Evonik’s vision of integrated process simulation in the near future

How could CAPE-OPEN come into play?

Gregor Tolksdorf | CAPE-OPEN Annual Meeting 2019

EVONIK
POWER TO CREATE

Agenda

1. Short Introduction to Evonik

2. Evonik’s vision of integrated process simulation

Evonik

The creative power of specialty chemicals

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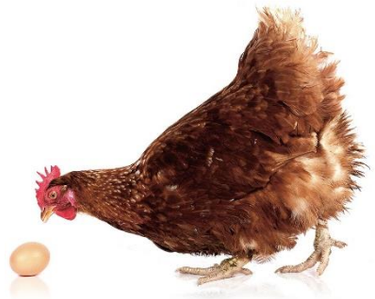
What we don't do

CAR TIRES

TOWELS

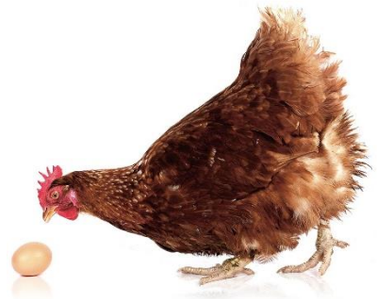
MATTRESSES



NUTRITION

TABLETS

What we do
Living better with Evonik

more fuel saving	fluffier	more elastic	healthier	more effective
				
CAR TIRES	**TOWELS**	**MATTRESSES**	**NUTRITION**	**TABLETS**

Countless products gain their special attributes through our creative power.

Who we are
Evonik at a glance

13,3
Billion Euro sales in 2018

>80%
Of turnover gained from leading market positions

104
Employees from 104 different nations work for Evonik

>32,000
Employees in over 100 countries

2.15 billion Euro
Adjusted EBITDA 2018

~240
New patent applications

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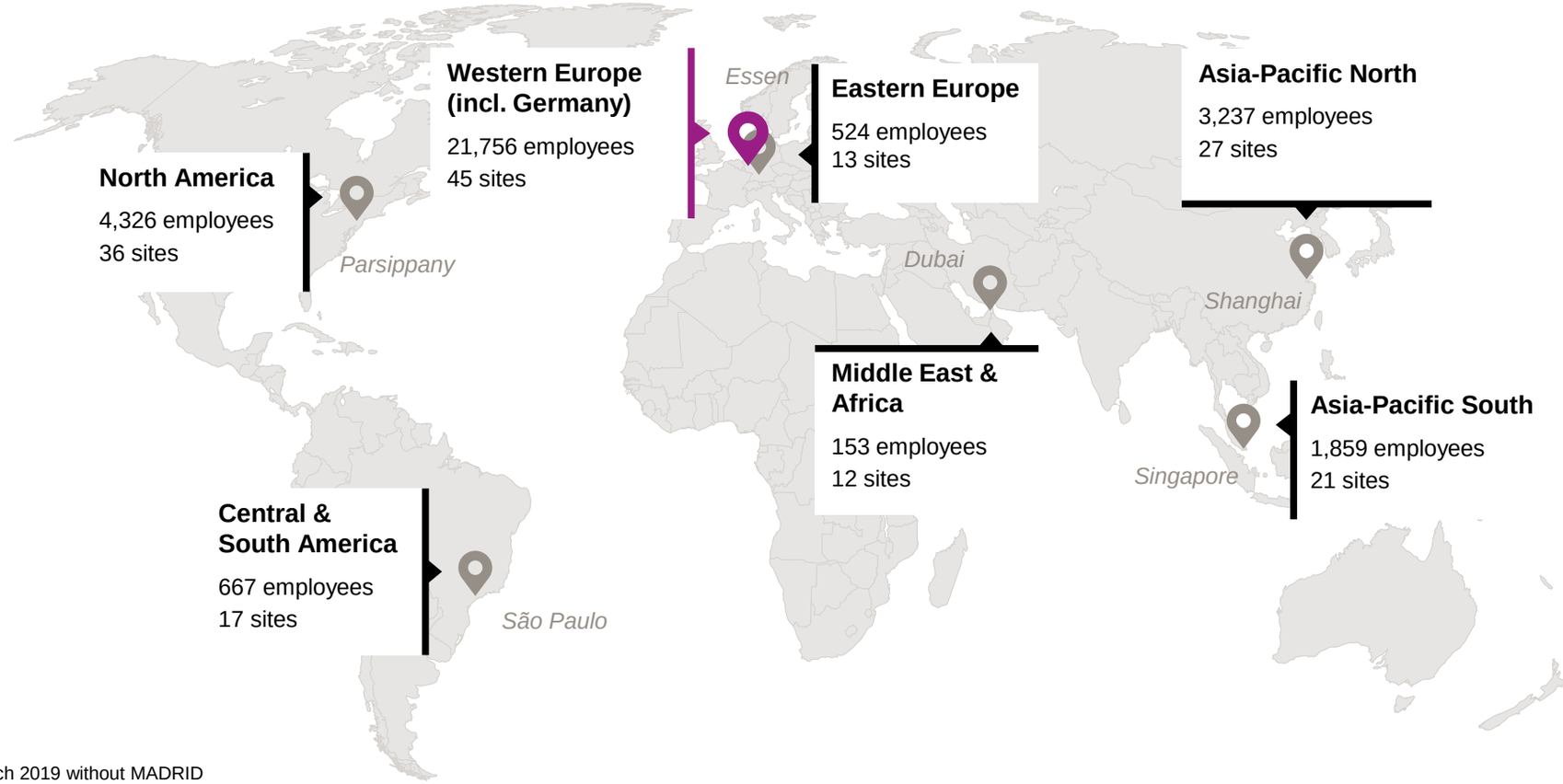
Where we can be found
Evonik operates worldwide



Status Employees as of March 2019 without MADRID

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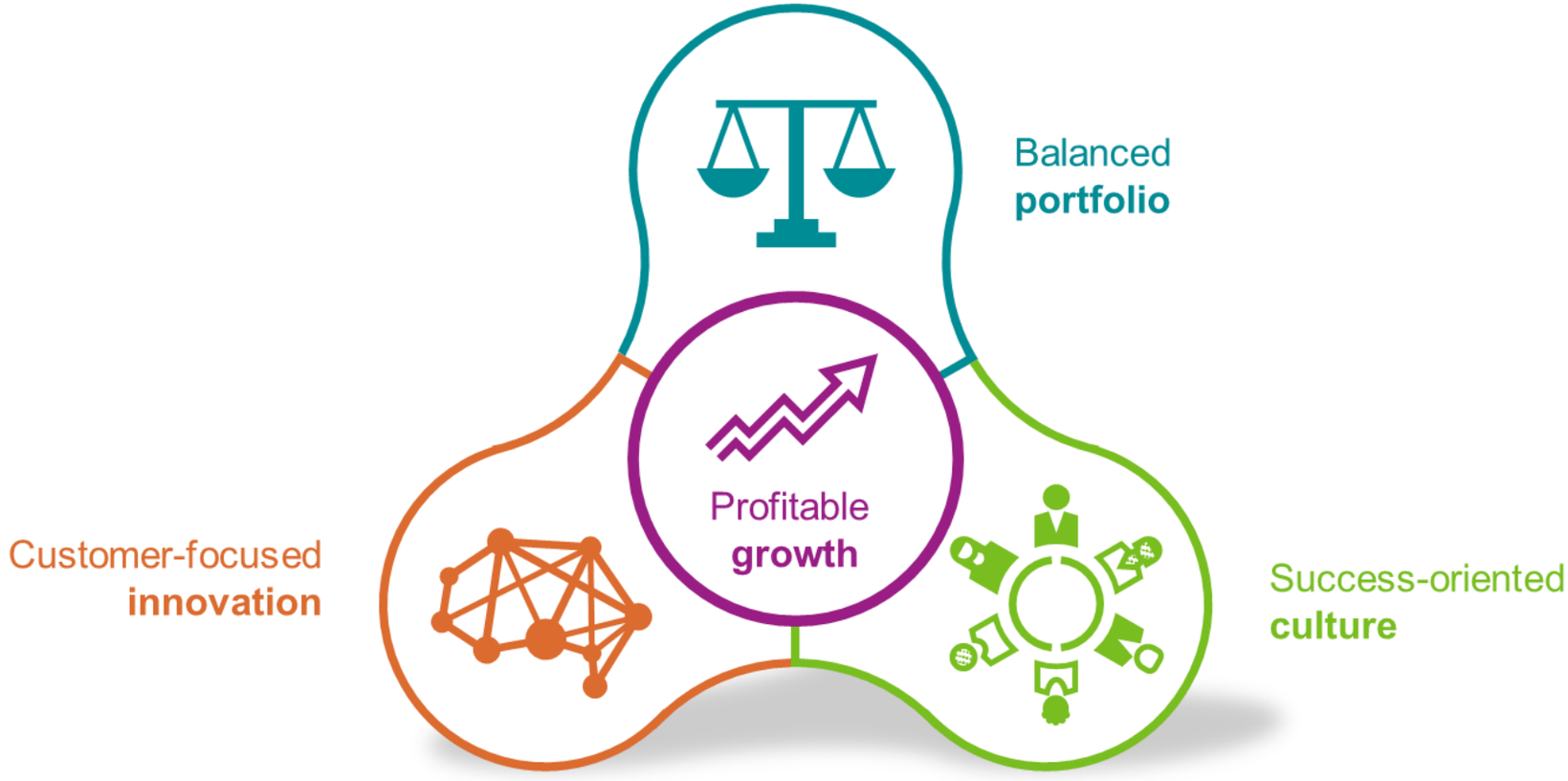
Our aspiration

Building a best-in-class specialty chemicals company

Our strategy
Growth and balance



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Our structure
Strategic concentration and operative independence

Strategic Management Holding

Segments

Nutrition & Care

Products for use in the areas consumer goods, nutrition and health

Resource Efficiency

Environmentally friendly and energy-efficient systems as solutions for several industries

Performance Materials

Polymer materials and intermediates mainly for the rubber, plastics and agriculture industries

Technology & Infrastructure

Site operation, energy & utilities, technical services, logistics, process technology and engineering

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What we do
Living better with Evonik

Nothing is perfect. There is always room for improvement.

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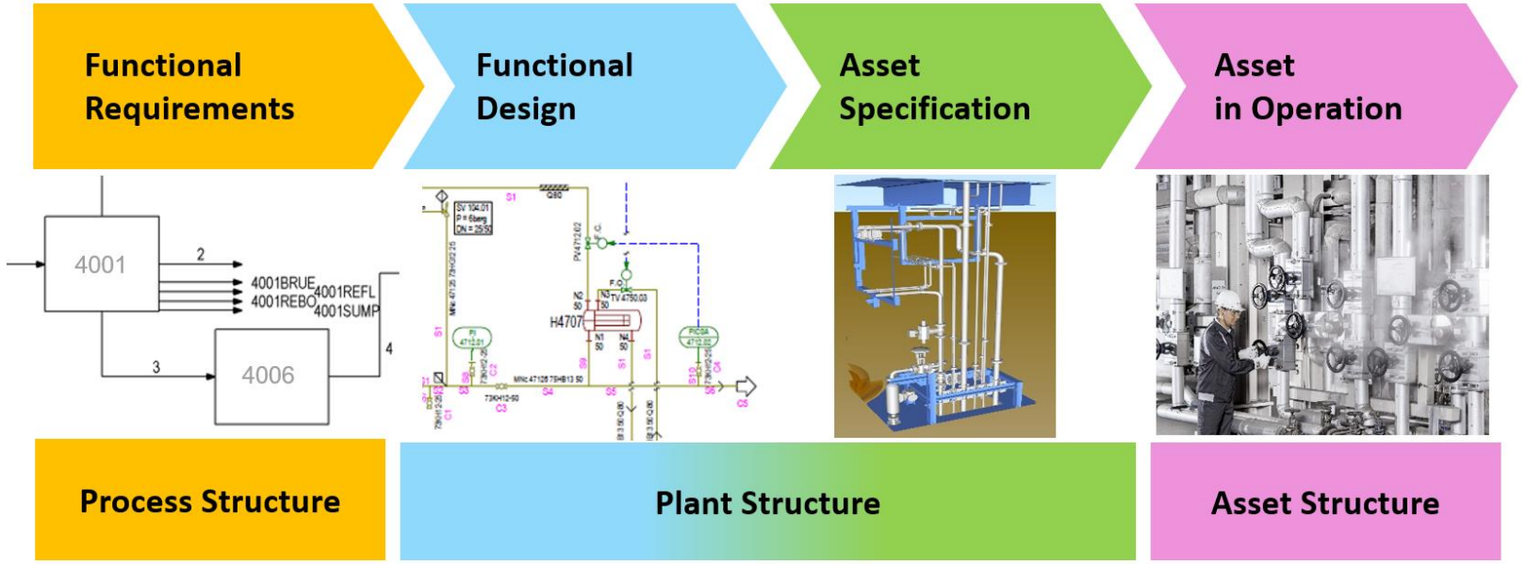
Evonik’s vision of integrated process simulation in the near future

Integration of Asset Lifecycle (ALC) and Process Simulation

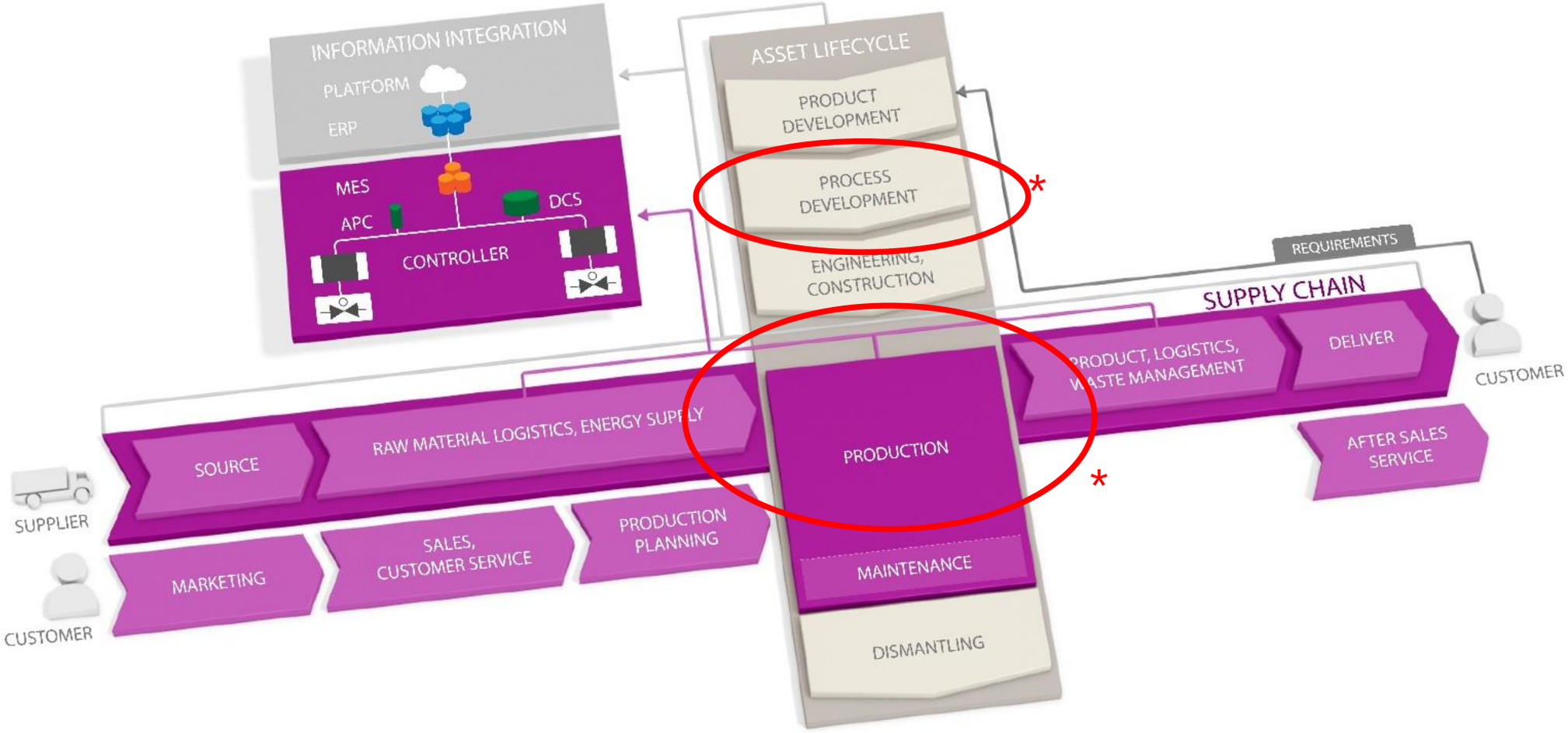
Asset Lifecycle:



Process simulation is main basis of the “Functional Requirements”.

Process simulation is one basis of the DigitalTwin during Operation.

Connection of Asset Lifecycle (ALC) and SupplyChain (SC)



*Process simulation explicitly involved during the lifecycle

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CAPE-OPEN @ Evonik

CAPE-OPEN is not used inside Evonik (so far)*

*It was evaluated many years ago, but the performance (presumably regarding the implementation of Thermo 1.0) was not satisfying

Process Simulation – Evonik's Key Topics

- Integration into "Digital Twin"
  - ➢ Asset Lifecycle (ALC) harmonized with international standards, e.g. DEXPI, CFIHOS
  - ➢ Tool integration, interfaces, online simulation/optimization

- Separation: "Thermo" vs. "Simulator"
  - ➢ Simulation for "as-built", "planned", "operator training", "polymerization", "downstream"…
    ⟶ we use different simulator tools
  - ➢ Thermo: should be the same for all, 'manual' integration/transfer so far not satisfactory

Discussion: How could CAPE-OPEN come into play?

- How about connections to other standardization communities?
- Are “thermo performance” issues solved?
- How about integration of Machine Learning (e.g. regarding thermo)?


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