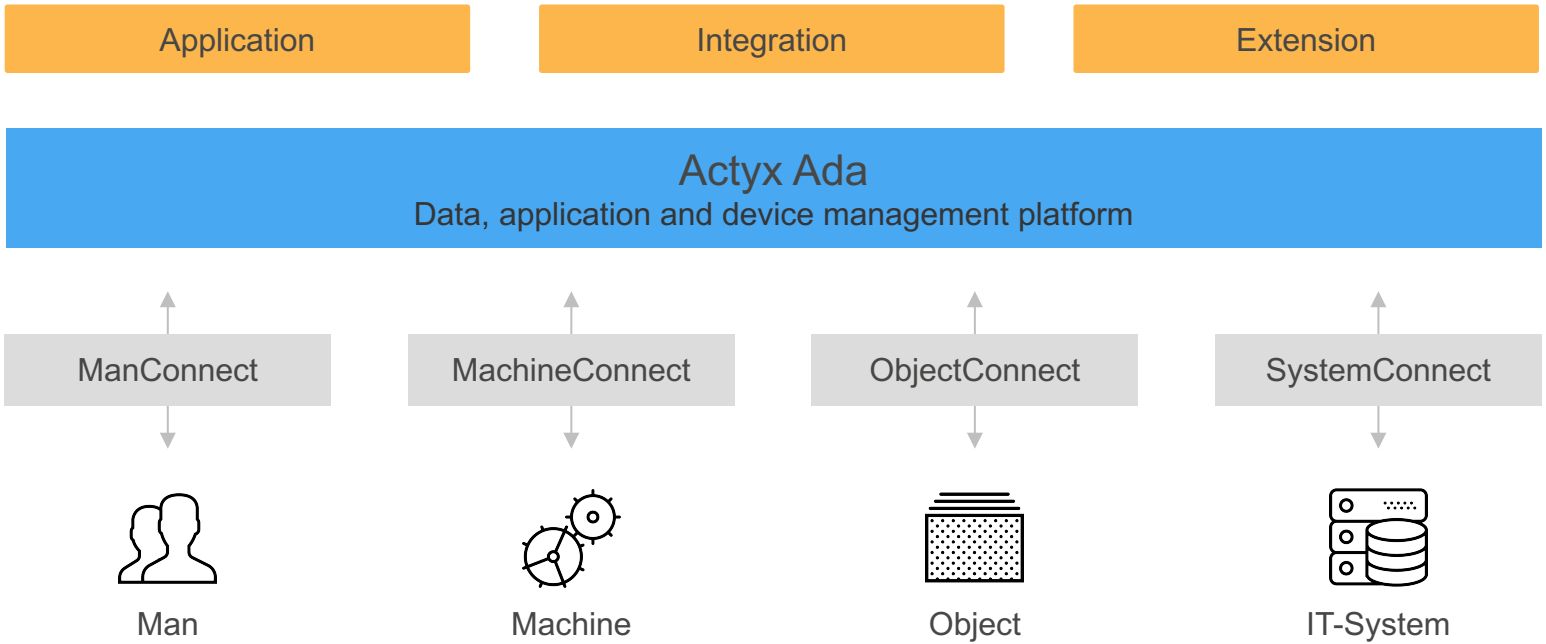
Different people, machines and IT-systems

Interoperability with different types of legacy systems

Must always run and always be secure

Mission-critical applications and data sets

The Actyx Architecture



Ex. Application

AWS services in use

Amazon EC2 · Amazon VPC · Elastic Load Balancing · Amazon S3 · Amazon DynamoDB · Amazon SNS · AWS IoT · Amazon Route 53 · Amazon CloudWatch · AWS CloudFormation

Actyx Ada (Cloud)

- Cloud Data/Stream Sink
- App. Lifecycle Mgmt
- Infrastructure Mgmt.
- Reporting and Analytics
- Device Lifecycle Mgmt
- DevOps

Actyx Ada (Edge)

ERP (infor) — SysConnect

NFS (Windows Server) — SysConnect

CAQ — SysConnect

- Distributed Computing
- Distributed Streams
- Interplanetary File Sys.
- Local Data Fetcher

ManConnect

Application

Device

End-user device and application

AWS helps us face some of our key challenges

Processes are a little different in every factory

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Must always run and always be secure

Mission-critical applications and data sets

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Thank you!

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