

# Digital transformation along the textile value chain

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What you might be thinking of ...



But you may not be thinking about...



And you may not be thinking about...

# 10 %

... of all materials are fibre -based



# Digital Capability Center Aachen



Digital Capability Center  
Aachen



# Digital Capability Center Aachen

Where do I  
get data  
from?

Accelerator for  
digital  
production

What is  
“Industry  
4.0”?

Model factory  
Industry 4.0

How to  
generate  
benefits  
from  
data?

Lean State ⇔  
Future State

Training- &  
Qualification  
Center



# Digital Capability Center Aachen





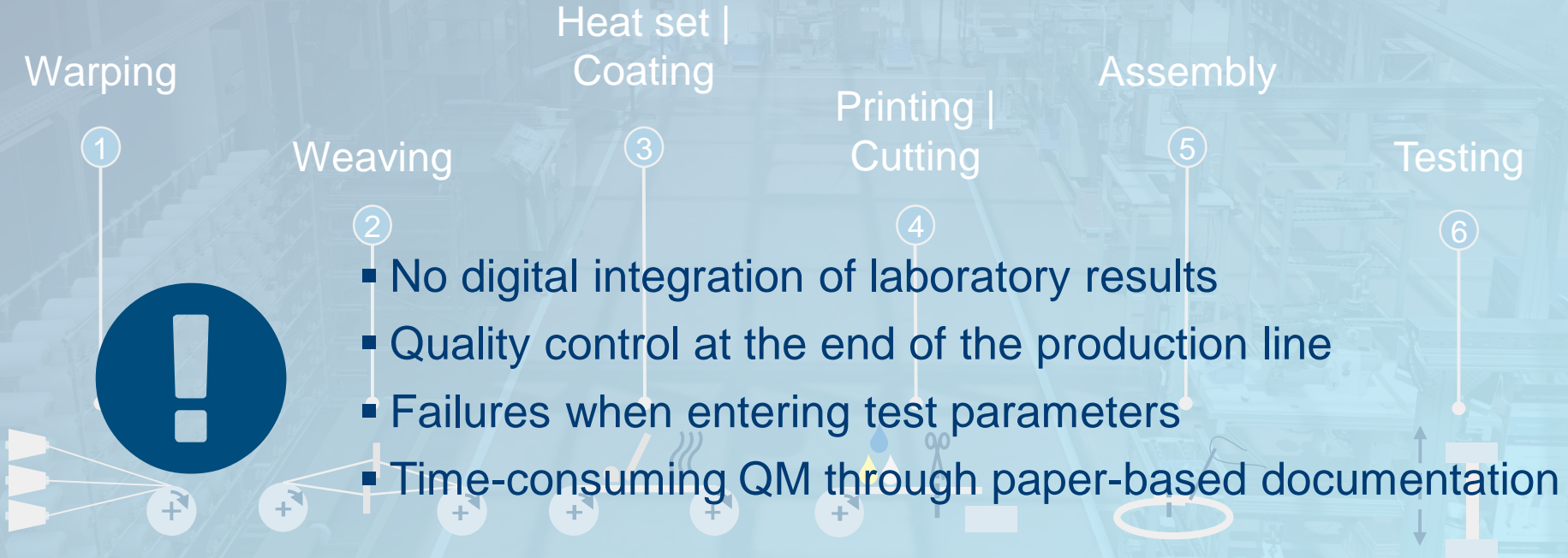


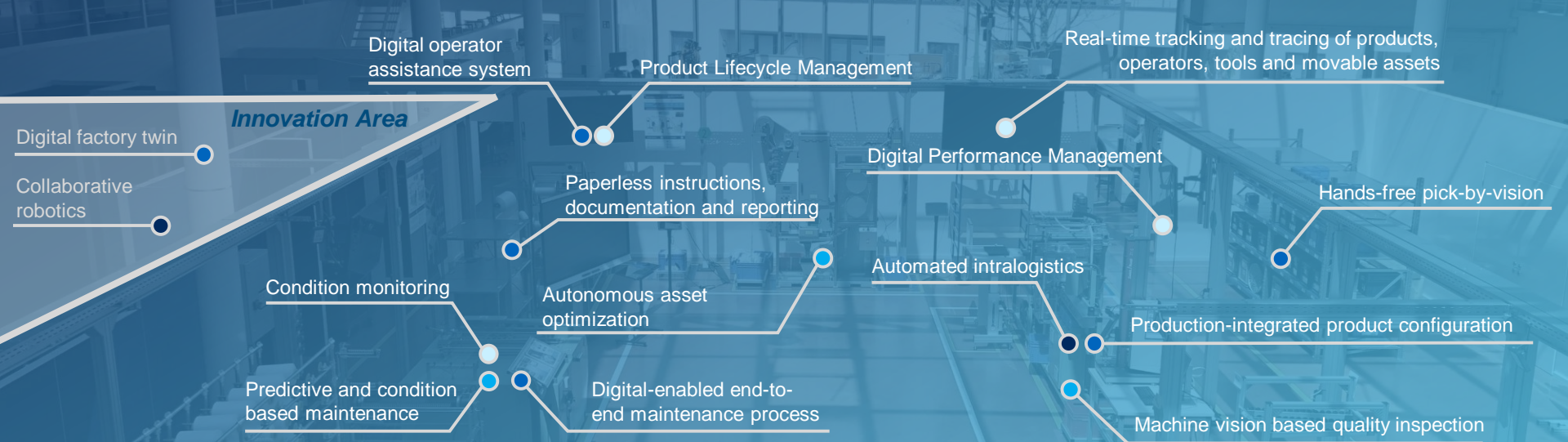
Narrow fabric  
Customized Design  
Batch size 1  
Individual Log in

THE  
PRODUCT

A SMART  
WRISTBAND


# Production line at the DCC





**Innovation Area**

**Solution Categories**

-  **Digital enabled management**  
(used by e.g. plant manager )
-  **Advanced analytics**  
(used by e.g. quality engineer)
-  **Digital ways of working**  
(used by e.g. operator)
-  **Advanced automation**  
(used by e.g. logistician)

Integrated by  
an IT/OT  
architecture

# Ted Test works at a textile factory

He is responsible for...



product and process quality.



the operation and maintenance of the machines.



the feedback of the quality control from the laboratory into the production.

He's dissatisfied with ...



the dead time between laboratory results and production.



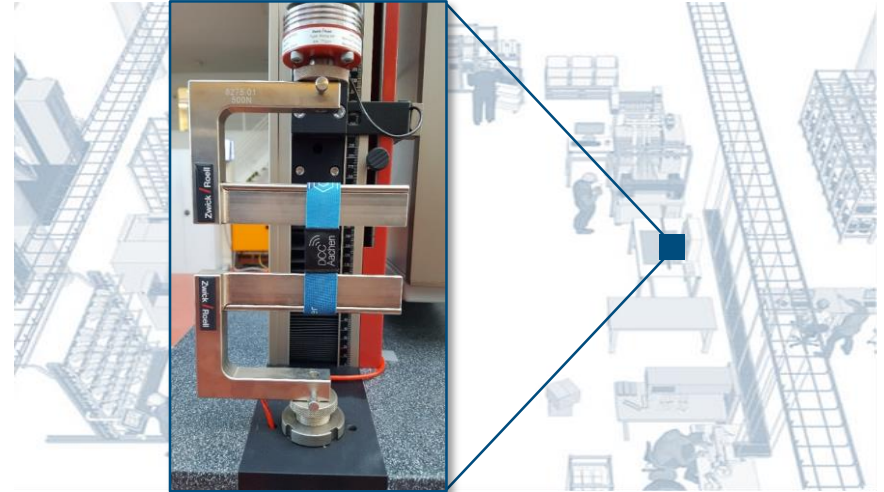
the different testing and production requirements.



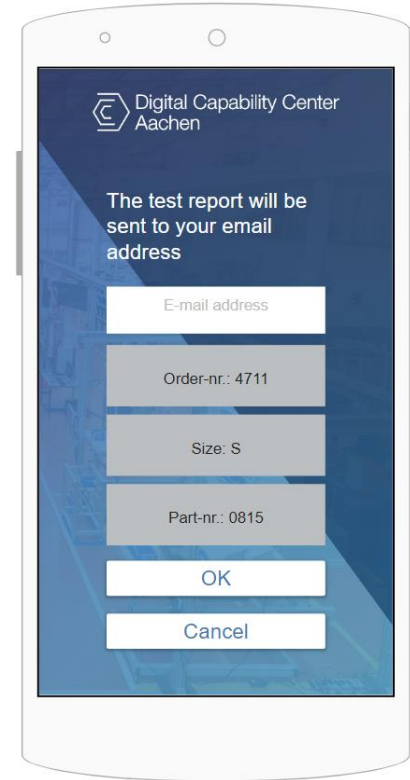
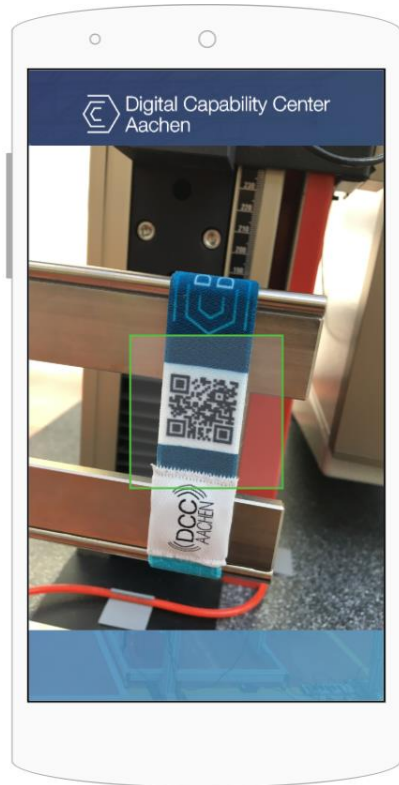
the complex documentation obligation.

# Digital integration of a testing machine

- QR (Quick Response) Code
- RFID (Radio Frequency Identification)
- Integration of the testing machine
- Recording, visualization and feedback of test results in real time

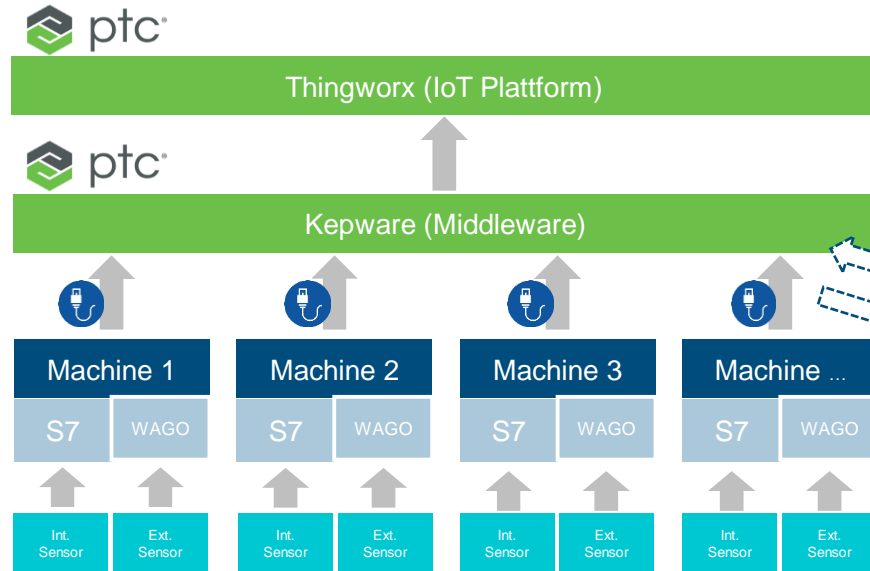


# Controlling of **testXpert**<sup>®</sup> via app



# Realization of digital applications

## IT-Infrastructure



## Integration of the testing machine



**Zwick / Roell**

# CONDITION MONITORING

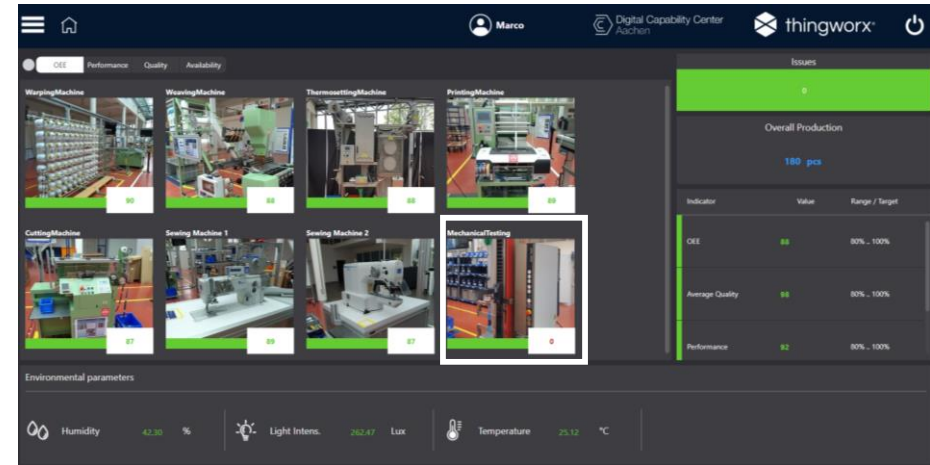
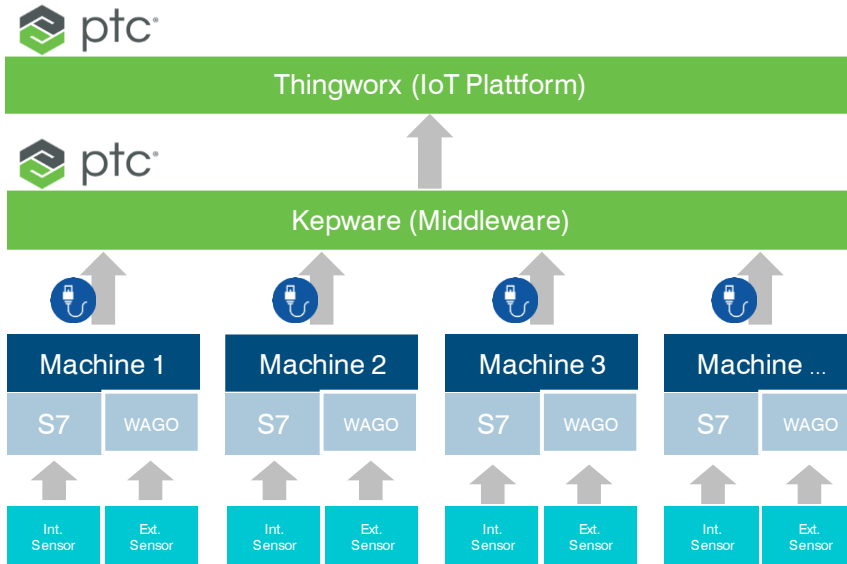
Shorter  
reaction time



Live KPIs  
Autonomous alert  
Data corelation

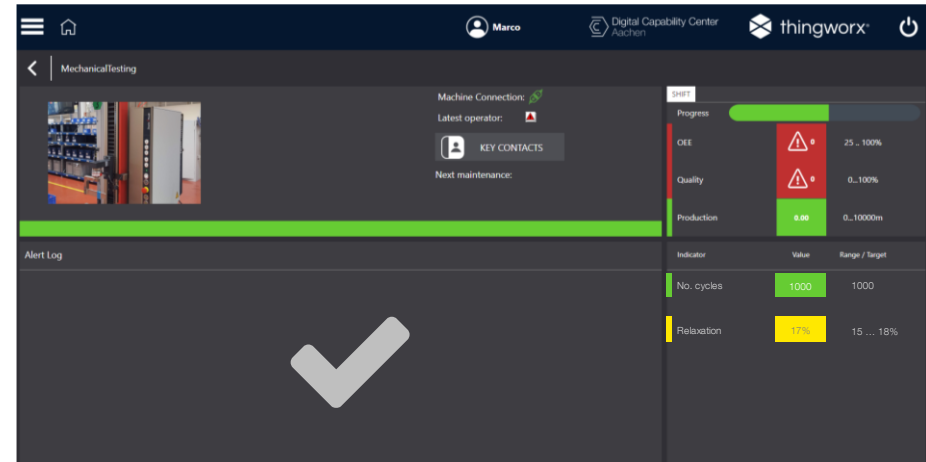
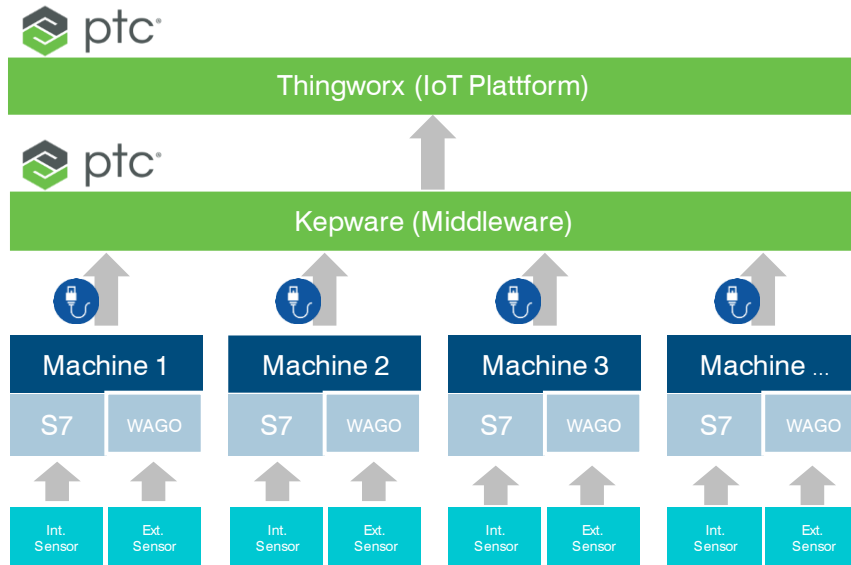


# Integration of the Zwick testing machine



**Zwick / Roell**

# Integration of the Zwick testing machine



**Zwick / Roell**

# DIGITAL PERFORMANCE MANAGEMENT

Empowered problem  
solving




Real-time KPIs  
Advanced analytics  
Problem escalation  
Central alerts

# Tailored guidelines for remote maintenance Machine set up

## DIGITAL ASSISTANCE SYSTEMS

Improved remote  
maintenance



A woman wearing AR glasses is shown in a warehouse setting, holding a blue bin. The bin has a label with a barcode and the text 'MI 2126'. She is wearing a black polo shirt with the 'Digital Capability Center Aachen' logo. The background shows blue metal shelving units with more bins.

Picking guide  
Material identification  
and selection  
AR glasses

AUGMENTED  
REALITY

Improved logistics  
efficiency



Acquires data related  
to the operator's  
movement  
Enhanced  
ergonomics

## ADAPTIVE WORKSTATION

Enhanced  
ergonomics of the  
work place

# Best practice examples

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# Project Examples

Digital sewing factory in Europe – sports industry

Problem: Loss of sales

Development of a digitized factory for:

Aim:

- ...faster reaction to the market
- ...satisfaction of customers' needs
- ...more flexibility
- ...increase of turnover

→ Produce several products in 1 sewing line



Analysis of existing factories

Combination of different sewing lines

Create new production concepts  
and lines for automatized and  
digital factory



# Project Examples

## Predictive maintenance – Jeans manufacturing

Problem: High machine downtimes

Measuring machine wear in real time to:

Aim:

- ...get information when to replace machine components
- ...plan your maintenance more accurate
- ...save costs

→ Expand tool to every machine type (from spinning to finishing) and process at the jeans manufacturer



Choose technology & machine type

Data assessment

Model implementation and dashboard construction

# Projektbeispiele

## Condition Monitoring – Bakery

Problem: Extended Lead times and complex products

Concepts of a digital baking line

Aim:

- ...Shortening of lead times
- ...Reduction of quality defects with small batch sizes
- ...Training & qualification of employees

→ Extension of the system to include further processes in the production



Definition of process- and technology

Data analysis

Digitalization of paper-based information and visualization in Dashboard



Do you already benefit from digitization?



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