T.CON

perlen
packaging

OPERATIONAL EXCELLENCE

Meeting agile business
requirements and optimizing mill
processes with data-driven integration

How do small teams manage IT applications for 5 factories across 4 continents?

THE SPEAKERS

Hans-Peter Aregger

CIO
Chemie Papier Holding AG

Philipp Morgenthaler

COO
Perlen Packaging

Thomas Blöchl

COO
T.CON GmbH & Co. KG

AGENDA

01

Our Company

Who we are and how we captured our market

02

Our Production

A spider web of material and information flows across continents

03

Lean IT

IT as one of the pillars of sustainable production: a lean approach

04

Our data-driven future

Current use-cases that highlight the path forward

05

A strategic cooperation

How we work with our IT partner T.CON

01

OUR COMPANY

CHEMIE & PAPIER HOLDING AG

Who are we?

	perlen packaging	PVC / PVdC pharmaceutical packaging films	🇨🇭 🇺🇸 🇩🇪 🇨🇳 🇧🇷
	perlen papier ag	Newspaper and magazine paper	🇨🇭 🇫🇷 🇩🇪
	ZEOCHEM®	Molecular sieves, silica and chromatography gels	🇨🇭 🇺🇸 🇨🇳 🇧🇦

GLOBAL PHARMA BLISTER PACKAGING

Demand for thermoforming films

PVC

55%

PVdC

40%

ACLAR

3%

PP

1%

Others

1%

▶ Pharmaceutical Market 2018-2023
CAGR 3 – 6%

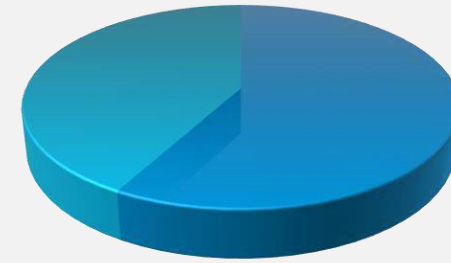▶ Blister Packaging
CAGR > 4 - 7%

▶ Trend to high barrier
PVDC 6 - 9% p.a.
PVC 3 - 5% p.a.
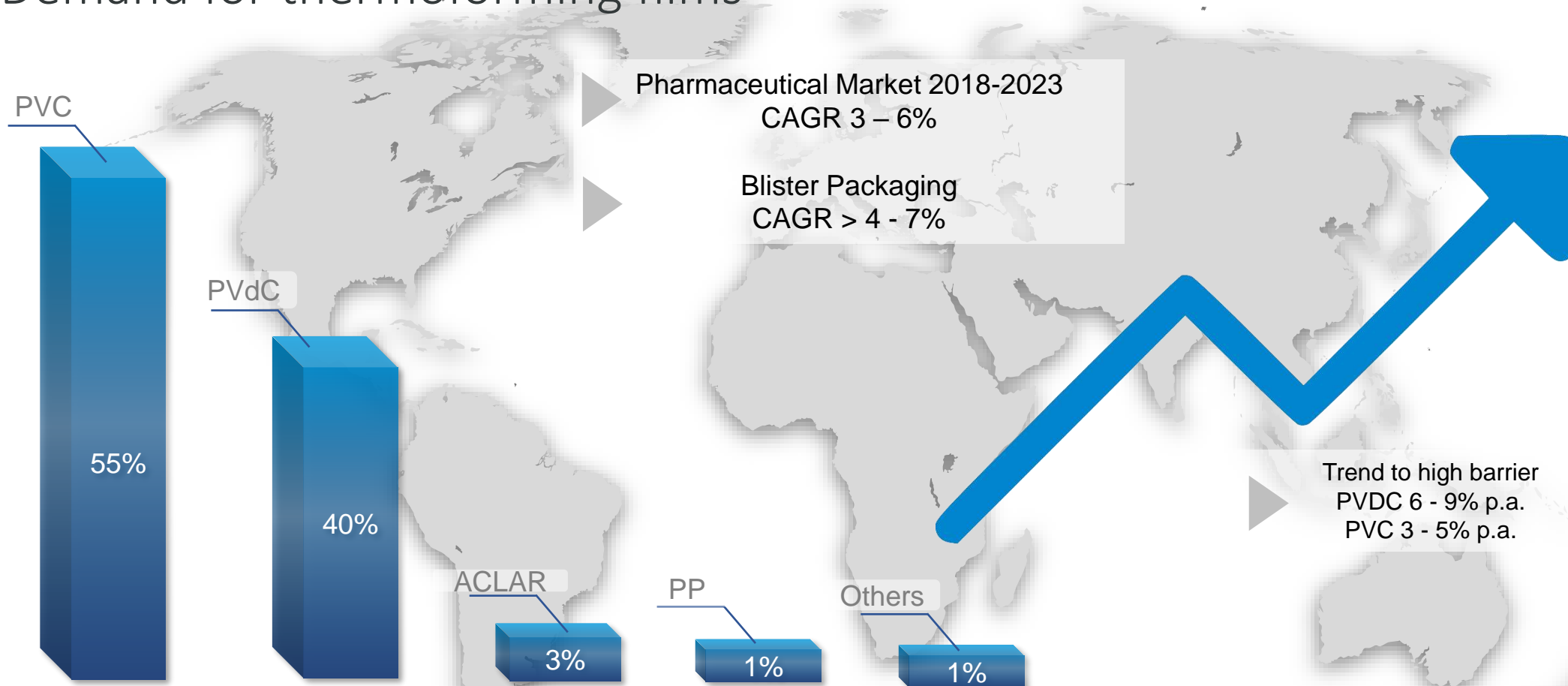
Blister Packaging – in tons 2018, Source: MR 1, Perlen Packaging 2018

REFERENCES

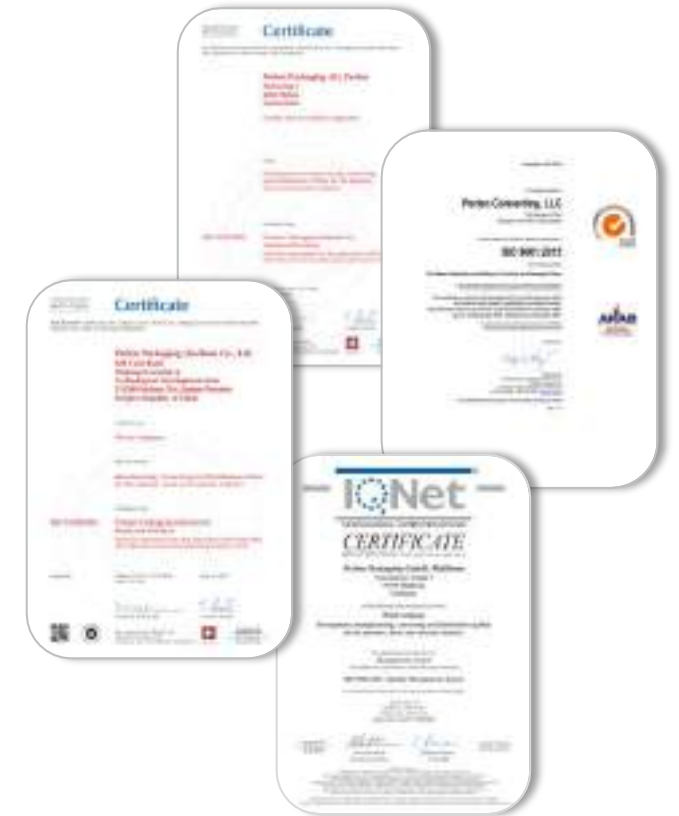Multinational customers
42%

Local customers
58%

8

PHARMA CERTIFICATES

Compliance with the highest standards

- ISO 15378 GMP (CH, DE, CN)

- ISO 9001

- US FDA DMF No. 10686, 9072, 30501

- China CDE – Center for Drug Evaluation

- ISO 50001 (Perlen Packaging GmbH, Müllheim)
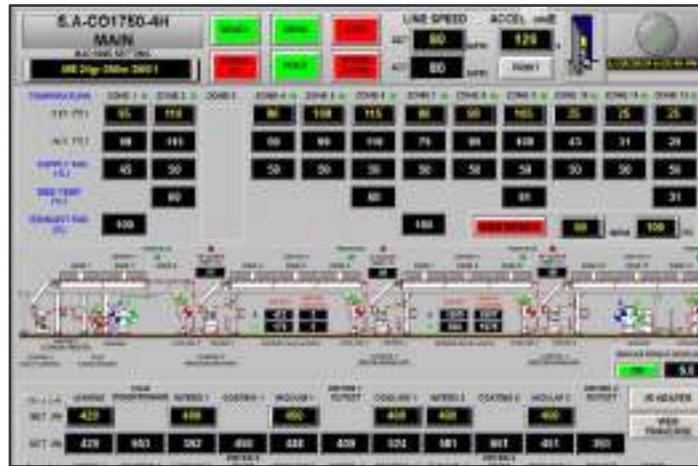 Energy Management System

02

OUR
PRODUCTION
NETWORK

BUSINESS UNIT PACKAGING

Global production

Perlen Packaging GmbH, Müllheim
Center of Excellence for mono films

Perlen Packaging AG, Perlen
Center of Excellence for barrier films

Perlen Packaging LLC, Whippany
Service and Logistics Center for NAFTA

Perlen Packaging Ltda., Anápolis
Service and Logistics Center for South America

Perlen Packaging (Suzhou) Co., Ltd.
Center of Excellence for barrier films

Turnover 2020 CHF 162.3 million with 448 employees

11

COATING PROCESS

03

LEAN IT

LEAN IT
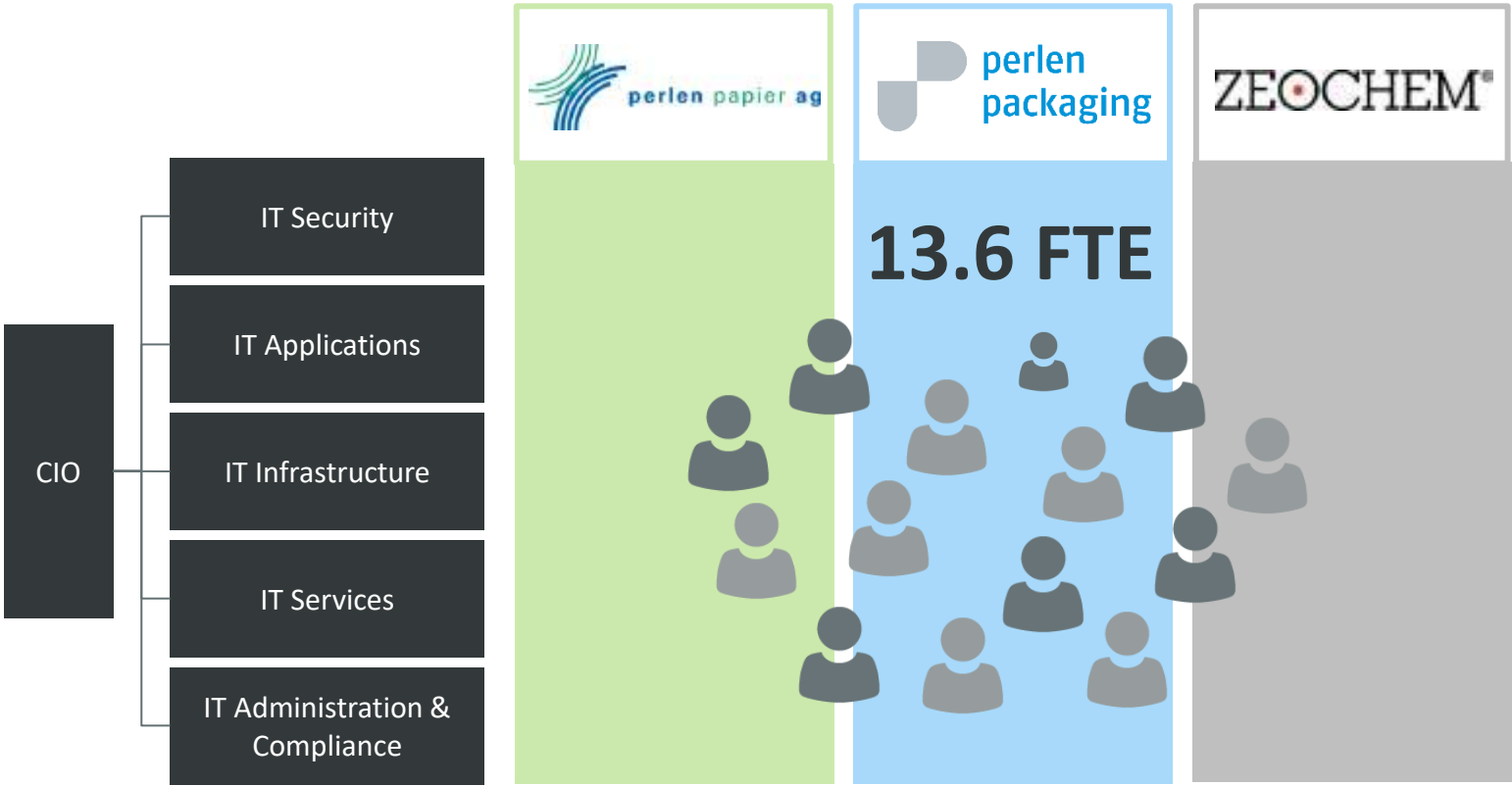
How to handle this with 13.6 FTE?

13.6 FTE

Few but strong partners

Flexible employees

Cloud strategy

CIO

IT Security

IT Applications

IT Infrastructure

IT Services

IT Administration & Compliance

perlen papier ag

perlen packaging

ZEOCHEM®

INFRASTRUCTURE

BUSINESS PROCESSES

SALES

DEVELOPMENT

PURCHASING

PRODUCTION

QUALITY

LOGISTICS

INVOICING

PRODUCTION PROCESSES

Calender 3x

Coating 4x

Slitting 12x

Packaging 5x
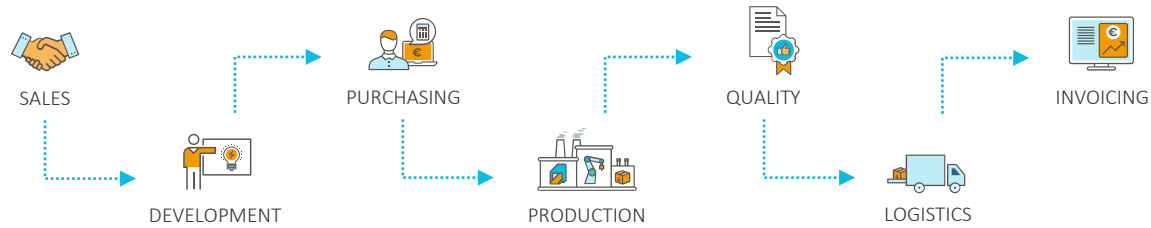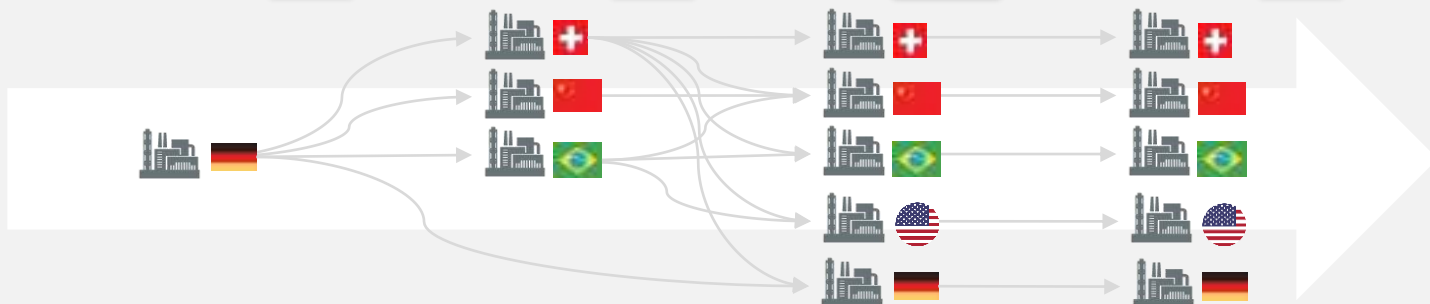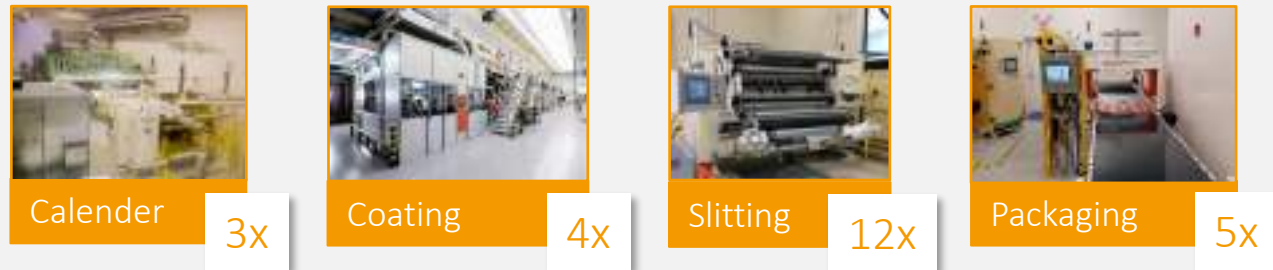
IT INFRASTRUCTURE

SAP Business Technology Plattform

Cloud Data Lake

Cloud for Production

SAP Cloud Connector

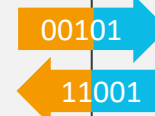| SAP BO | SAP S/4HANA | MES CAT 5x |

MES CAT Connector 5x

00101 →
← 11001

OPC-UA → Data Excange

Simatic WinCC → Control and User Interfaces
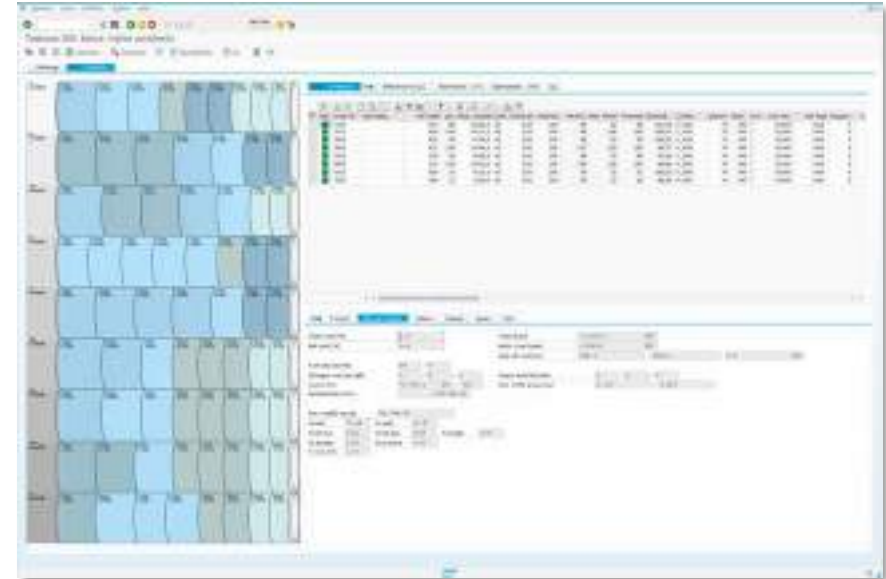
ISRA → Quality Inspection

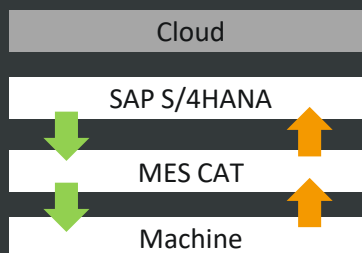Other 3rd Party Systems

TRIM OPTIMIZATION AND SLITTING

Examples of End-to-End Integration

- TRIM Optimization integrated in SAP S/4HANA Planning

- Automated positioning of knifes on Slitting Machines

- Camera-based defect recognition and storage of slitting data in SAP S/4HANA

Data Flow

Cloud

SAP S/4HANA

MES CAT

Machine

PLANNED IMPROVEMENTS

- Identification of clusters of defect with machine learning for optimized slitting
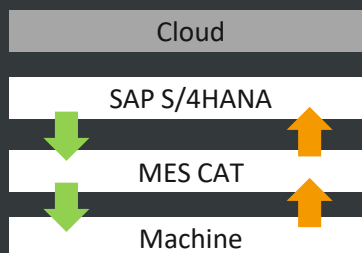
AUTOMATED ROLL TRANSPORT

Examples of End-to-End Integration

- Automated transfer of rolls from machine to machine

- Integration into SAP S/4HANA Warehouse Management and Planning

- Dynamic Routing based on Production Processes and Quality Times
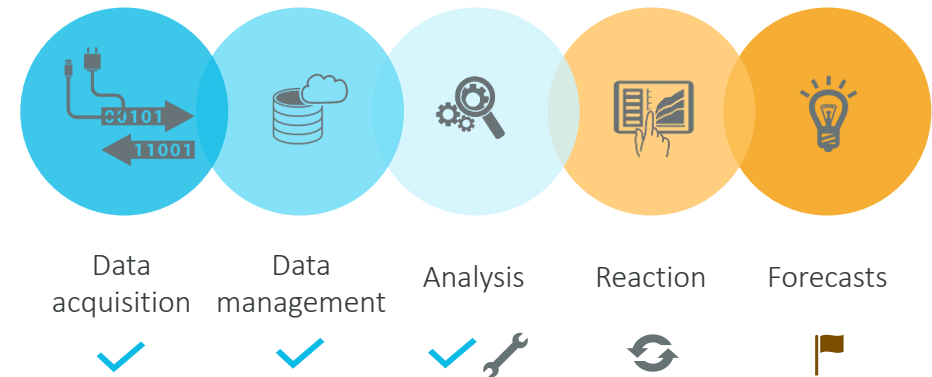
Data Flow

Cloud

SAP S/4HANA

MES CAT

Machine

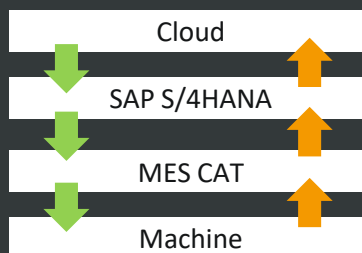**PLANNED IMPROVEMENTS**

- Global Roll-Out

OPTIMIZED MACHINE SETUP (IOT)

Examples of End-to-End Integration

- Administration of machine setting parameters

- Centralize all IoT data across machines and locations

- Golden batch analyzes data from various locations along the value adding chain

- Optimization of machine settings based on machine learning and current production condition

Data acquisition	Data management	Analysis	Reaction	Forecasts

Data Flow

Cloud

SAP S/4HANA

MES CAT

Machine

PLANNED IMPROVEMENTS

- Integration of quality inspection systems

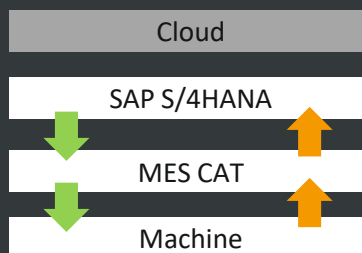- Find and communicate outliers and problems automatically

REAL-TIME INFORMATION MANAGEMENT

Examples of End-to-End Integration

- Central Cockpit for Production KPI´s

- Automated reporting

- Detailed information across all production sites and hierarchical levels

- Flexible connection of data sources

Data Flow

Cloud

SAP S/4HANA

MES CAT
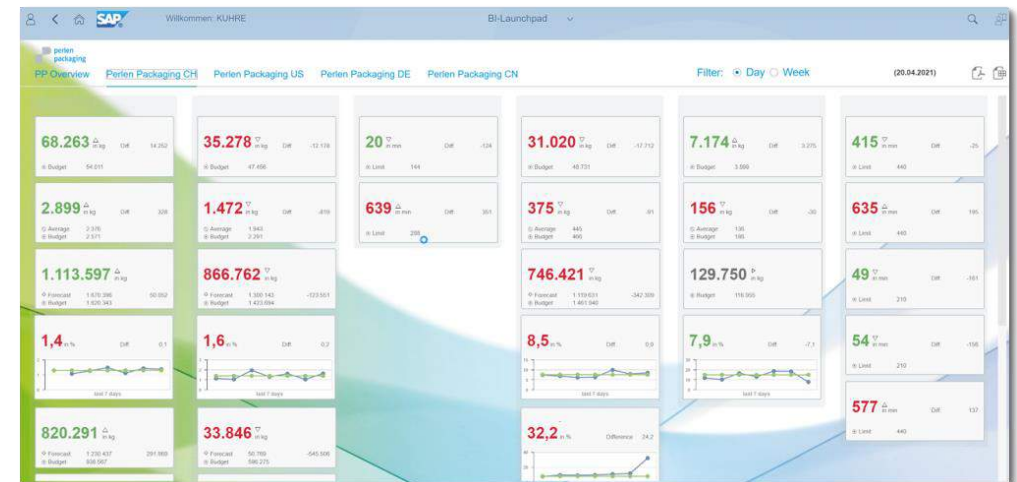
Machine

PLANNED IMPROVEMENTS

- Further KPI´s

- Detailed information by more drill-down capabilities

04

OUR DATA-DRIVEN FUTURE

DRIVERS OF EXCELLENCE

Focus areas for data-driven innovation

EQUIPMENT AUTOPILOTS

IoT and machine learning supported process monitoring and automation

DIGITAL TWINS

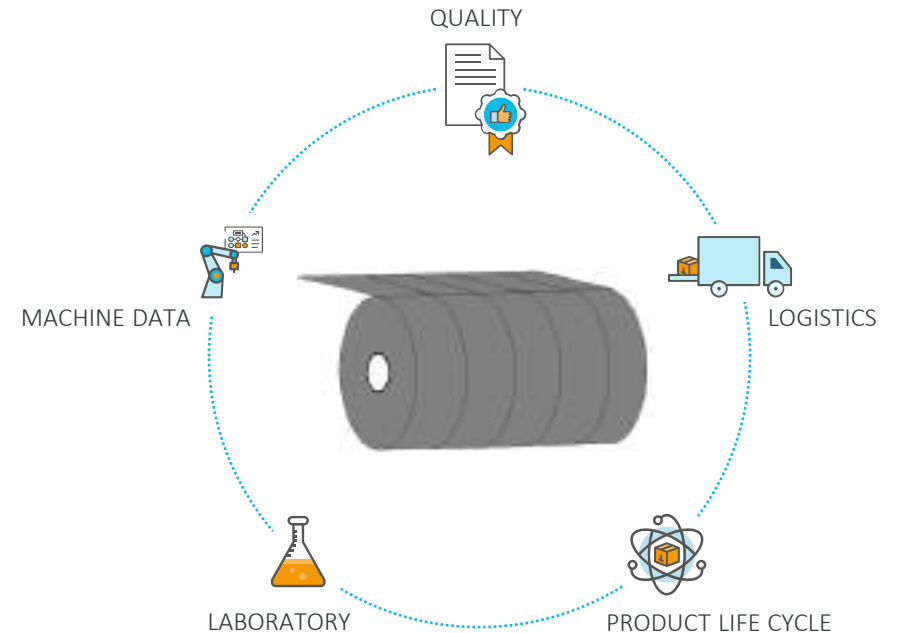Centralize and make information available across locations and domains

DATA DRIVES DECISIONS

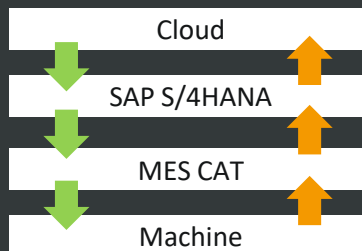Sound operational and strategic decision support for every stakeholder

DIGITAL TWIN FOR EVERY ROLL

Future of End-to-End Integration

- Collection of all production parameters

- Collection of all quality results

- Collection of all business process parameters

- "LU Cockpit" for 360° – All Information on every roll ever produced one click away

QUALITY

MACHINE DATA

LOGISTICS

LABORATORY

PRODUCT LIFE CYCLE

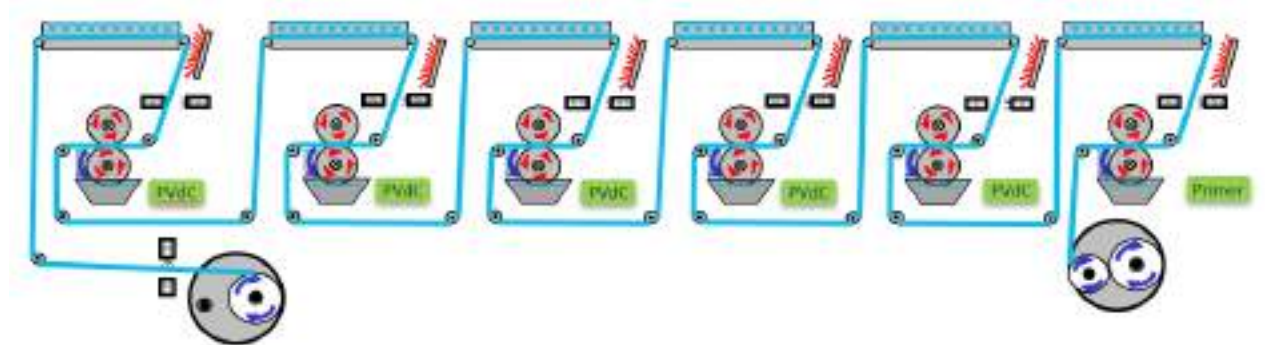Data Flow

Cloud

SAP S/4HANA

MES CAT

Machine

PLANNED INNOVATIONS

- Full Digital Documentation: Audit Trail

- Integration across all locations enables for an end-to-end audit trail for each produced roll
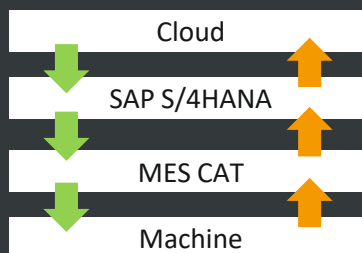
AUTO-PILOT FOR COATING

Predictive Monitoring of critical processes

- Monitor process stability

- Continuously evaluate expected quality with machine learning

- Communicate alarms and actionable data to machine operators

Data Flow

Cloud
SAP S/4HANA
MES CAT
Machine

05

WHAT OUR PARTNERS THINK

Operational Excellence

5 — Aligned and Innovative Organization

4 — Continues Improvement and Innovation

3 — Selected Technologies | Platforms | Partners

2 — End-to-End Approach

1 — Integration and Harmonization

OUR TEAM
FOR YOUR SUCCESS

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**OR VISIT US AT THE
PARTNER ZONE!**