



KROHNE

Our Vision

We as KROHNE want to contribute to a green world for the next generations. One of the projects is a paperless factory

KROHNE Altometer the paperless factory



KROHNE Altometer

History

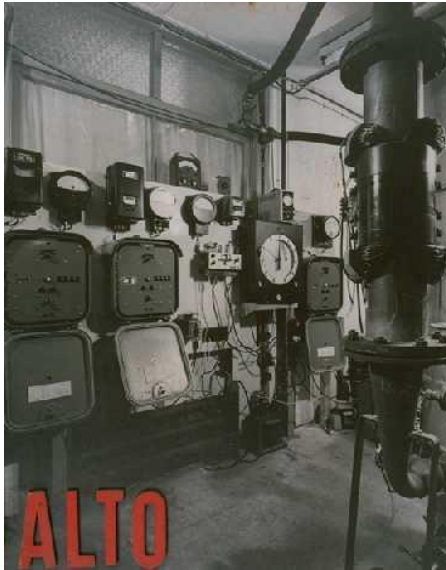


TOBI - later ALTO -
manufactures the
first EMF for
industrial
applications in
Europe

1952

KROHNE Altimeter

History



Sliedrecht

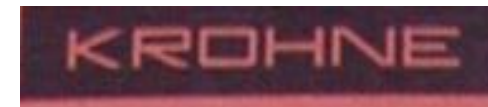
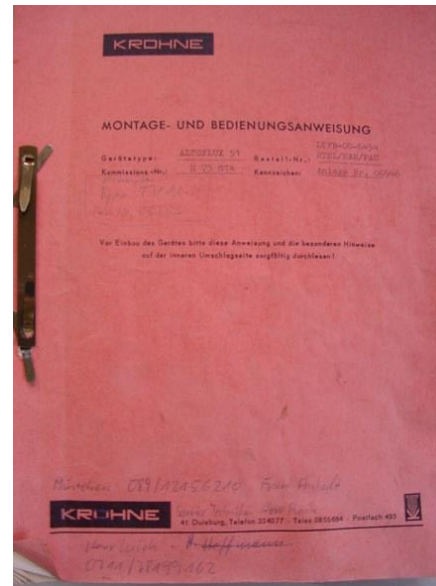
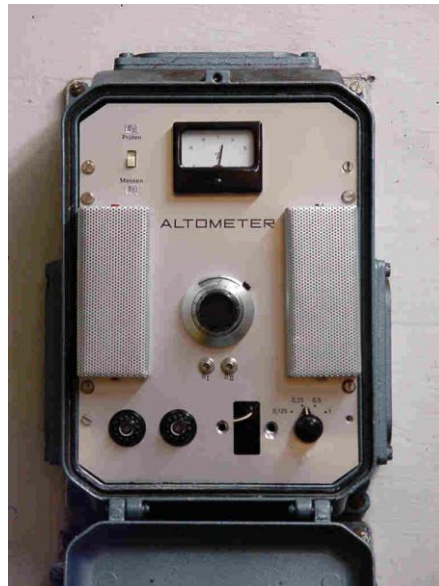


TOBI moves to
Sliedrecht, the
centre of the
Dutch dredging
industry

1958

KROHNE Altometer

History



acquires



1962

KROHNE Altometer

History



Development of
the first inline
ultrasonic
flowmeter.
First application
in a refinery

1979

KROHNE Altometer

History



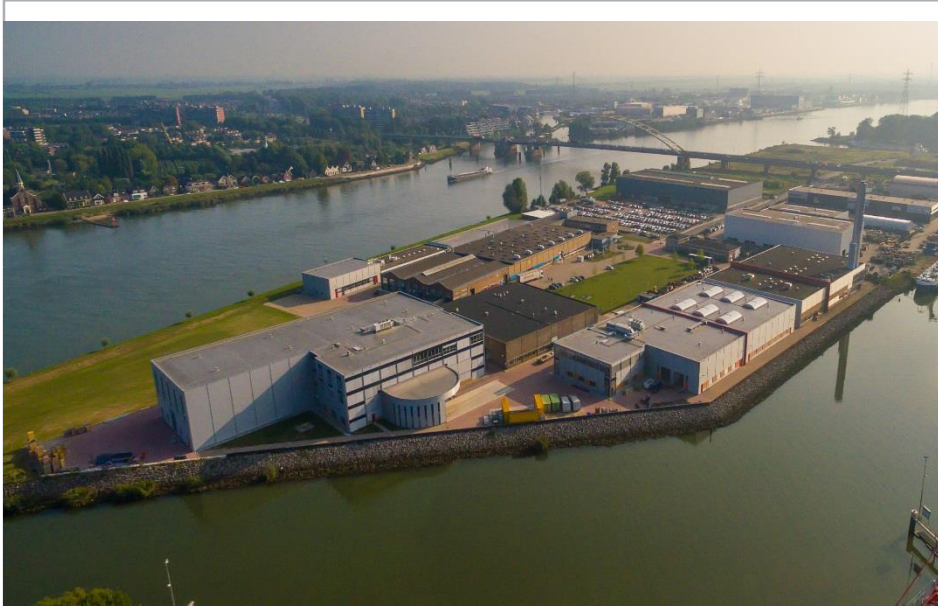
KROHNE Altometer opens new production facilities in Dordrecht.

- Houses the world's largest calibration facility
- In 2002 new buildings for ultrasonic flow meters

1999

KROHNE Altometer | Feeder Factory

Key Figures Anno 2018



- Annual turnover more than €130 mln
- Annual production: 95.000 flowmeters
- > 95% of local production for export
- Over 500 employees

2018

KROHNE Altimeter

In The Netherlands

Dordrecht / KROHNE Altimeter:

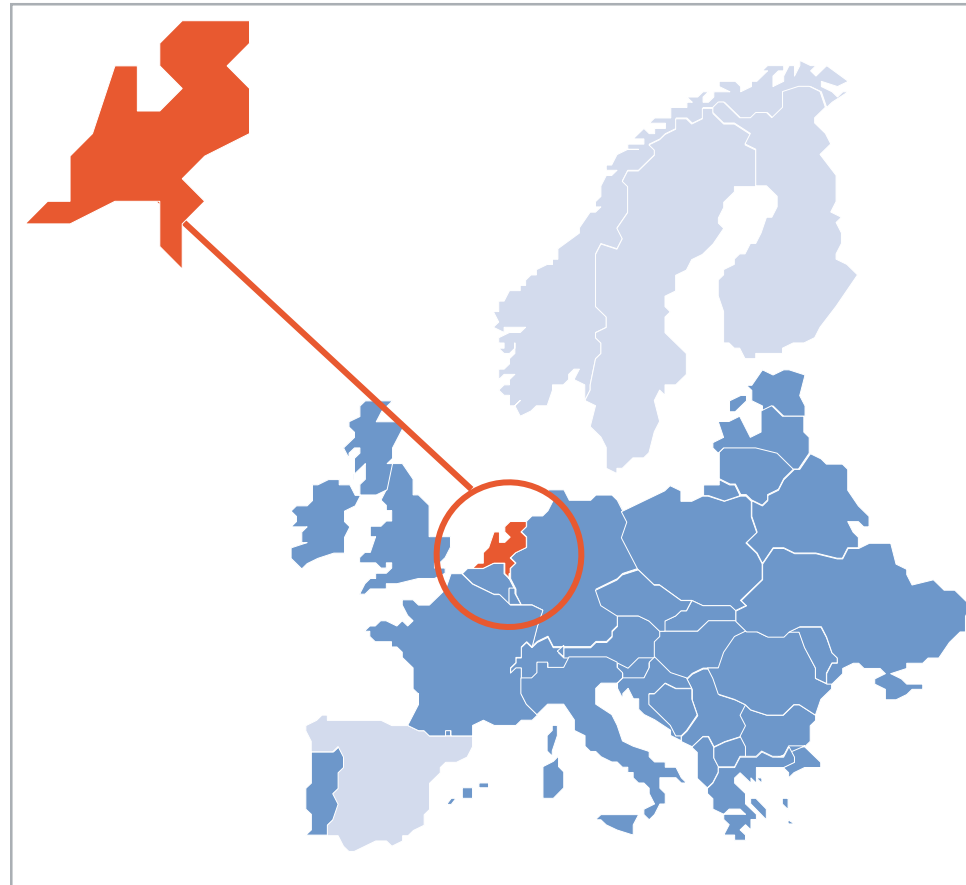
- Largest feeder factory of KROHNE group
- Global competence centre
- Production, R&D, Marketing of:
 - EMF DN 2,5 – 3000
 - UFM DN 15 - 4000

Dordrecht / KROHNE Nederland

- Dutch sales company

Breda / KOG

- KROHNE Oil & Gas B.V.:
Systems & Products for O&G





Facts KROHNE Altimeter

- We have 2.4 M printed papers each year in 1 production facility
- 50.000 papers = 1 average tree of 30cm
- Power consumption of a printer runs up to 2kw
- Waiting times up to 30 minutes
- Information from yesterday
- Customer expectation is “NOW “

Fact :

Within 6 years, a jungle with the size of Utrecht will be gone

Why so much paper ?

Measurement
size
Material
Flux
Shape
Diameter
Cover
Ultrasoon
Color
Pressure
Technology
Type



Many kings result in many customer specific products ~ Many production orders with small sizes result in many papers

Road map phase 1 Paperless project

- Start project: “Proof of Concept “ Febr. 2018
- Presentation results “POC “ May 2018
- Start Building application May – Sept. 2018
- Fine tuning Sept. – Dec. 2018
- Worldwide roll-out program

Also includes:

- Production QR code
- Work place instructions ‘digitalisation of the shopfloor’
- Production execution



KROHNE Fo(u)rward.

smart digital production.

Paperless Shopfloor



From paper to a real time digital connected shopfloor

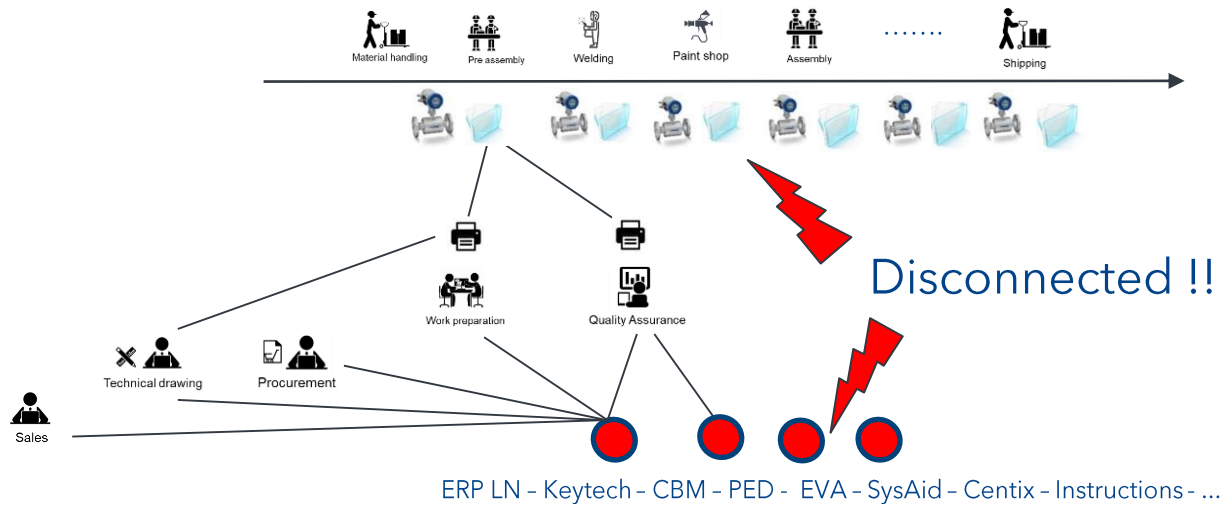
Connectivity from sales floor to shop floor

From vertical integration :
Sales to Shopfloor to Piece
Towards

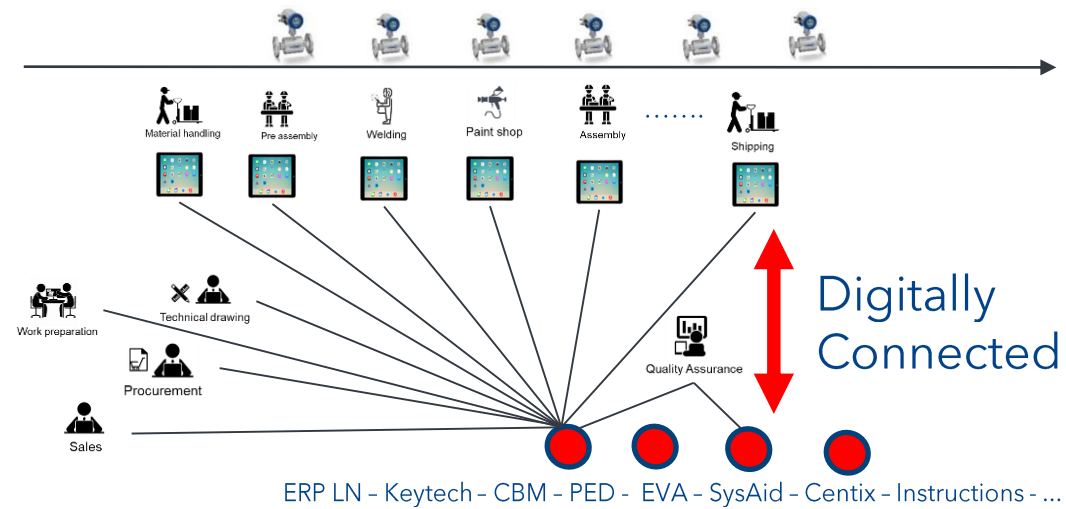
Horizontal integration :
Raw material to supplier to production to customer

Real time

Current situation production



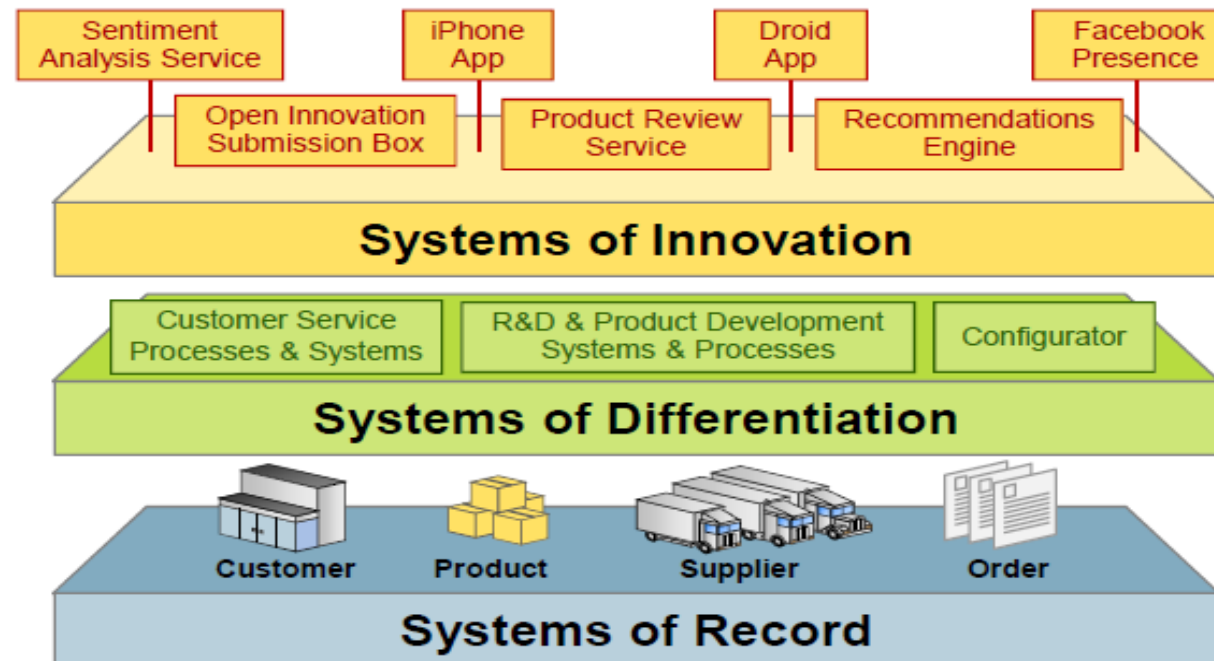
Future situation production



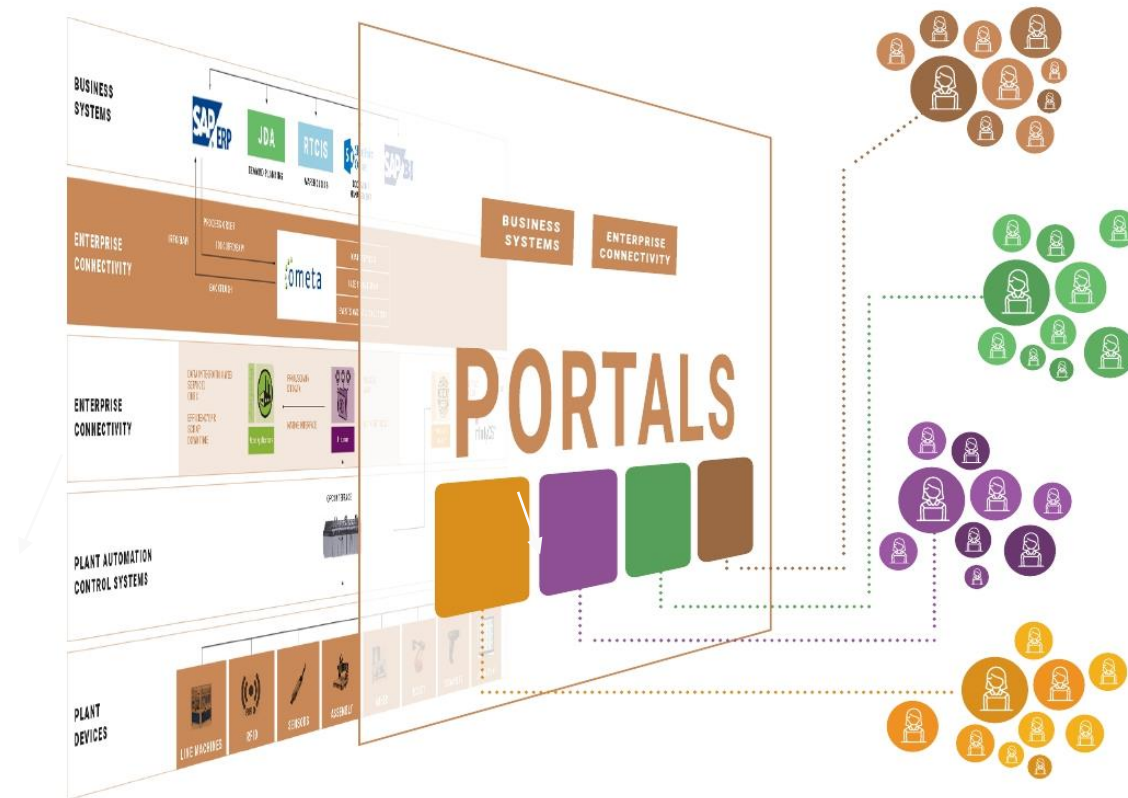
Pace-layer Application Strategy

by Gartner

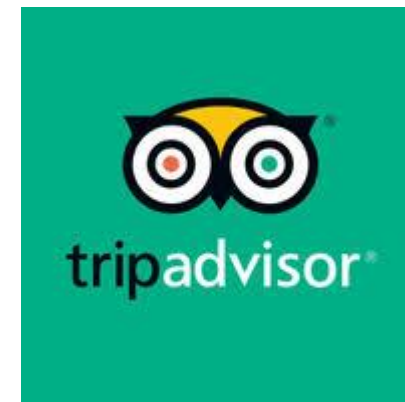
Facebook, Twitter, YouTube, Communities, Portal, etc.

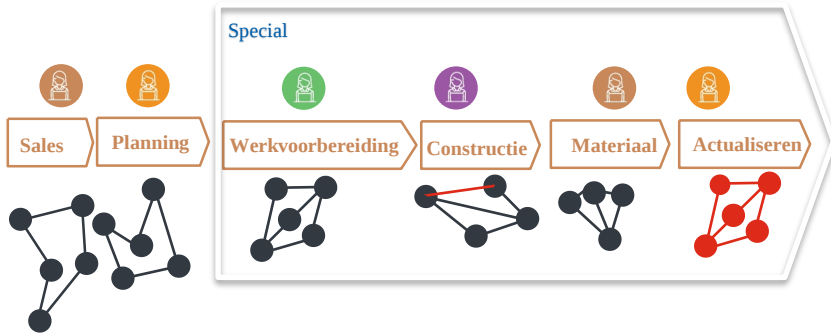


Collaboration portals



What`s a portal?

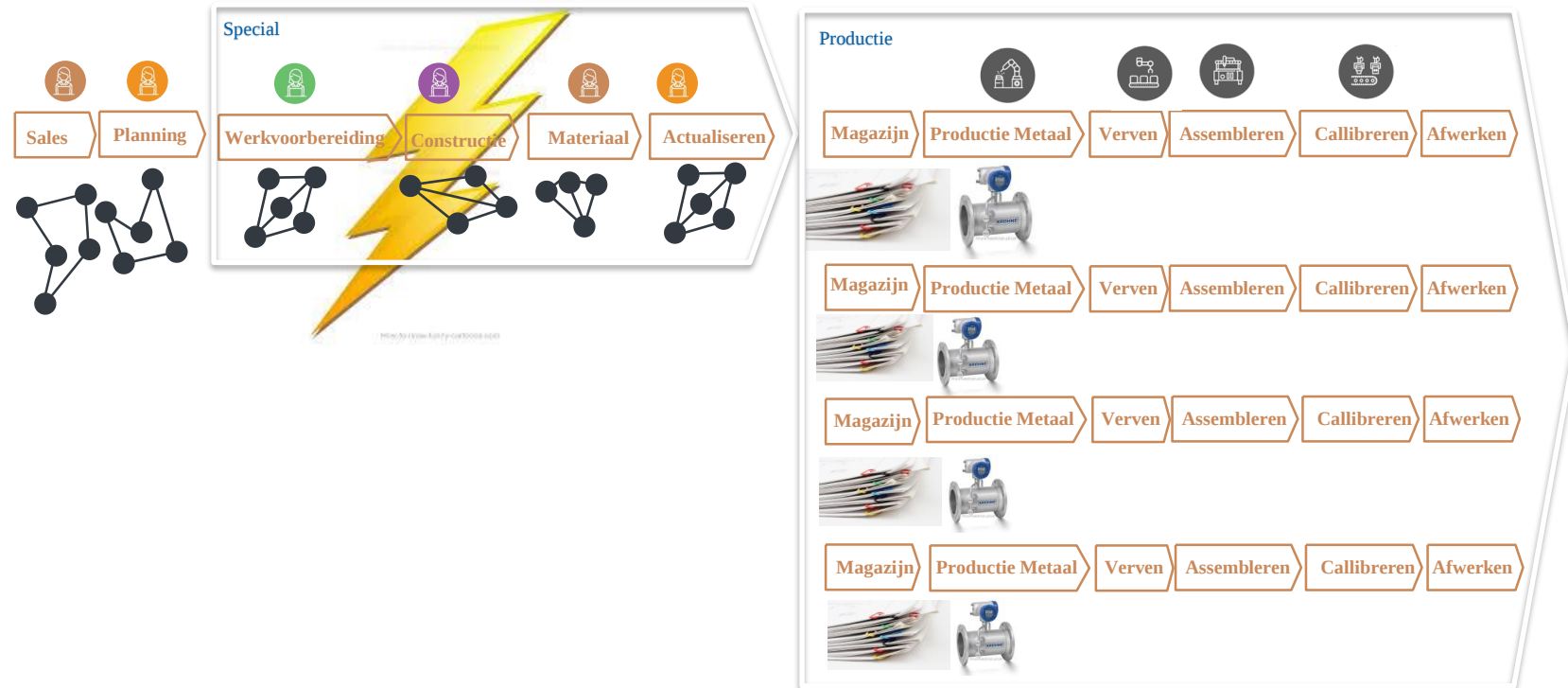


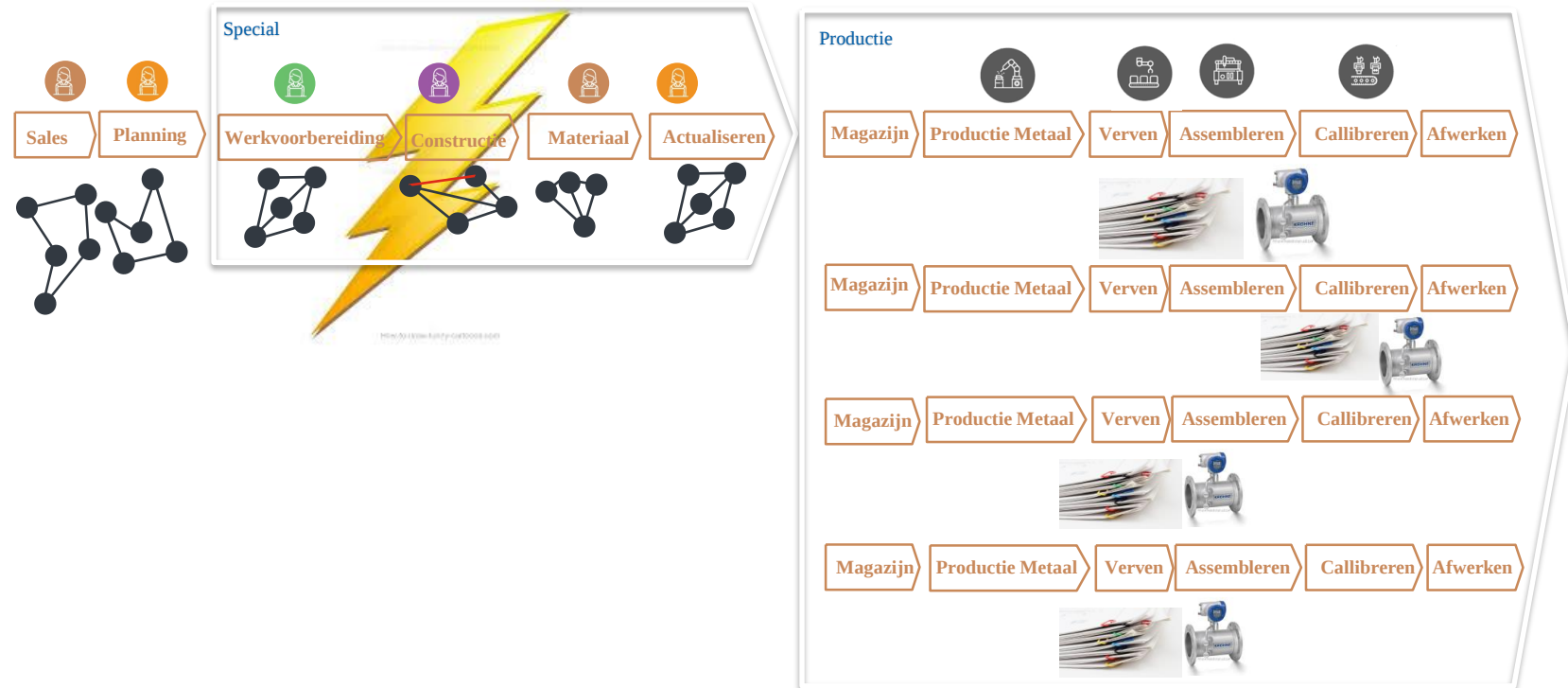


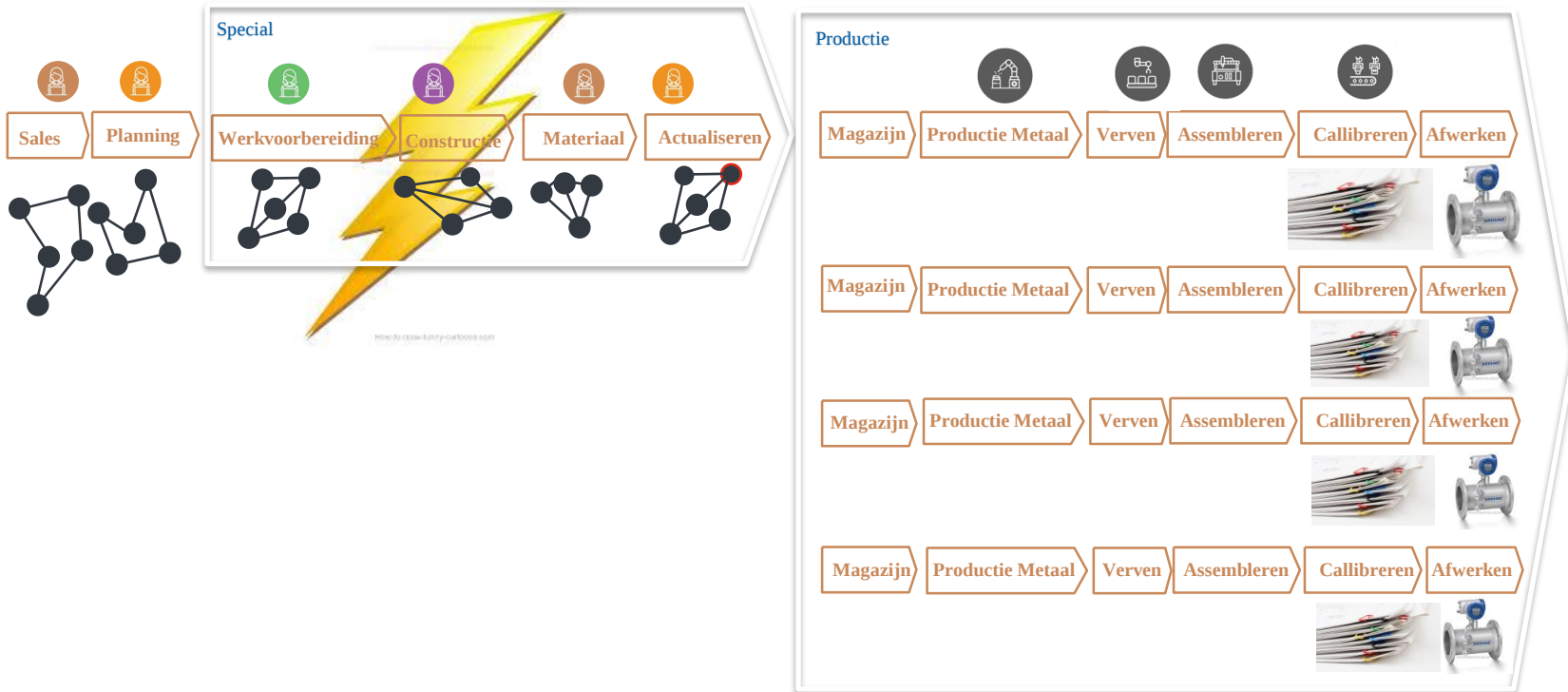


***Customer changes
300 mails per day***

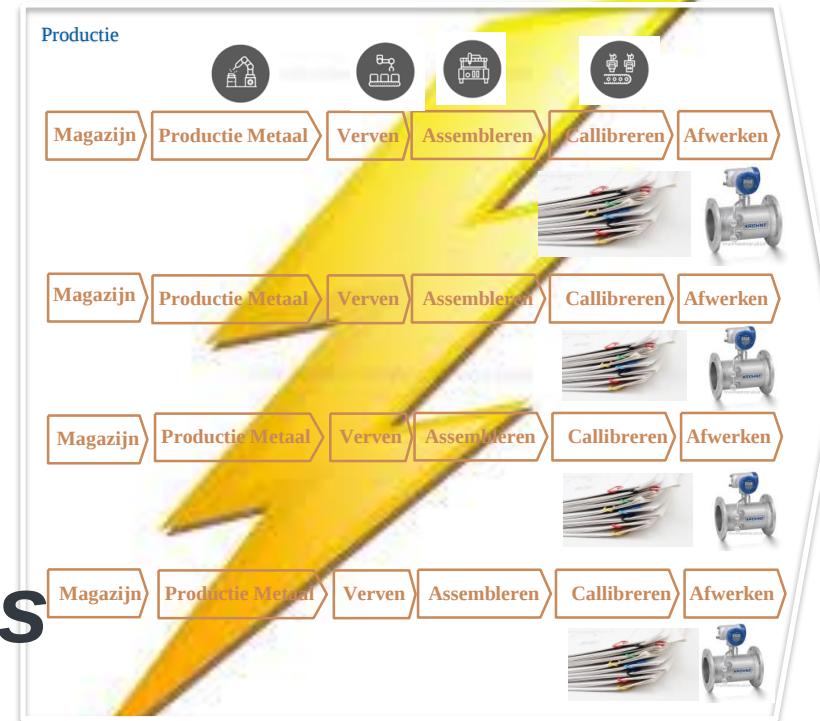


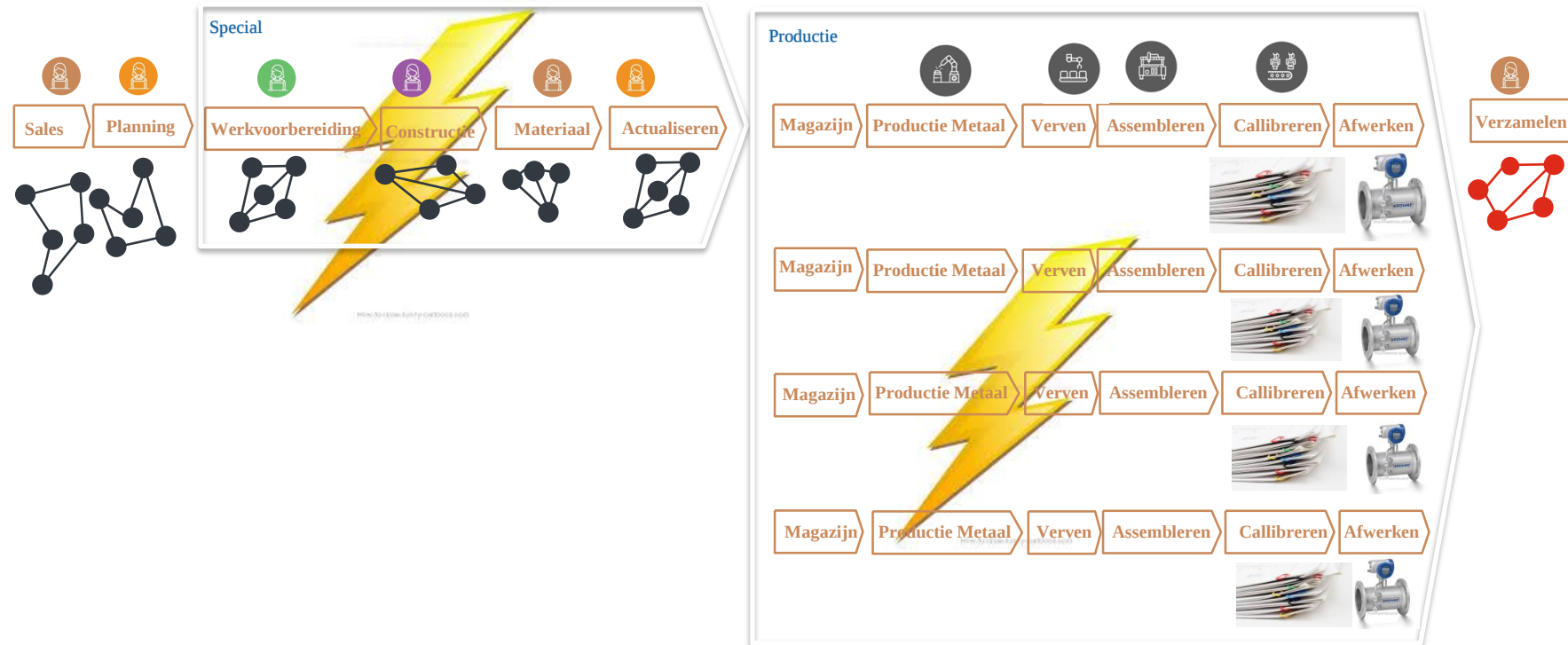


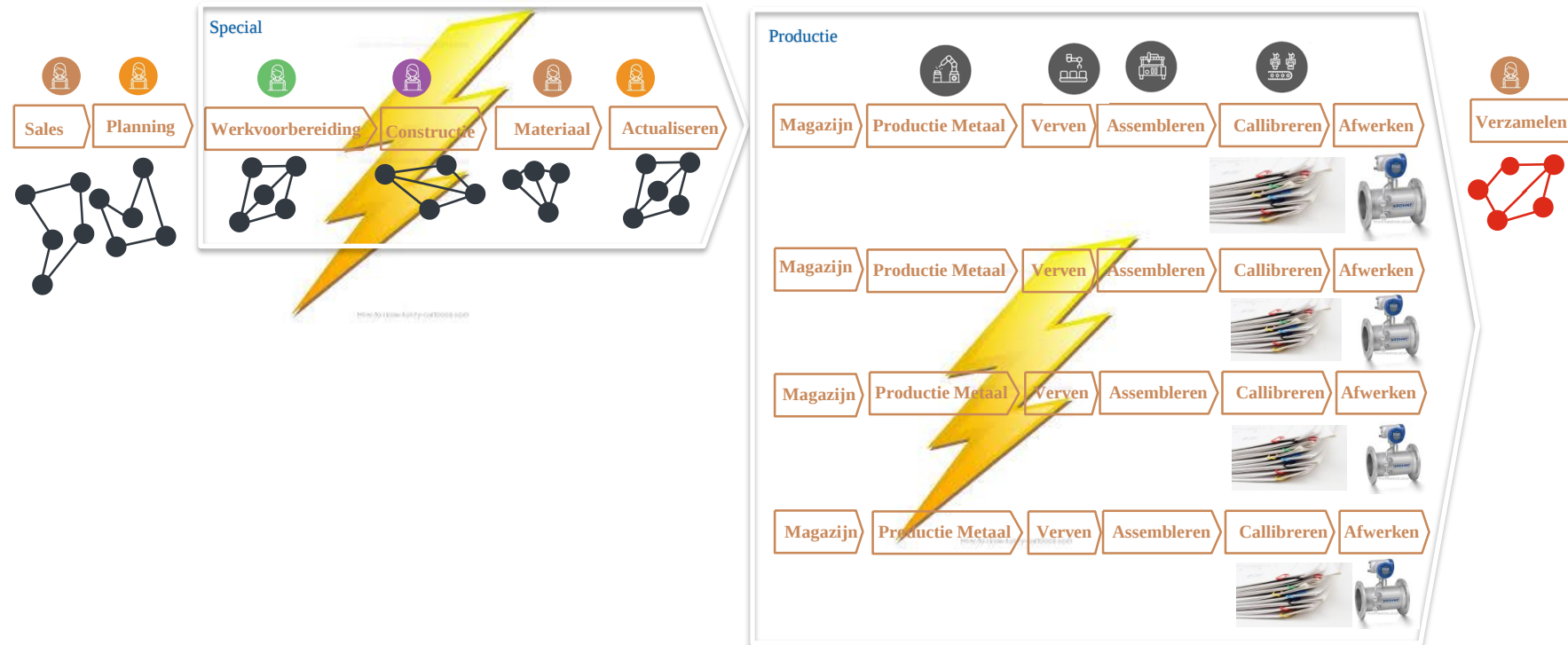


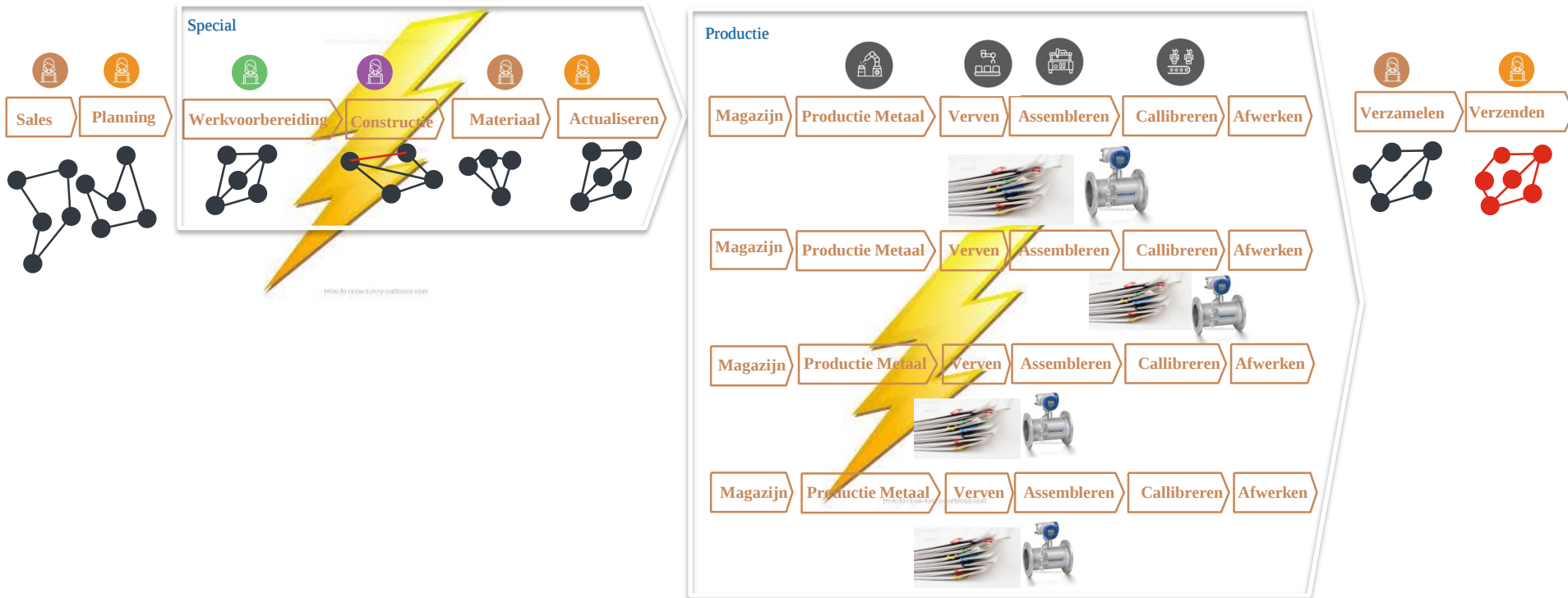


Manco
Line stops
NCR

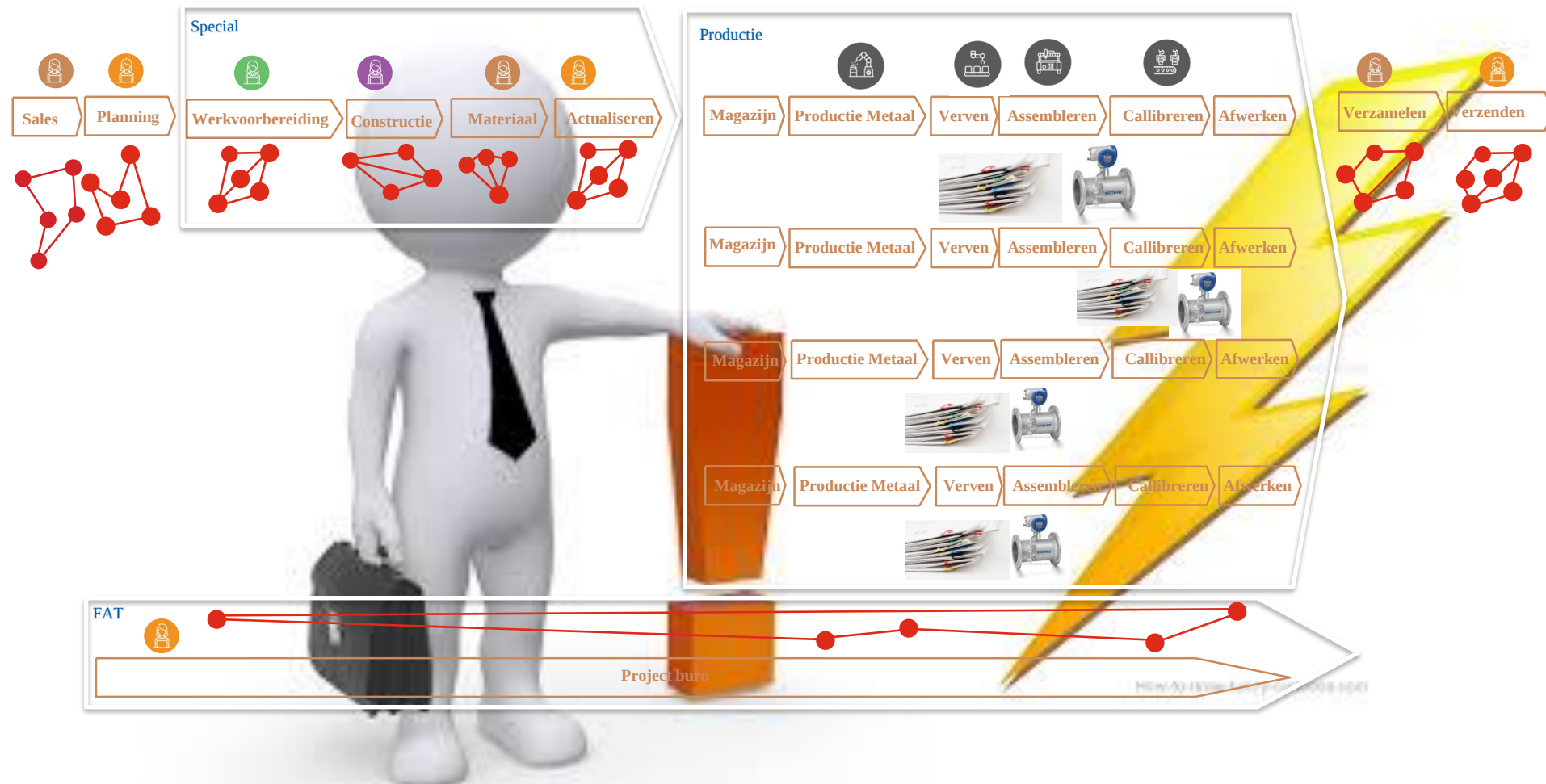




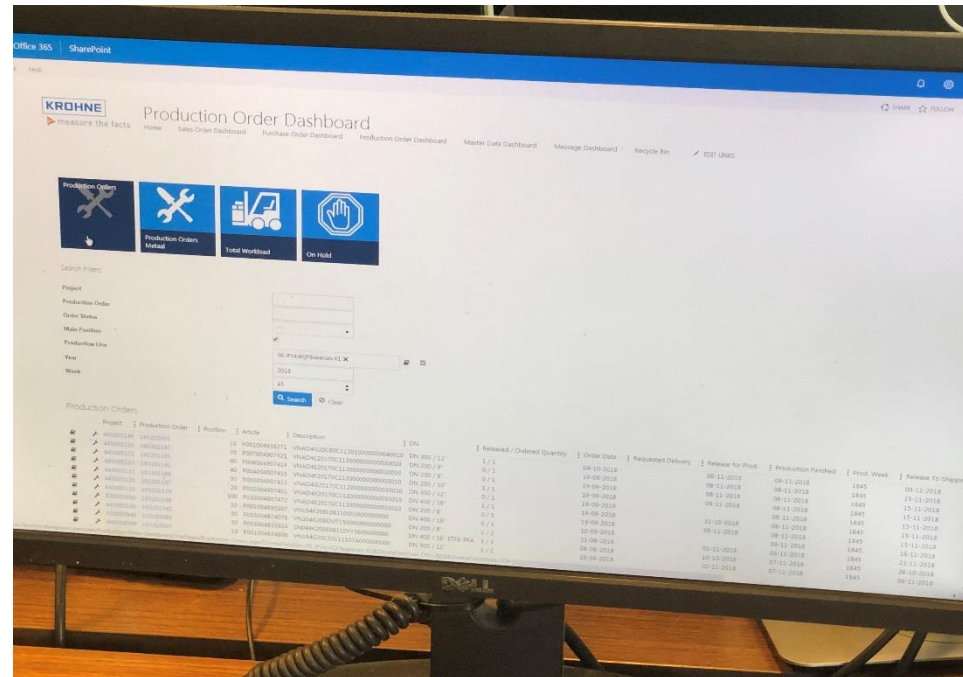
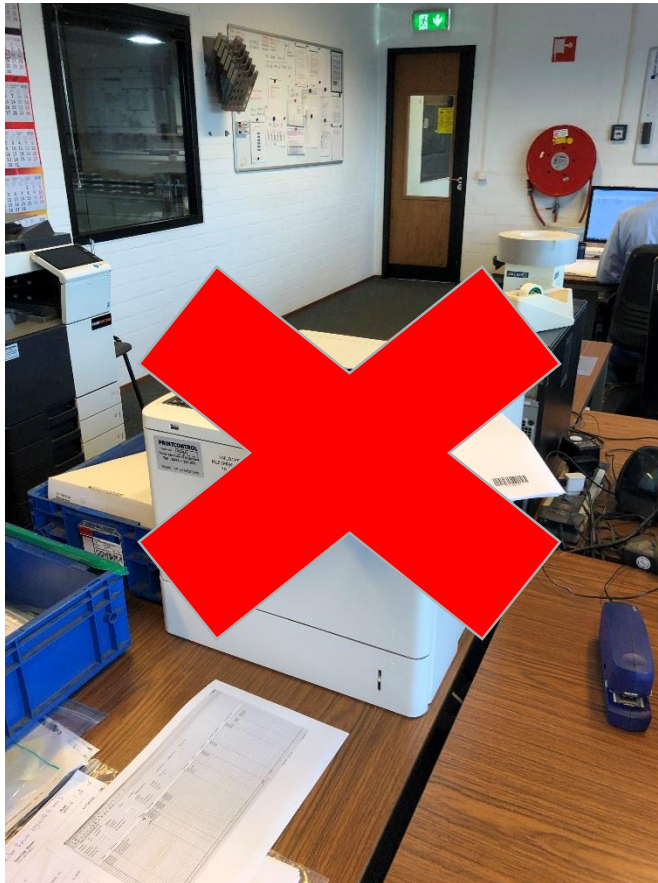




Disconnected



From paper to a digital flow

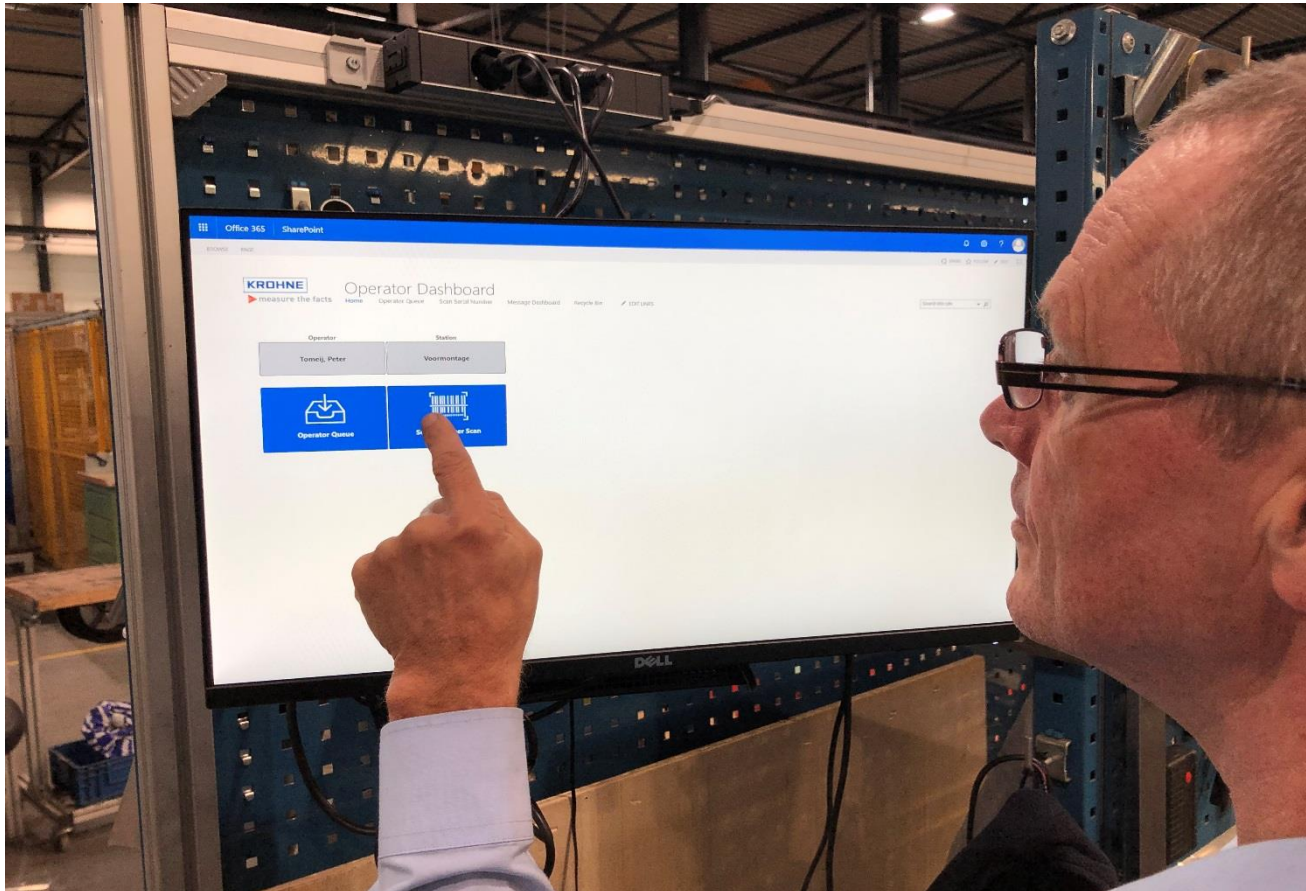


Paper flow



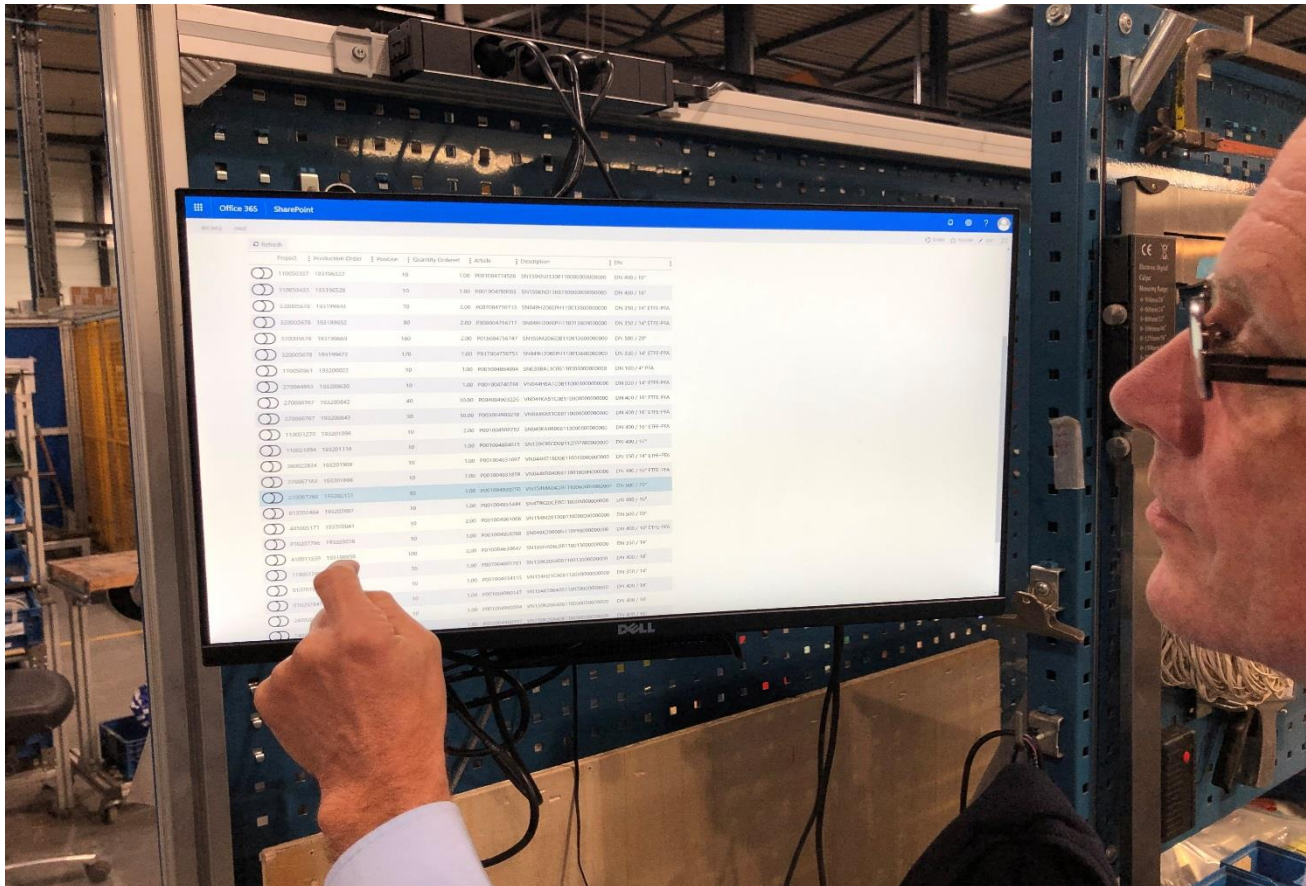
- Waiting times
- Searching for information
- Information from **yesterday**
- Disconnected

Digital flow

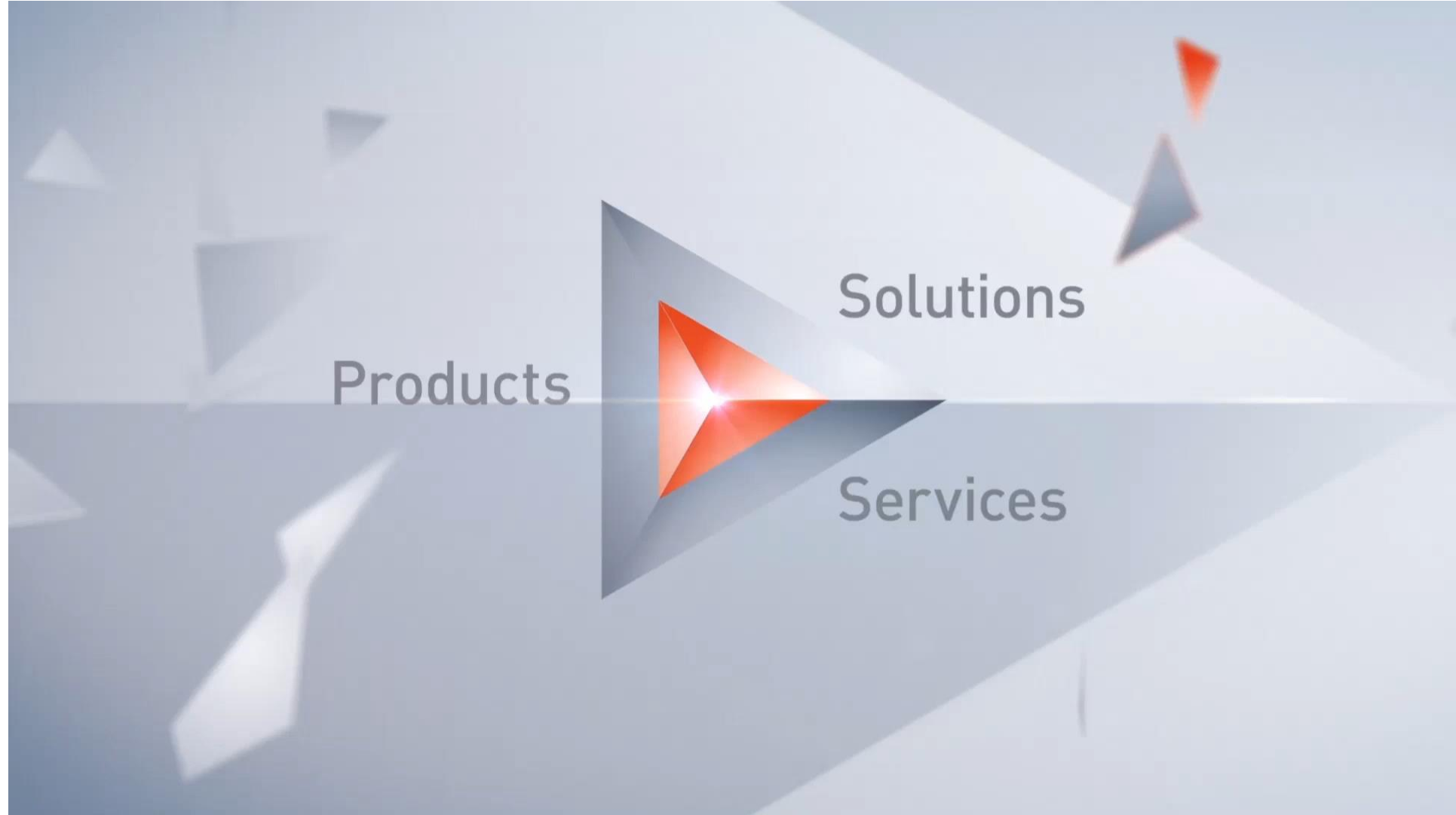


- No searching
- No waiting times

Digital flow



- Information from today
- No paper

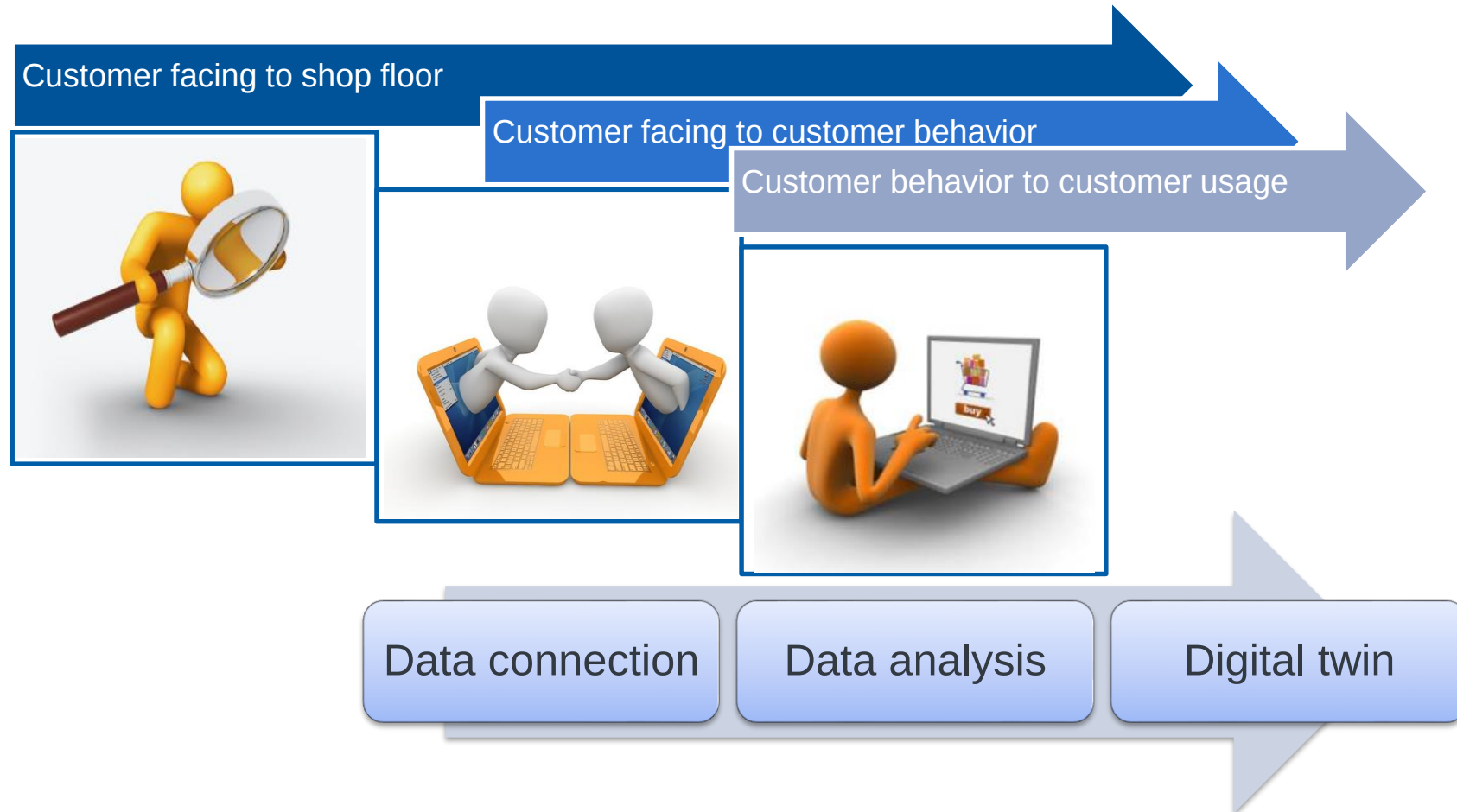


Current status

- All Screens for portals are ready ☒
- End-to-End is running ☒
- Start going Live end of September for Department 1 ☒
- Start going Live end of Oktober for Department 2 ☐ Ongoing
- Fine tuning solution
- Start going Live end of November Department 3
- December freeze solution as Version 1.0



The next phases



Customer personalisation is equal to mass customisation

The key elements of change

Readiness to change: Do you have the resources and knowledge to make a lasting change successfully?

Barriers to change: Is there anything preventing you from changing?

Expect relapse: What might trigger a return to a former behavior



“Hire great people and give them freedom to be awesome.”

– Andrew Mason, Founder, Groupon



KROHNE WE CARE