

SAP for Industrial Machinery & Components

Industrie 4.0 für den Anlagen & Maschinenbau

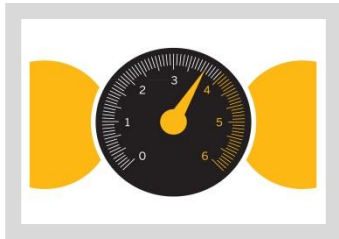
Heiko Flohr, Global Head IBU Industrial Machinery & Components, SAP AG



Industrial Machinery & Components

Our Industry Expertise Helps Companies Run Better

6.400+ SAP Customers in the
Industrial Machinery & Components industry
in every of the five industry segments



AUTOMATION & CONTROL SOLUTIONS

- Motion and Fluid Control
- Electrical Equipment, Appliance, and Components
- Measuring & Controlling Devices



CONSTRUCTION & MINING EQUIPMENT

- Construction Machinery
- Mining Machinery
- Heavy Equipment Dealers & Rentals



MACHINERY & EQUIPMENT

- Metalworking Machinery & Tools
- Special Industry Machinery
- Elevators, Escalators, and Material Handling Equipment
- Heating, Ventilation, Air Conditioning, and Refrigeration Equipment



ENERGY & POWER EQUIPMENT

- Oil & Gas Machinery
- Turbines and Generators
- Pumps and Pumping Equipment
- Air & Gas Compressors
- Transformers



RAIL EQUIPMENT & SHIPBUILDING

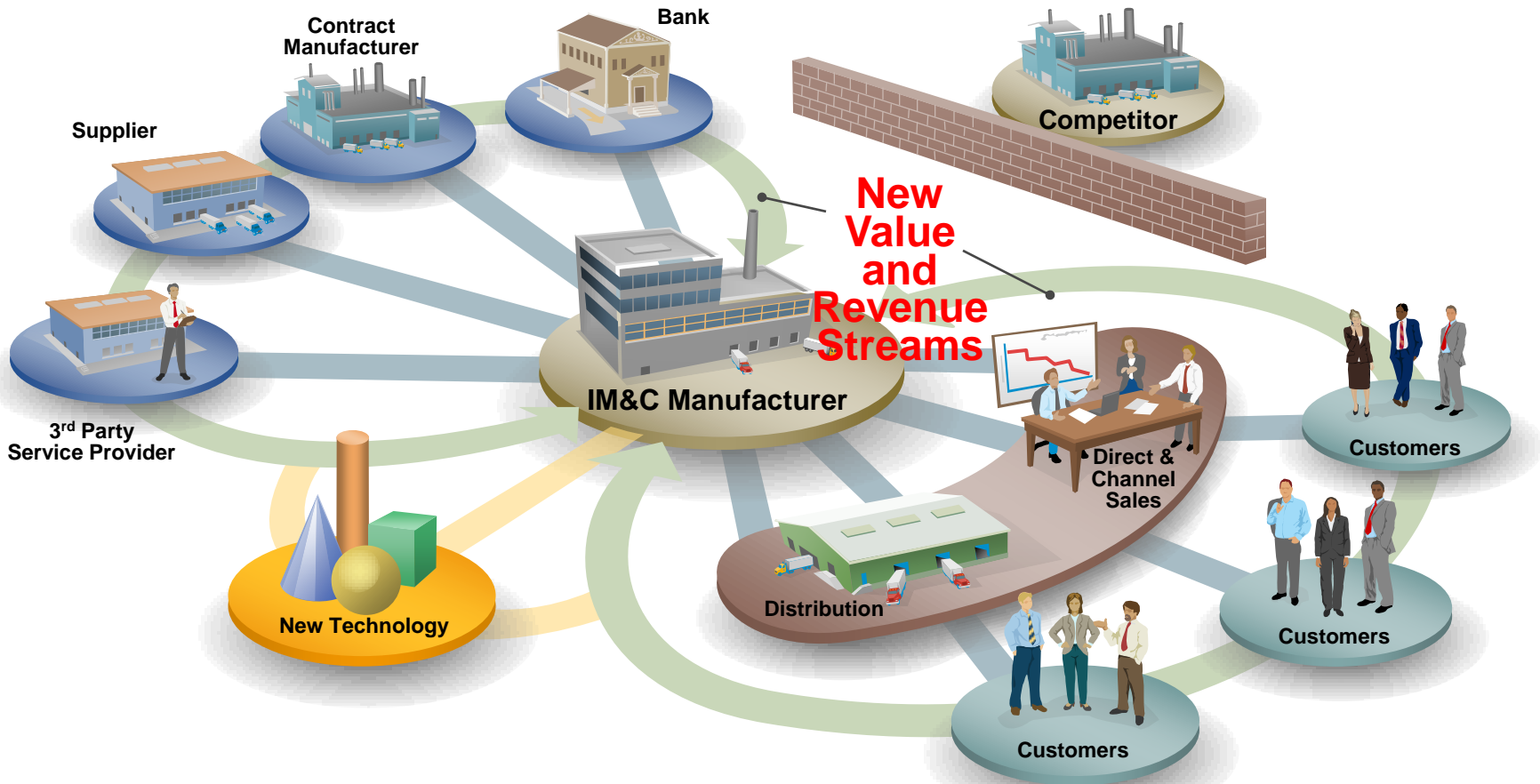
- Railroad Equipment
- Ship Building and Repairing

The Next Generation Business Model Solution Provider Network

🔔 Delivering Turn-Key Solutions

🔔 Leveraging Eco-systems

🔔 Leveraging New Technologies



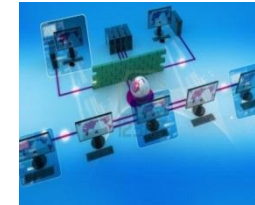
SAP for Industrial Machinery & Components

5 Elements of Industry 4.0 / Integrated Industry

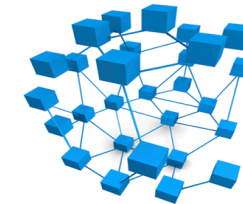
1 People & Machines



2 New Business Models



3 End-to-End Processes



4 Vertical Integration



5 Machine Life Cycle

+ 20 years

SAP for Industrial Machinery & Components

5 Elements of Industry 4.0 / Integrated Industry: The future will come automatically-

1

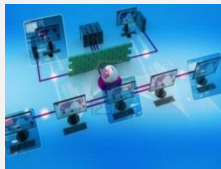
People & Machines



- Increasing Digitalization – Virtual World and Real World coming together – “White Collar Robots”
- What can be automated, will be automated
- Human – Machine Interface need to be developed new

2

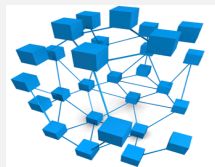
New Business Models



- Collaborative Consumption; Sharing Economy; Asset Light lifestyle
- New Industrial Downstream Service e.g. “Machine Benchmarking”
- Pay on Production Models; Scan and Copy (3D); Usage Based Billing
- Asset Life Cycle Business Models with continuously changing partners

3

E2E Process



- Networked and decentralized organized services (Fractal)
- Cyber Physical Networks; Usages of Vision and Noise
- Heterogynous system structure need to need harmonized
- Plug & Produce – Dynamic Processes

4

Vertical Integration



- Automation of business processes
- Creation and processing of data on all levels of details
- Assembly & Sub Assembly are self-controlled and part of the autom.
- People Safety needs to be reached on the highest level possible

5

Machine Life Cycle

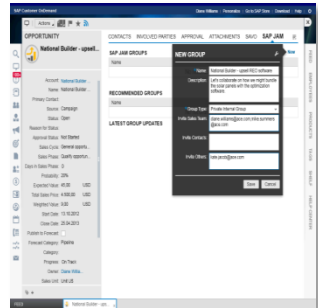
+ 20 years

- Alignment of the different life cycle of Software, Mechanics, Automatisisation and the respective area for usage in production, energy, process areas need to be aligned over a longer period of time.
- Incentive & Registration Models to stay connected

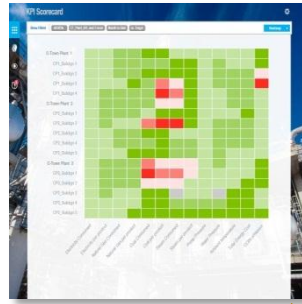
The Machinery Cloud Emerges: Emerging Applications

Some Examples

Service Tickets

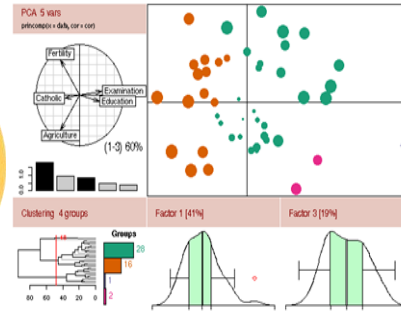


Machine Heat Map

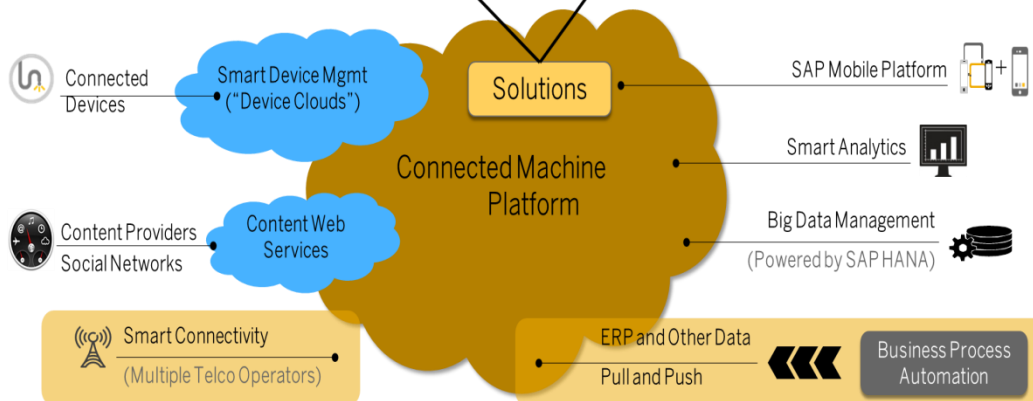
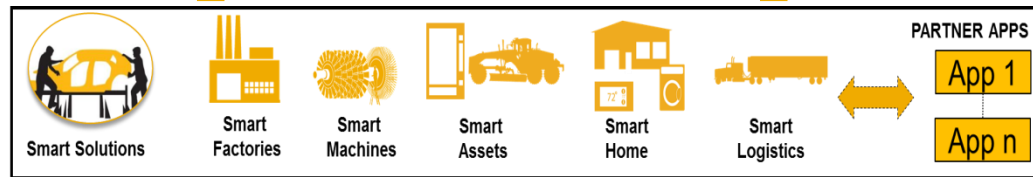


Predictive Analytics

service agreements
legislation
contracts
warranty
service history
geospatial
engineering
service history



Customer Dashboard



Industry 4.0: Idea to Performance

Integrated Business Solutions to Accelerate Idea to Product and Service Performance

innovate

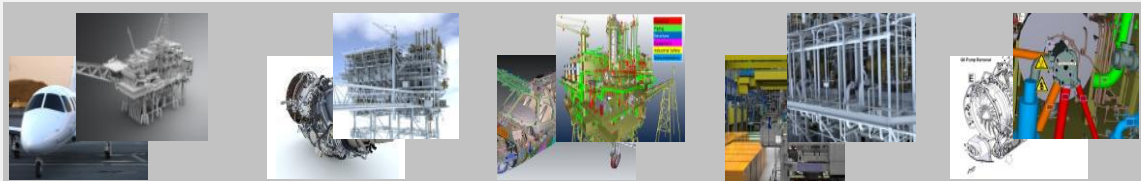
design

plan

make

service

Visualization



Mobilize and flexible work force

360 degree analytics on products, assets and services

Collaboration across boundaries

Modular Design

- Invent, plan, visualize
- Design for customer needs
- Systems engineering

Adaptive Manufacturing

- Interactive manufacturing networks
- Machine to machine communication
- Cyber physical systems

Connected Systems

- Intelligent connected assets
- Just-in-time local 3D production
- Connecting machines & humans

Embedded sustainable operations

Manage big data, understand the past and predict the future

Integration

SAP ERP

CAX

SAP M2M

Smart
Sensors

Social Networks



Thank you

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