Future Steel Forum
Ensure your Digital Plant runs perfectly - but also benefits your customers

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SAP at a glance

- Founded in 1972
- >84,000 employees representing >150 nationalities
- Serving 345,000 customers
- SAP operates in 190 countries

Metals industry
- 40+ years serving steel companies
- 23 of the 25 top steel producing companies in the world run SAP
- 7,800+ metals companies in more than 75 countries use SAP
- Alignment with industry associations
- Metal industry advisory council
Agenda

- Business trends in steel
- How technology can help
- Use cases and examples
Why time is ripe for Digital?
Current industry fundamentals drive transformation

82nd Session of the OECD Steel Committee, Paris, 23-24 March 2017

Statement by Ronald Lorentzen, Chairman of the OECD Steel Committee

• Weak signs of recovery, threatened by persistently high excess capacity
• Steel markets have improved but demand is set to remain weak
• Steelmaking capacity continues to grow, further increasing the excess capacity challenge
• Trade tensions are increasing amidst unresolved structural imbalances and market distortions
• Moving towards a low-carbon steel industry remains challenging

• Steel companies are forced to change (for survival)
• Changes will happen along the whole value chain and “digital” plays major role
• Overcapacity increases focus on sales success and drives openness for related change

Source: http://www.oecd.org/sti/ind/82-oecd-steel-chair-statement.htm
Business Networks
Reality or future in Metals?

The future will be different
- Sensors etc. will provide all info needed
- There will be players making use of this data to orchestrate a metal value chain
  - Enabling as yet unknown speed of business
  - Going across company’s borders
  - Maybe entering from another industry,
    “out-innovating” metals players in the new business critical areas
- “Metals industry” as a term will get a new definition

➔ There will be a digital network as backbone for metals business
Business transformation in metals

- Circular economy
- Individualization
- Servitization
- Disintermediation

Business models

- Operational efficiency
- Predictive planning
- IT–OT convergence
- Real-world sensing of demand

Business processes

- Right information at the right time
- Unified communications platform
- Management of dispersed staff
- Digital business processes

Work
Agenda

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- Use cases and examples
How does IT relate to future business?

“Bi-Modal IT”

Run Businesses
Hyper-automate business processes
- Focus: Stability
- Core business applications
- Critical Business Functions
- Complex

Embrace Data
Orchestrate data of any volume, velocity, and variety

Business Intelligence

Mode 1

Mode 2

Data Foundation

Steer Businesses
Deliver insights to drive strategic decisions

Differentiate Businesses
Intelligently connect people, things, and businesses
- Focus: Agility & Speed
- Differentiate to win
- Innovate to survive
- Exploratory

“Gartner's report finds that 68% of the top performers in its survey have adopted bimodal IT”
SAP offering for the Internet of Things

Digital Boardroom
- Business Objects Cloud
- IoT-Applications
- Multichannel

IoT-Platform
- IoT-Services
- Business Services

SAP Cloud Platform

SAP HANA Platform
- Vora

Business Networks
- SAP Ariba
- SAP Fieldglass
- SAP SuccessFactors
- Hybris
- SAP Transportation Management
- SAP Warehouse Management
SAP Leonardo Innovation Portfolio for IoT

SAP Leonardo Bridge

Connected Products
- Product Insights
  - Goods and Equipment
  - Supply Networks

Connected Assets
- Fixed Asset Insights
  - Manufacturing Execution
  - Manufacturing Networks

Connected Fleet
- Mobile Asset Insights
  - Logistics Safety
  - Logistics Networks

Connected Infrastructure
- Building Insights
  - Construction
  - Energy Grids

Connected Markets
- Market Insights
  - Rural Areas
  - Urban Areas

Connected People
- People and Work
- People and Health
- People and Homes

SAP Leonardo Foundation

SAP Leonardo Edge Services

SAP Cloud Platform and SAP HANA Platform
Agenda

- Business trends in steel
- How technology can help
- Use cases and examples
The vision is sketched already

“Based on our digital solutions we are redesigning all supplier and particularly customer-related processes to be simpler and more efficient. And kloeckner.i in Berlin plays a key role in making this happen.”

Gisbert Rühl, CEO, Klöckner & Co

Digital Transformation
thyssenkrupp Materials Services

Innovation does not work without experience – we innovate from inside
Organizational approach

Approach
• Internal digitalization team with start-up character
• High level of freedom
• Mixed skills with business and technical background
• Cross-functional project teams

We achieve to...
• be fast and result oriented
• keep the real business close at hand
• get insights and know-how from experienced colleagues
• use reliable internal and external networks

We avoid to...
• build mainly external driven solutions
• use an abstract green field approach
• lose connection to the real business
• miss opportunities to build up internal know-how

With a broad digitalization and IT knowledgebase BA MX is in good position to manage the
digital transformation challenge

Strong experience base in digital business with
OnlineMetals, US (since 2007)
Skills to run IT Infrastructure for > 10,000 users
Global footprint with IT coverage for > 30 countries
High mature SAP system in place
Program for further optimization already started (2018)

The digital strategy of Materials Services
Dual approach for existing and new customer groups

Existing customer groups
Materials Services
Online Portal
Online Processing Shop

New customer groups
“Materials4Me”
Second brand strategy

Source: 2016 International SAP Conference for Mining and Metals - Presentation thyssenkrupp Materials Services
Digital Transformation
Severstal

What Digital trend means for us? Challenges, threats or opportunities?

Industry is only beginning to discover the opportunities of additional value creation, which digitalization and Industry 4.0 brings to the table

Severstal is reassessing its role as a cornerstone of it’s ecosystem to secure value creation in the future

Culture of accelerated innovations is incompatible with traditional way of thinking, it demands major cultural transformation (planning and executing)n of the organization
  • Culture of empowerment, constant experimentation and learning from failures is becoming core value for the future success
  • «Break silos»

Source: 2016 International SAP Conference for Mining and Metals - Presentation Severstal
# Digital Transformation

**Severstal**

## Workshop sessions on digital strategies helped to identify 12 promising areas for further development

Source: 2016 International SAP Conference for Mining and Metals - Presentation Severstal
Collaborative Design and Material Optimization for Additive Manufacturing, integrated into the supply chain of the customer

- Customer asks APWORKS to optimize the performance of a part using the design freedom additive manufacturing provides.
- To find the optimal alloy, Heraeus is added to the collaboration. Sample parts are printed and test results recorded.
- EOS is added to the collaboration, as APWorks requires additional manufacturing capacity.
- Parts are planned and procured by the customer with APWorks as supplier, Heraeus as defined material provider, and printed on a system from EOS.

SAP Distributed Manufacturing

SAP Distributed Manufacturing
SAP Leonardo

Request for Quotation and Procurement

SAP S/4HANA

**Design**
- Customer asks APWORKS to optimize the performance of a part using the design freedom additive manufacturing provides.

**Material**
- To find the optimal alloy, Heraeus is added to the collaboration. Sample parts are printed and test results recorded.

**Printer**
- EOS is added to the collaboration, as APWorks requires additional manufacturing capacity.

SAP Distributed Manufacturing
SAP Leonardo

Request for Quotation and Procurement

SAP S/4HANA
SAP Asset Intelligence Network
Cloud-based platform for asset information exchange

Nameplate info
Maintenance strategy
3D parts # / BOM
Service bulletins & revs
Failure modes
Recalls
Safety controls
Process controls
Service bulletin
Designs and drawings
Design improvements
Sensor definition
Licensing
Operating instructions
Maint instructions
Safety instructions
Product training

Service bulletin receipt
Service bulletin processed
Usage information
Installation information
Failure / incident data
Design recommendations
Risks and controls
Measurement documents
Telemetry

Manufacturer | Service provider | Operator
---|---|---

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SAP Asset Intelligence Network

Apps
- Apps for collaborative processing of service bulletins, performance improvement, and spare parts change management

Content
- A cloud portal of standardized content that defines and documents equipment and models, shared and stored, for a consistent definition between business partners

Network
- A secure network to connect multiple business partners for inter and intra company collaboration

Combined together to deliver

SAP Asset Intelligence Network
Circular Economy
SAP’s vision: Help the World Run Better and Improve People’s Lives

INTRODUCTION

Circular Economy is a large multi-dimensional concept

(New) Business models
Recycling & recovery, closing the resource loop, sharing platform, product as a service

Cross Industries

Business line
Product Design, Procurement, Manufacturing, Sales, End of Life

Products & Services
Natural resources, goods, plant equipment, services

Actors
Corporates, private companies, NGOs, business associations, universities

CURRENT ACTIVITIES

1. Understand the relevance of circular economy to your company
2. Discuss potential next steps between your company and SAP
You are invited to join others in …

Intelligently Connecting People, Things, and Businesses

… to shape together next generation steel business!
Thank You!