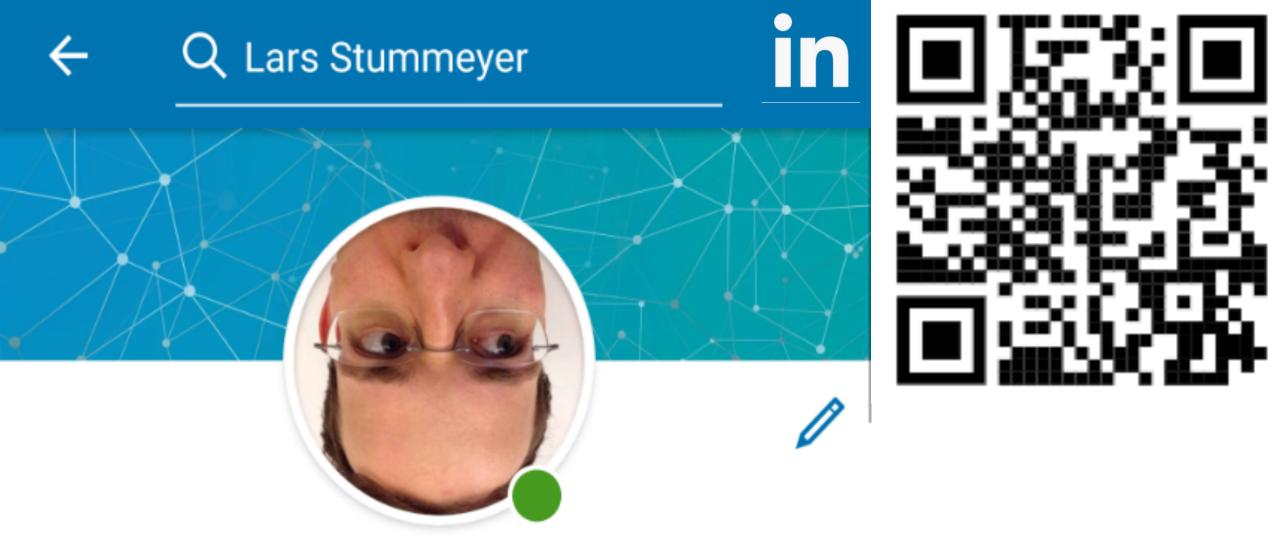


# Digitale Transformation bei Hydro Aluminium – Ein Reisebericht

Lars Stummeyer @ Best Practice Digitalisierung #9 - Startplatz Cologne 10<sup>th</sup> of July 2019 10:30 – 11:00

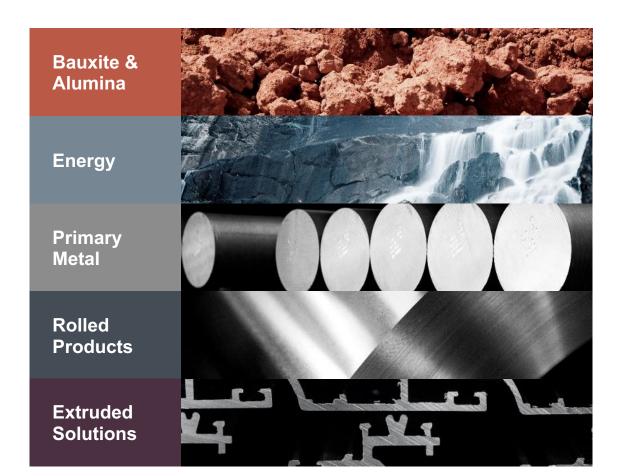


Lars Stummeyer

Head of Digital Transformation

## An integrated and customer-oriented aluminium company





- Global provider of alumina, aluminium and aluminium products and solutions
- Leading businesses along the value chain; raw materials, energy, primary metal, rolled products, extruded solutions and recycling
- 35,000 employees at 150 locations in 40 countries
- Market cap ~EUR 10 billion
- Annual revenues EUR 10 billion (2017)
- Included in Dow Jones Sustainability Indices, Global Compact 100, FTSE4Good



## Rolled Products - Strong positions in market segments











## We see significant transformations in our industry



• **Suppliers** offering tailormade factories including process data e.g Achenbach cooperation Scitis



• **Customers** expecting more data insight into our products e.g. Tetrapak on RP process data

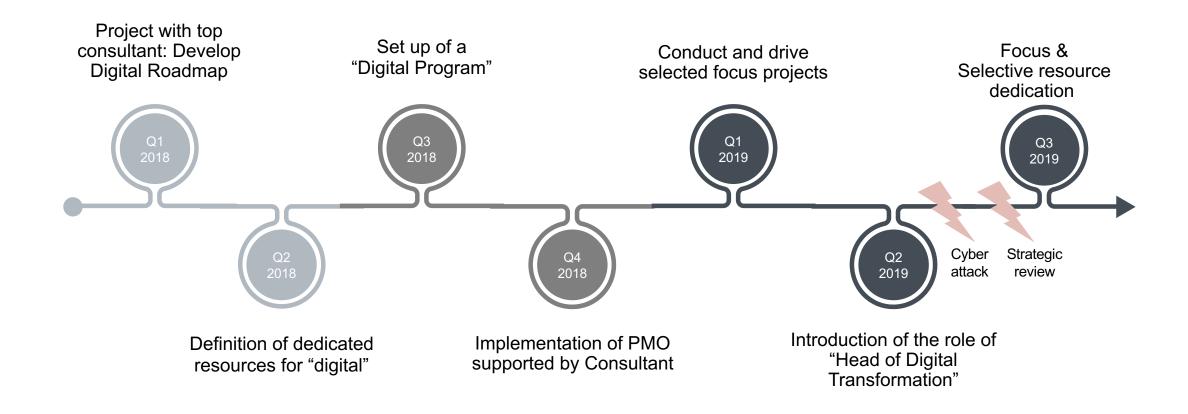


• **Competitors** digitally connecting all market participants to increase efficiencies for all e.g. Klöcker Steel Online platform



## **Development of Digital @ RP**





## The Digital Roadmap describes the future development



Real time production dashboard

to check for chemical composition at the primary side

Speed loss with real time shift performance displayed on dashboards in the control room

Sensors and high resolution

for quality issues then adjust parameters as needed and stop the line automatically when necessary

Smart energy monitoring allows for real time parameter adjustments to minimize energy cost

Health and safety at the cast

Sensors will alert for potential hazards

E2E operation management

Autonomous monitoring of inventory levels using sensors and automated cranes to move coils

Digitalization of operation

Using RFID tags, automated quality checks with iPhone apps

cameras continuously monitor

Predictive maintenance at the rolling mill

Sensors continuously monitor machine health and maintenance is initiated automatically

Real time performance management at the rolling mill

allows for fact based problem solving as soon as issues arise Auto sensing equipment

Equipment settings are self-adjusted based on ambient conditions to move material around

Smart glasses/ devices

to support maintenance

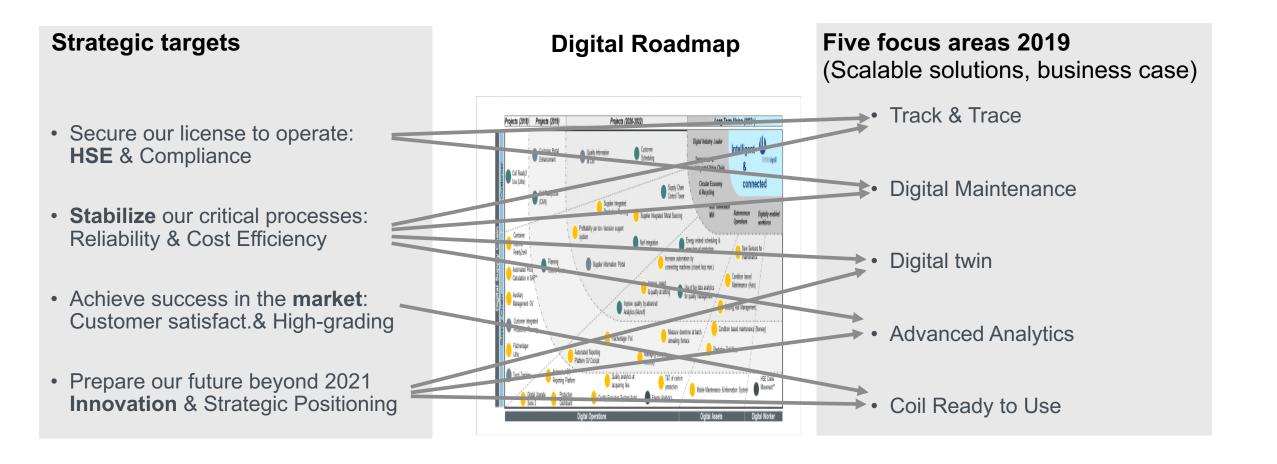
Self-directed vehicles

Intra-factory transportation path and priority optimization to move coils around

Computing advanced analytics for complex planning, scheduling and flow path management optimization

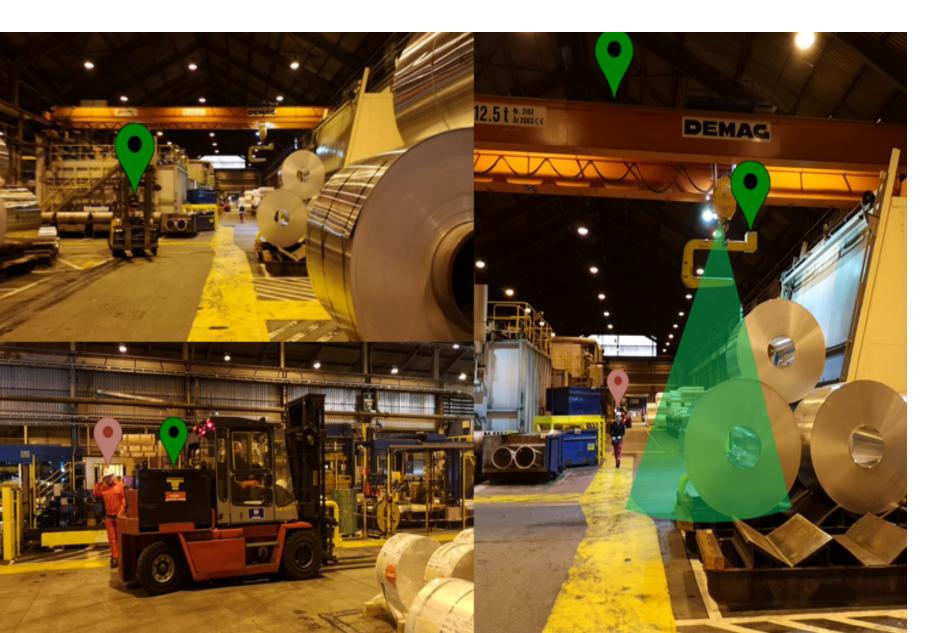
## "Digital" is an important enabler for our strategic targets





## **#Track & Trace – Technology is the base**



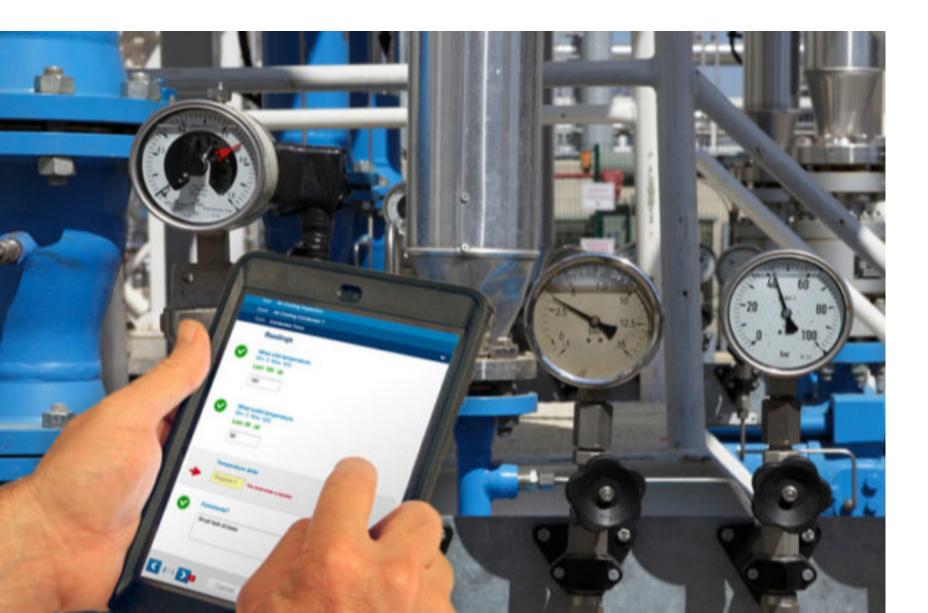


- Target: Improve safety & efficiency
- Technology:

   Localisation
   technology by
   tracking movements
- Use cases:
  - Localisation of coils
  - geo fencing
  - automatic guided vehicles

### **#Digital Maintenance – what about the employees?**





- Target: Increase reliability and efficiency
- Technology: Digital enablement of maintenace
- Challenge
   Digitally enabled worker

## **#Digital Twin – managing complexity**





#### Target:

- Step-change
- virtual simulation
- Technolgoy: Digital copy of a physical object

#### Challenge:

- data quality
- Complex set-up for process simulation

## #Advanced Analytics / Big Data – new insights into data





#### Target:

- step change
- democratization of data
- **Technology:** Use of big data for forecasting future events and behaviors

#### Challenge:

- new roles
- new ways of working
- change managements

## Taking "more informed decisions" is a change management project







## "Agile" is not only a concept but a culture

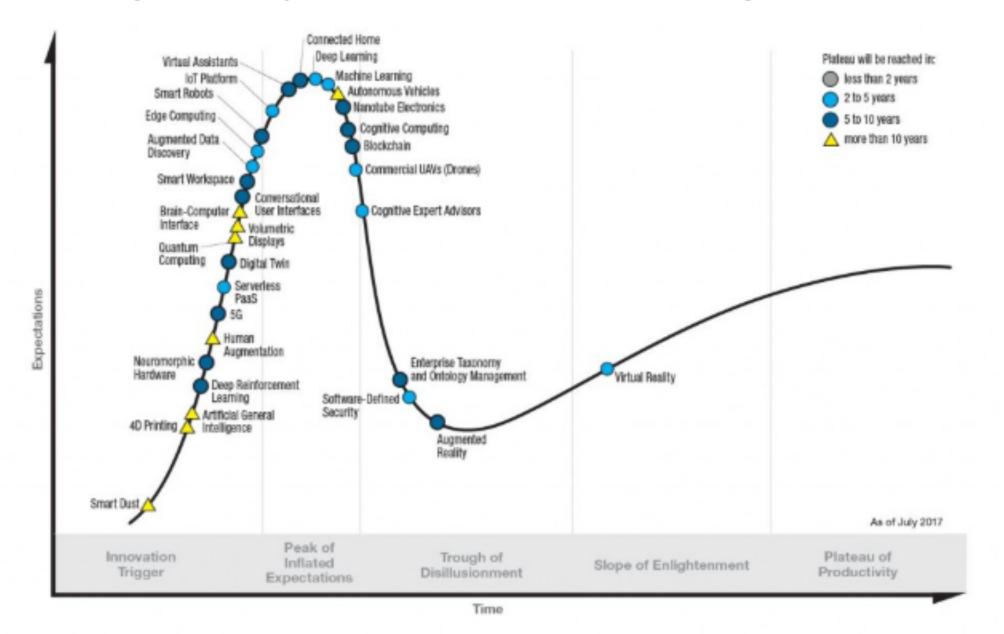






## Distinguish "Hype" vs "mature technological solutions"





## Challenge is to turn technology into money











We are aluminium

