

07 September 2018

## Integrated Engineering af en cementfabrik, den udfordrende vej fra vision til virkelighed

*Hvordan arbejder en stor virksomhed som FLSmidth med standardisering, organisatoriske ændringer og moderne IT/OT værktøjer som midler til deres digitale transformation. Oplev hvordan elektrisk design og automation arbejder tæt sammen, og hør hvilke yderligere visioner virksomheden har omkring Integrated Engineering.*



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# FLSmidth at a glance

Who we are  
and what we do

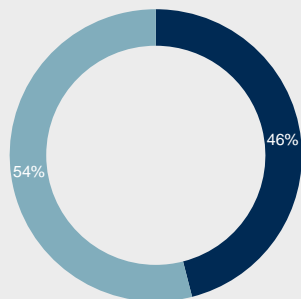


Danish Company  
founded in  
**1882**



We are more than  
**11,700**  
employees  
(end of 2017)

## REVENUE SPLIT BY BUSINESS



■ Cement business ■ Minerals business

Revenue  
2017 (DKK<sub>m</sub>) **18,000**

EBITA  
2017 (DKK<sub>m</sub>) **1,515**



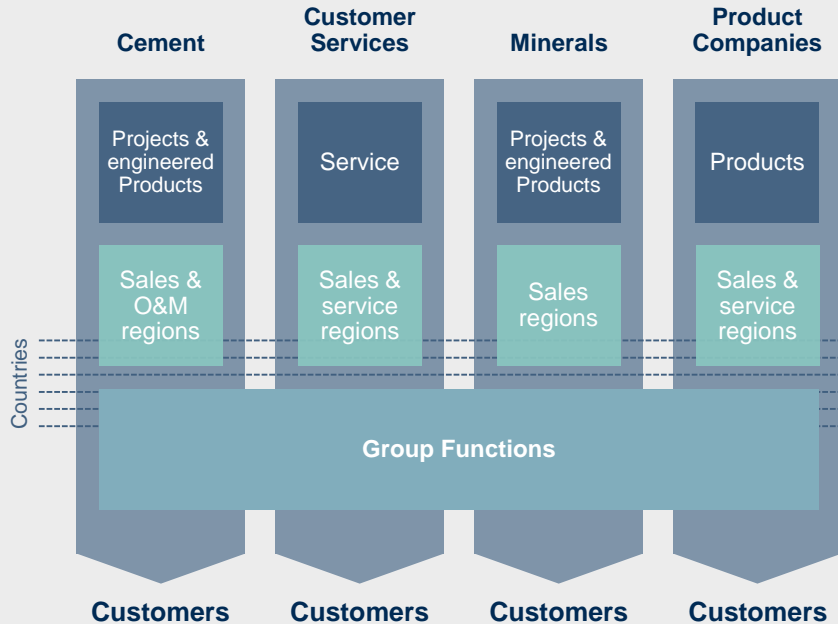
We are present in  
**50**  
Countries  
(end of 2017)

# Organisatoriske ændringer

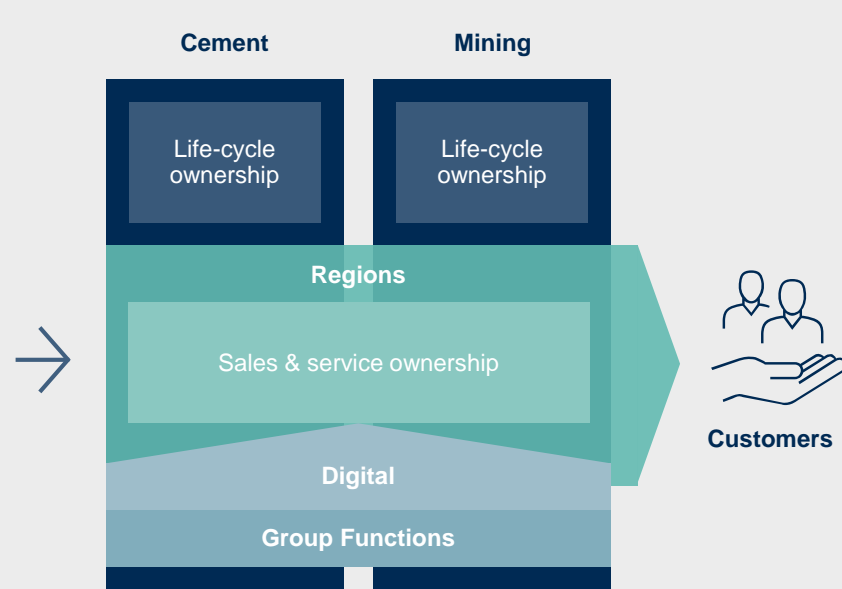
## Digitalisation and transformation

# Productivity at work: Two Industries, seven Regions, one digital approach

## BEFORE



## AFTER

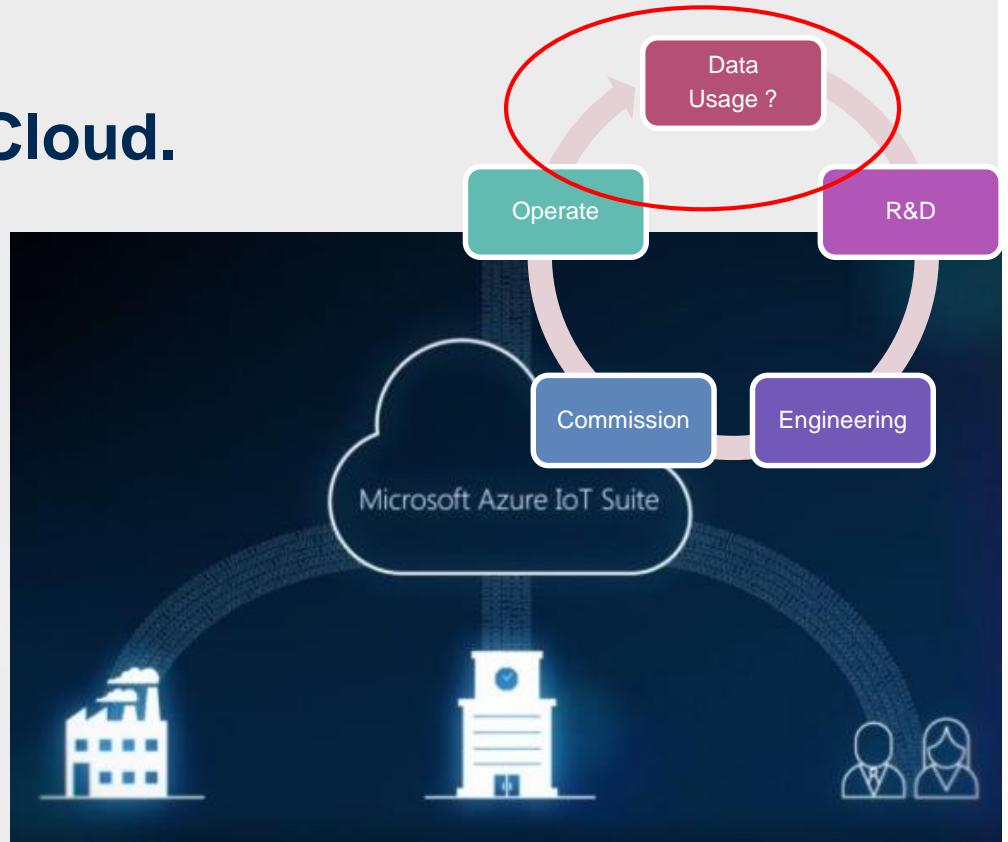


# Digitalization - Before reorganization

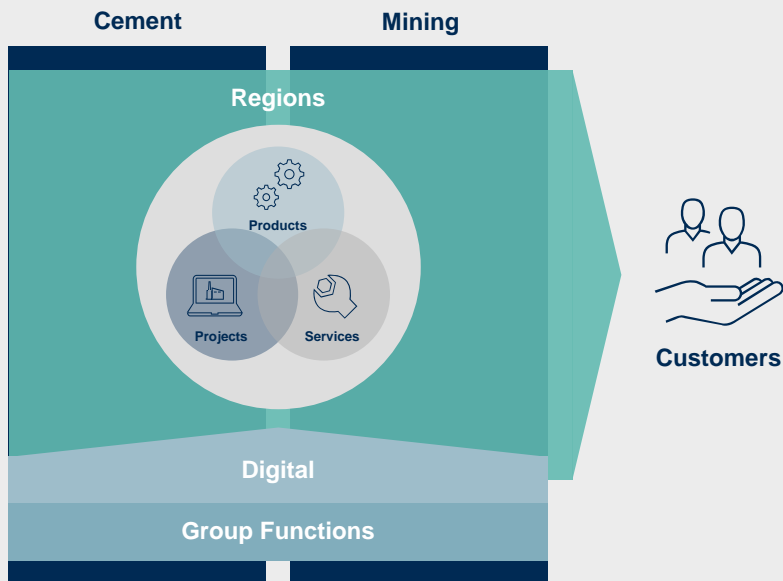
- Wish from management and product owner  
Limited focus and progress
- Lot of grass root  
Limited coordination and value creation
- Regional arranged voluntary townhalls to create awareness.  
In Valby, Copenhagen - "Snack Learning":
  - **#1: The dark and bright sides of "Digiland"**  
Nikolaj Sonne
  - **#2: Internet of Things**  
Kim Escherich, IBM
  - **#3: Living with Robots**  
Henrik Scharfe, PhD in information Science



# FLS Field Agent & FLS Cloud.



# Delivering life-cycle offerings through Industries and Regions



## Productivity Provider #1

- Develops and drives life-cycle offerings through **Industries**
- Strong collaboration with customers - sales and service through **Regions**
- Enhance customers business opportunities through **digital solutions**

# Standardising



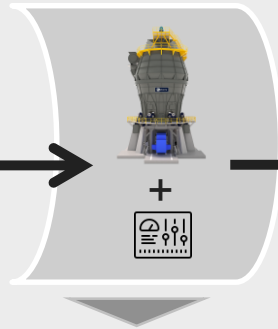
# Towards a Digital Ecosystem But how?

## 1. Product



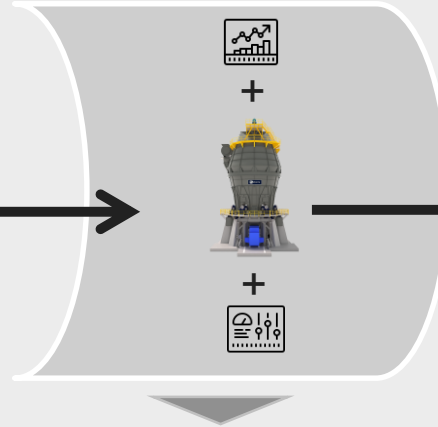
- Traditional mechanical stand alone product

## 2. Smart Product



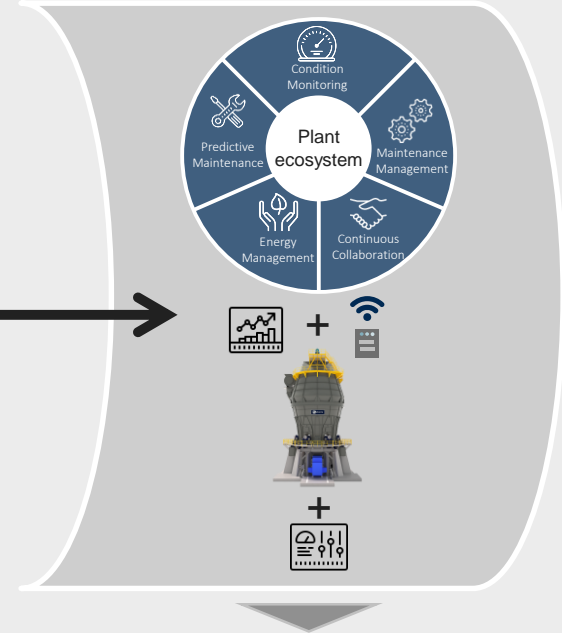
- Mechanical product
- Integrated product control

## 3. Smart, Optimizing Product



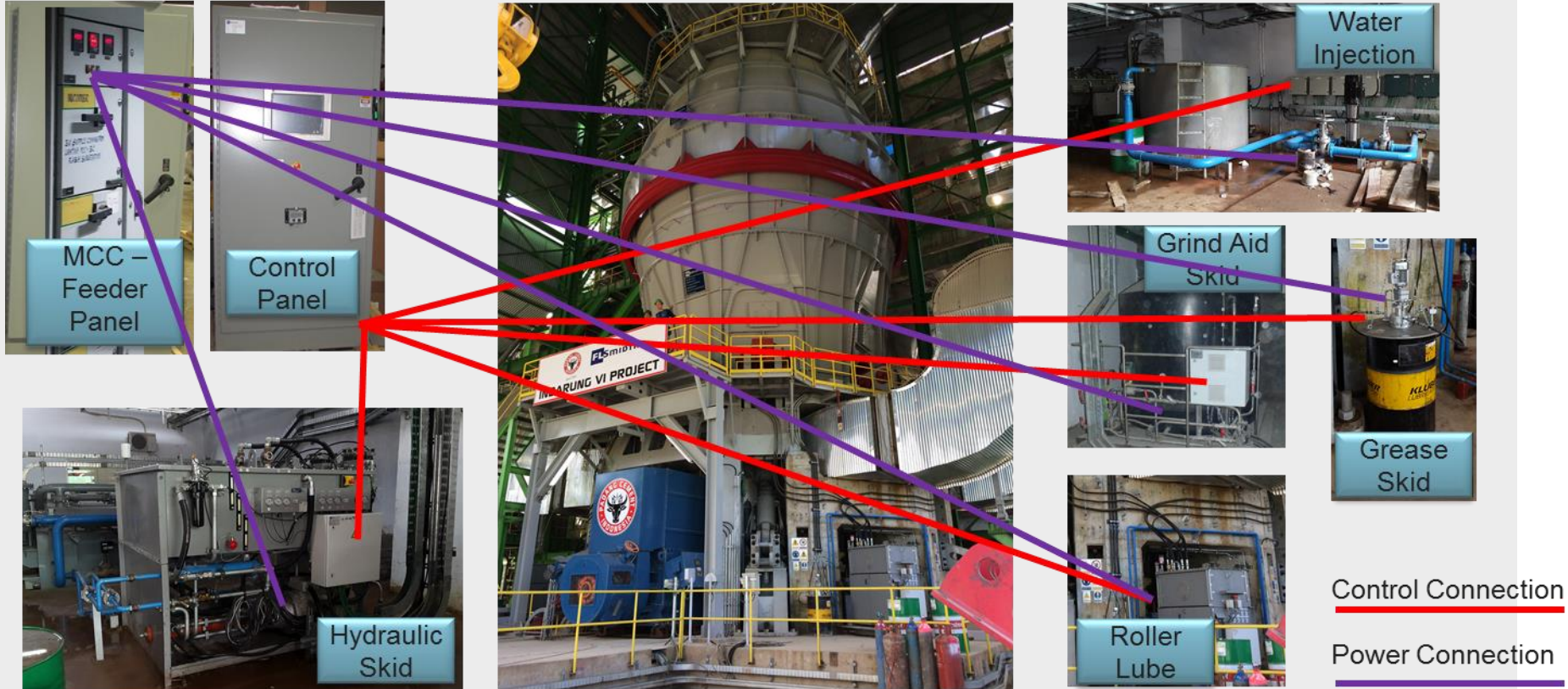
- **Standard** mechanical product
- **Standard** integrated product control
- Expert systems for process and quality optimization

## 4. Product Ecosystem



- Standard mechanical product
- Standard integrated product control
- Expert systems for process and quality optimization
- **Cloud connectivity**
- **Ecosystem with productivity apps**

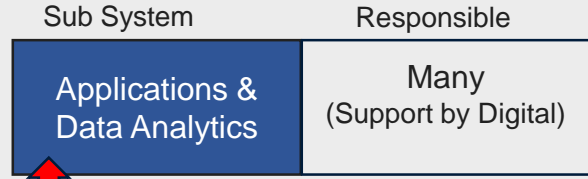
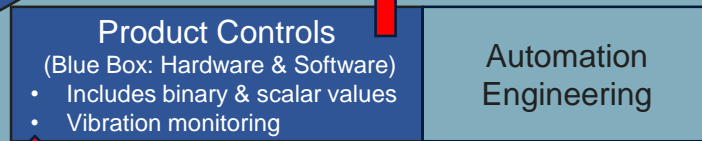
# From Projects to Products – Requires standardization



# Moving towards – Integrated FLS Products

People of skillset needed, are now organized in one department, separated from daily project execution

Full Version control



Optimized procurement

FLS PRODUCT

Overall owner of the Product : **PLM**



Full standardization - with known options.

Enables:

Configure to order:

- Reduced cost
- Predictable lead times
- Improved supply chain management

Enabling Configurators, for:

- Simple Offers creation
- Immediate price and lead times generation

Better analytic:

- Improved benchmarking between sites
- Improved product performance evaluation
- Product innovation – Next version  
Based on data analysis

# IT/OT værktøjer

# FLSmidth Project Engineering Electrical and Automation

## Standards

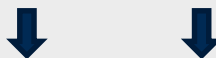
- Standard Designs
- ACESYS Function Blocks
- Predefined Templates
- Proven & documented



FLSmidth Experts



Project Team  
Electrical & Automation



Test / Com. Team

## Project Input

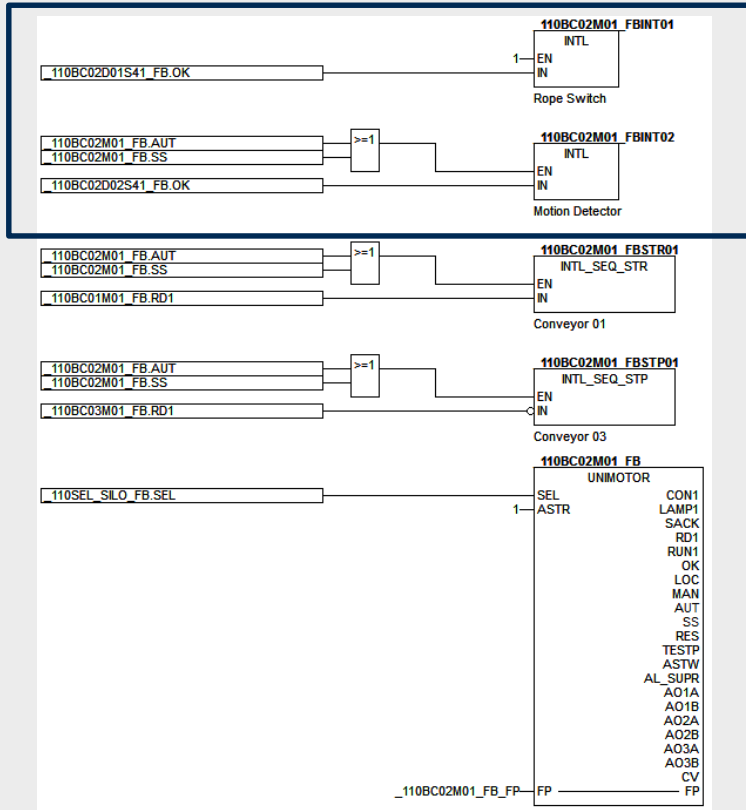
- Motor Lists
- Instrument Lists
- Interlock Diagrams
- Engineering



## Finished Project

- PLC Programs (Acesys)
- HMI Database (ECS)
- Electrical Drawings
- Documentation
- Automatically generated!

# Example program of a unit in Metis



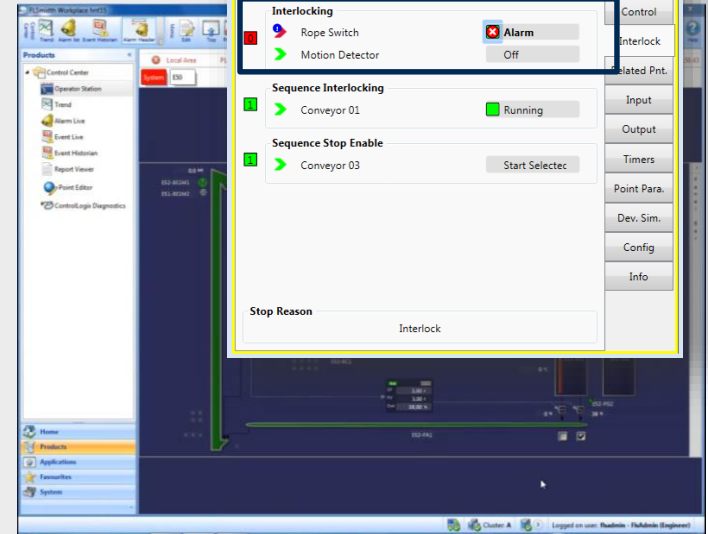
Input Logic for interlock

Tags and Mimics



Output:

PLC project  
Multiple brands supported



# Demo





# Thank you



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