



Planning

Support &  
Optimization

Supply &  
Dispatch

Reporting

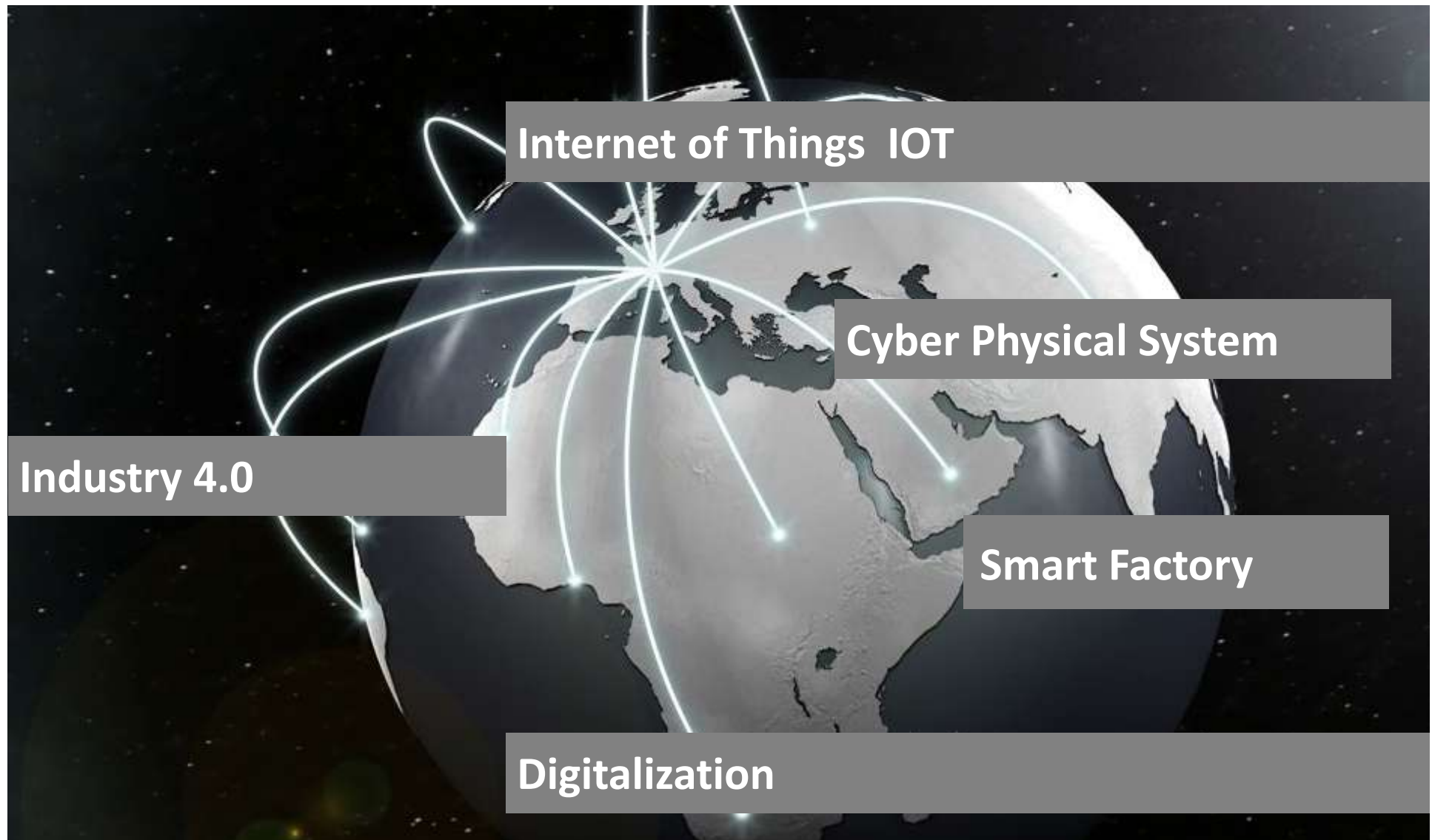


# Industry 4.0 and its Challenges for Flexible Production Planning

**X-Pact<sup>®</sup> MES 4.0**

Wilfried Runde  
Electrics/Automation, SMS group





Smart Factory



Customer added value



Changing market demands

- ◆ customization
- ◆ quality
- ◆ lead-time
- ◆ punctuality
- ◆ resources
- ◆ stocks

## X-Pact® MES 4.0

Production Planning and Control  
for All Plants



The screenshot displays the X-Pact MES 4.0 software interface. At the top left is the SMS group logo, and at the top right is a help icon (question mark and X). The interface is organized into five main functional categories, each with a list of modules represented by icons and text labels:

- Planning:** Technical Order Generator, Production Sequencer, Capacity Planner, Short Rescheduler, Meltshop Pacer.
- Support & Optimization:** Plant Condition Manager, Delay Manager, Master Data Manager, Energy Manager, Quality Manager, Warehouse Manager.
- Supply & Dispatch:** Inventory Manager, Resource Manager, Information & Dispatch Manager.
- Reporting:** Business Intelligence - Mobile, Business Intelligence - Analysis, Business Intelligence - Reporting.
- Basis:** Security Shield, Production Controller, X-Pact® Cloud.

The text "X-Pact® MES 4.0" is located in the bottom right corner of the interface.

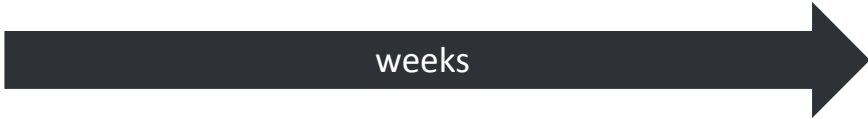
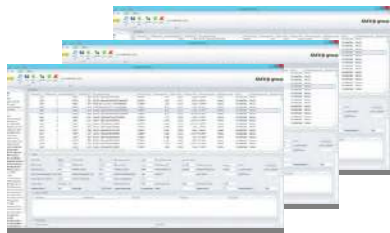
# Planning

**Technical Order Generation**

Automatic generation of production order



From customer order to technical order



**Capacity Planner**

Capacity and time planning



Utilization of plant



**Production Sequencer**

Semi-automatic advance planning of the production sequence



Optimum sequence



**Short Rescheduler**

Semi-automatic rescheduling shortly before execution of production sequence



Online modification



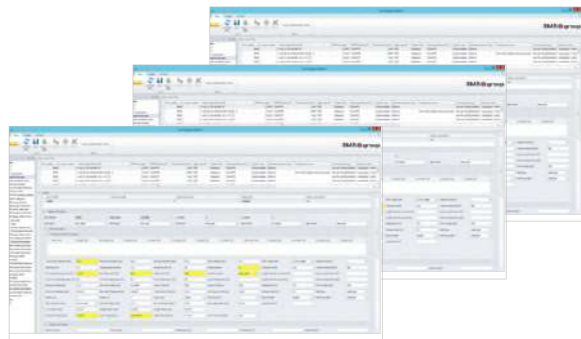


# Support & Optimization



## Master Data Manager

Management and distribution of master data and process instructions



## Energy Manager

Ensures efficient use of energy



## Plant Condition Manager

Monitoring of plant condition



# Support & Optimization



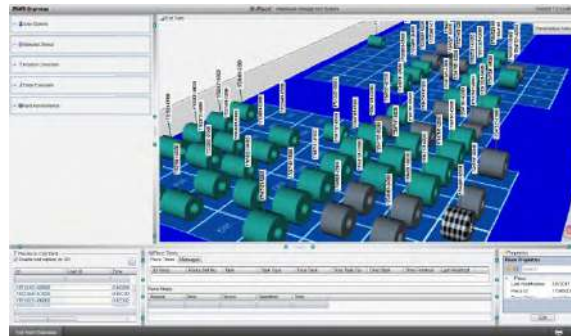
## Quality Manager

Central management of quality aspects during production



## Warehouse Manager

Warehouse Management System tailored for steel and aluminum



## Delay Manager

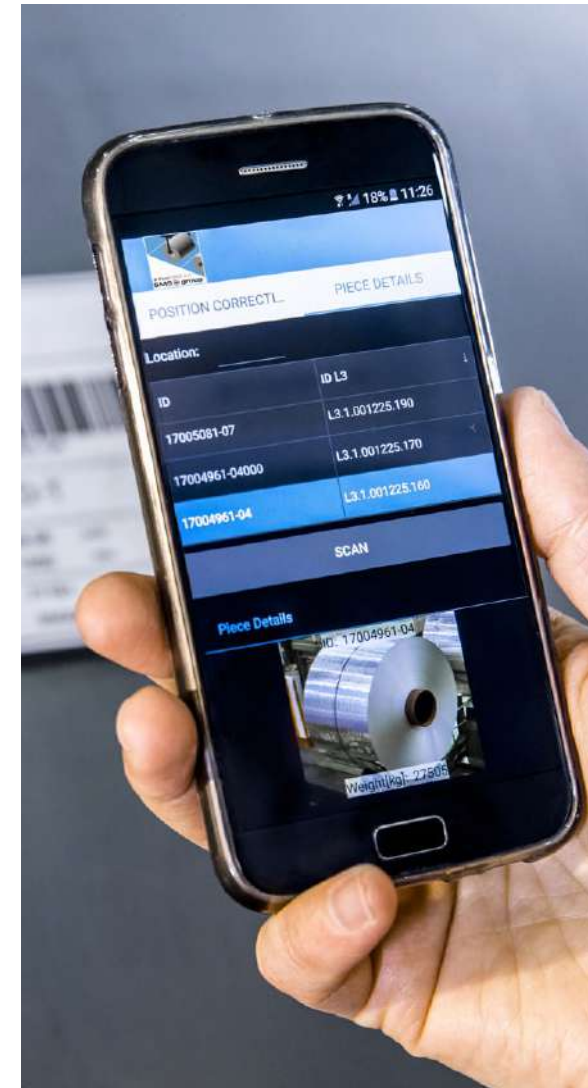
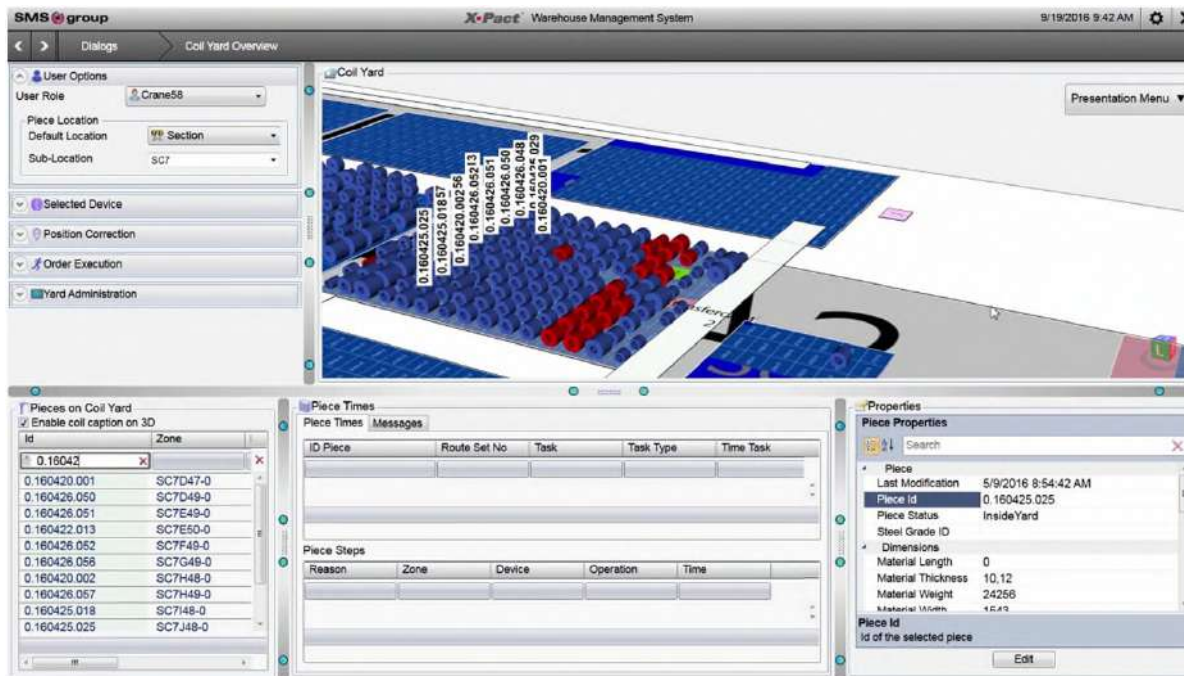
Management of standstill times



# Warehouse Management System



Warehouse Management System tailored for steel and aluminum





# Supply & Dispatch



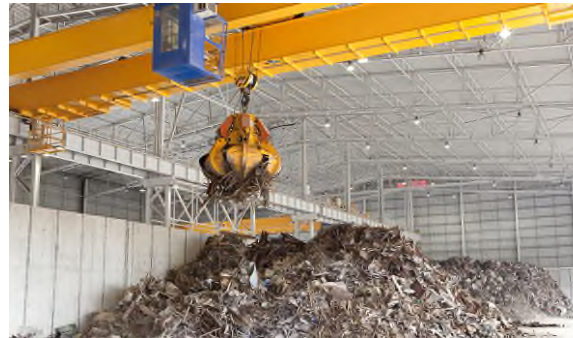
## Inventory Manager

Management of relevant production equipment



## Resource Manager

Management of relevant charge materials



## Information & Dispatch Manager

Management of communication with the customer and dispatch

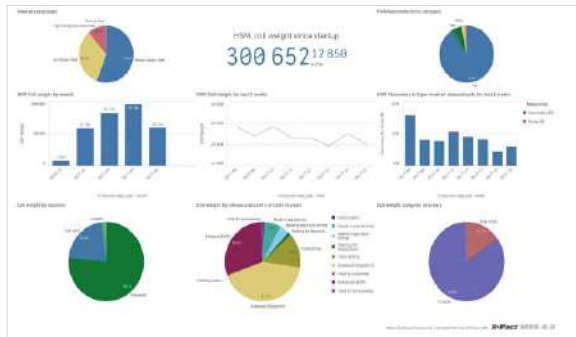


# Reporting



## Business Intelligence – Analysis

Interactive analysis of production for identification of improvement potentials



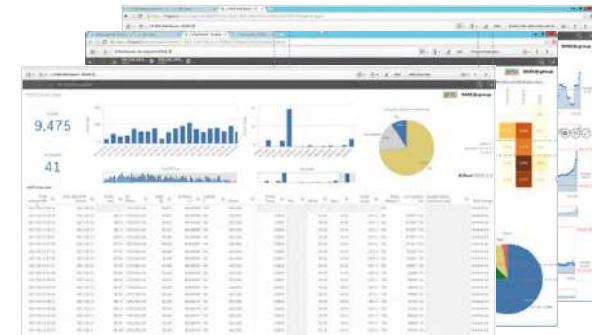
## Business Intelligence – Mobile

Display of web-based reports on tablet or smartphone



## Business Intelligence – Reporting

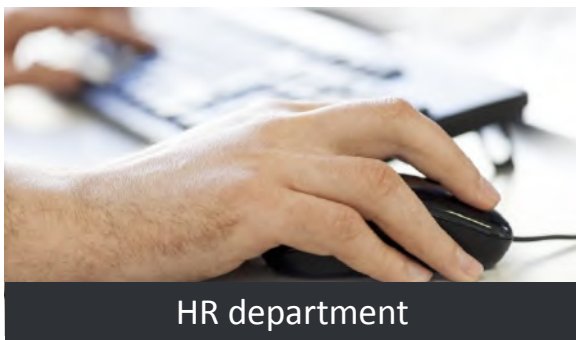
Web-based production reports



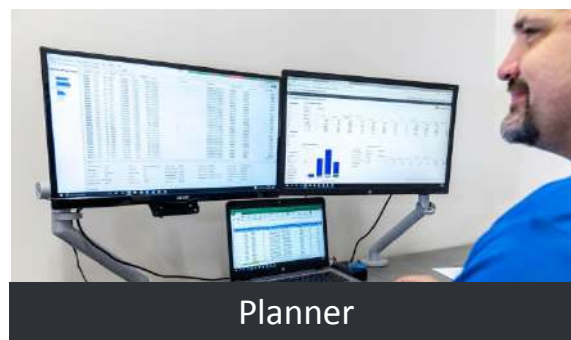
# Dashboards for various user roles



Management



HR department



Planner



Production

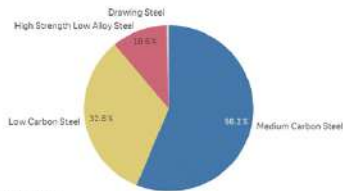
# BI report at Big River Steel USA



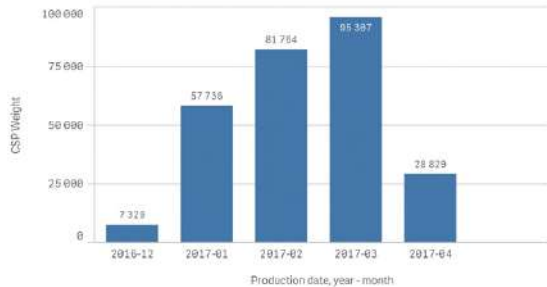
◆ Customer defined KPI-reports

## Material property

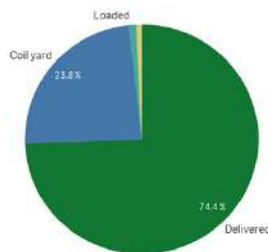
Steel grade groups



HSM Coil weight by month



Coil weight by location

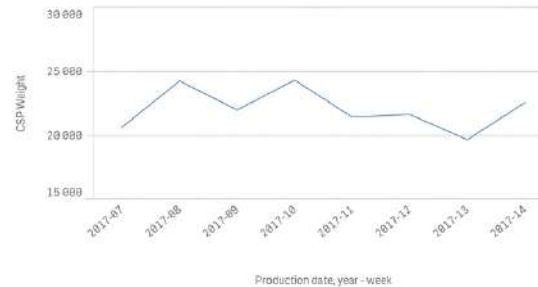


## Productivity

HSM, coil weight since startup

270 965 11 605  
# Coils

HSM Coil weight for last 8 weeks

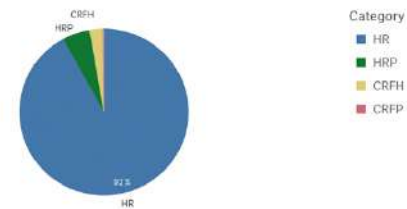


Coil weight by release status in % of coils in stock

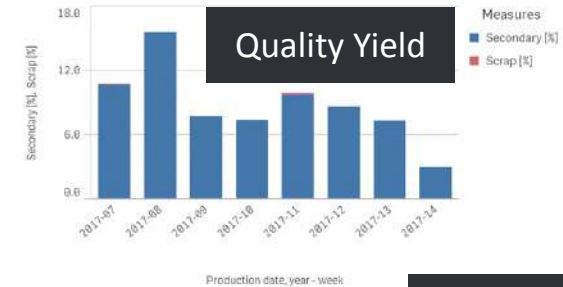


## Order status

Finished products by category



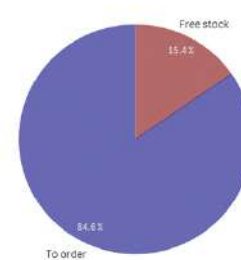
HSM Secondary in % per week of released coils for last 8 weeks



## Quality Yield

## Product in stock

Coil weight assigned to orders





# Summary

- ◆ X-Pact® MES 4.0 is an important step towards Industry 4.0
- ◆ For optimum production scheduling and efficient energy consumption
- ◆ For the highest quality with optimum use of material and plant resources
- ◆ For intelligent alternative measures in cases of malfunctions
- ◆ And for meaningful analyses as a sound basis for possible improvements



Make your factory smart ... with X-Pact® MES 4.0!



Wilfried Runde

Production Planning Systems

SMS group GmbH, Germany



Please contact me for further information or to arrange a personal meeting

+49 211 8814615

wilfried.runde@sms-group.com

<https://www.sms-group.com/expertise/electrical-and-automation-systems/>



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## Contact

*The information provided in this presentation contains a general description of the performance characteristics of the products concerned. The actual products may not always have these characteristics as described and, in particular, these may change as a result of further developments of the products. The provision of this information is not intended to have and will not have legal effect.*

