



**SIEMENS**

# Digital engineering for Process Industry

Slut cirkeln med ett levande system, från integrerad konstruktion till integrerad drift



- Trends in the Process Industry
- Challenges & Business Requirements
- Answers with your business potentials
- Summary

# Trends in Process Industry

## Business drivers

### Base & petroProcess

- Availability and reliability of production
- Efficiency
- Safety

### Specialty and fine Process

- Innovation
- Variety of products

### Industry wide

- Global engineering

## Technology focus

### Base & petroProcess

- Replication/duplication of production facility and production lines
- Flexibility of using different feedstocks
- Optimization of process during production

### Specialty and fine Process

- Better management of the process complexity
- Modular and container based design
- Validation and regulation

### Industry wide

- Asset information integrity management

## Economical focus

### Base & petroProcess

- Time-in-Market
- Major CAPEX projects in middle east and far east
- CAPEX projects in US due to availability of shale gas
- CAPEX projects in Australia due to coal bed methane

### Specialty and fine Process

- Time-to-Market
- High value add

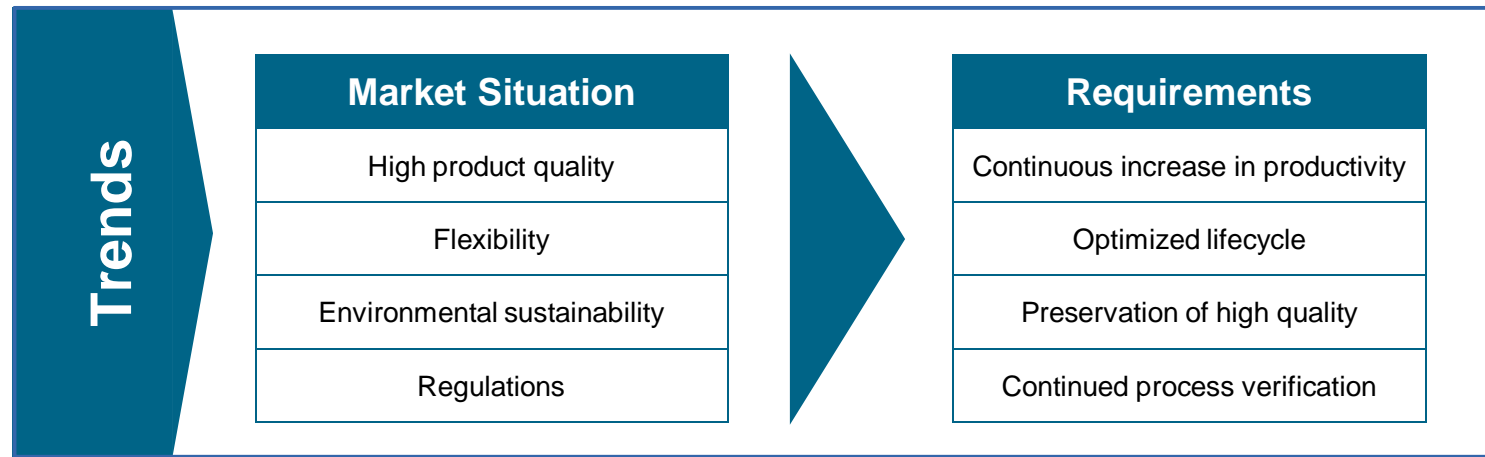
### Industry wide

- Total Cost of Ownership (TCO)



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# Business requirements



...for Design
Flexible and open process design
Reduced design time
Modular design

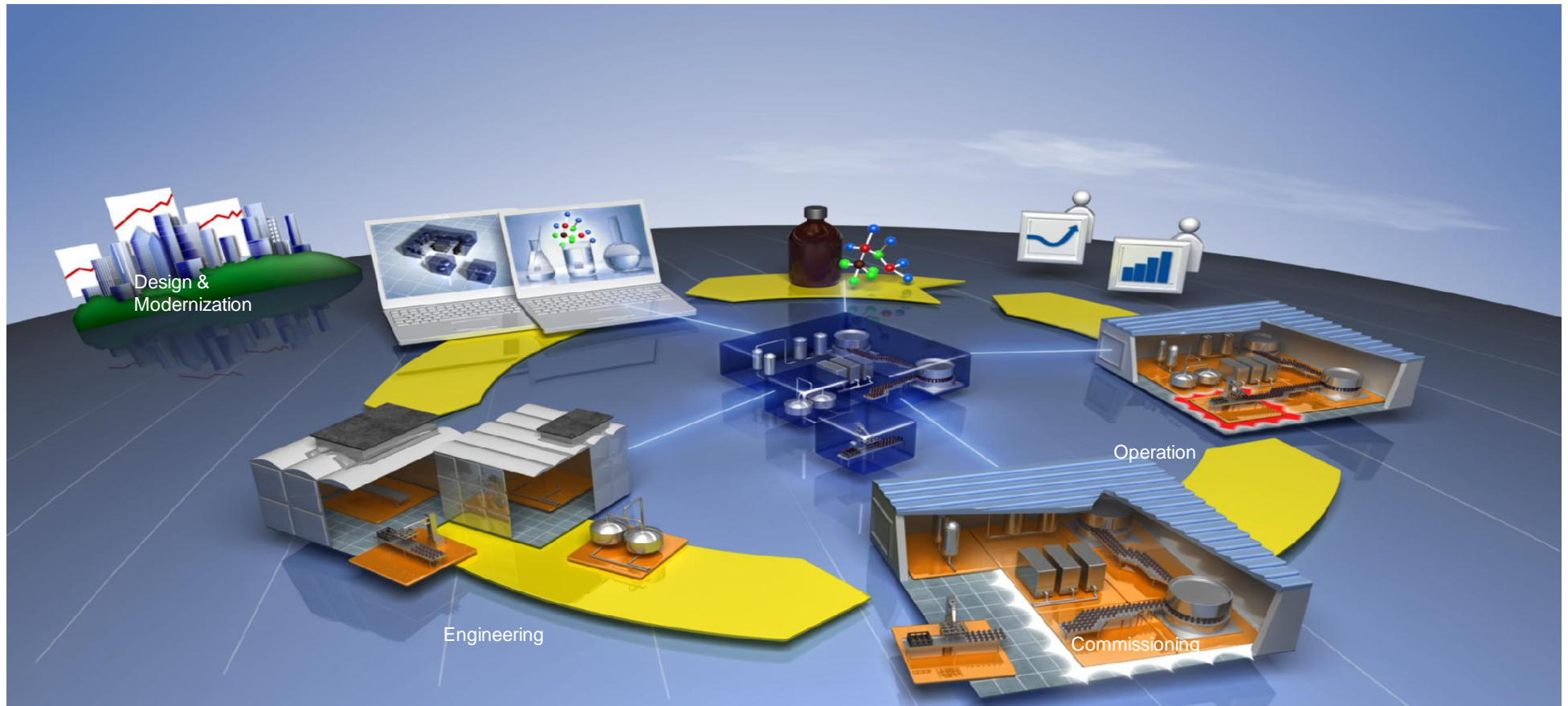
... for Engineering
Reduction of engineering times
Reusability and standardization
Management of high complexity

... for Operations
Guarantee high product quality
Improved OEE (Overall Equipment Efficiency)
Fast provision and update of As-Built documentation



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## Digital Plant lifecycle phases



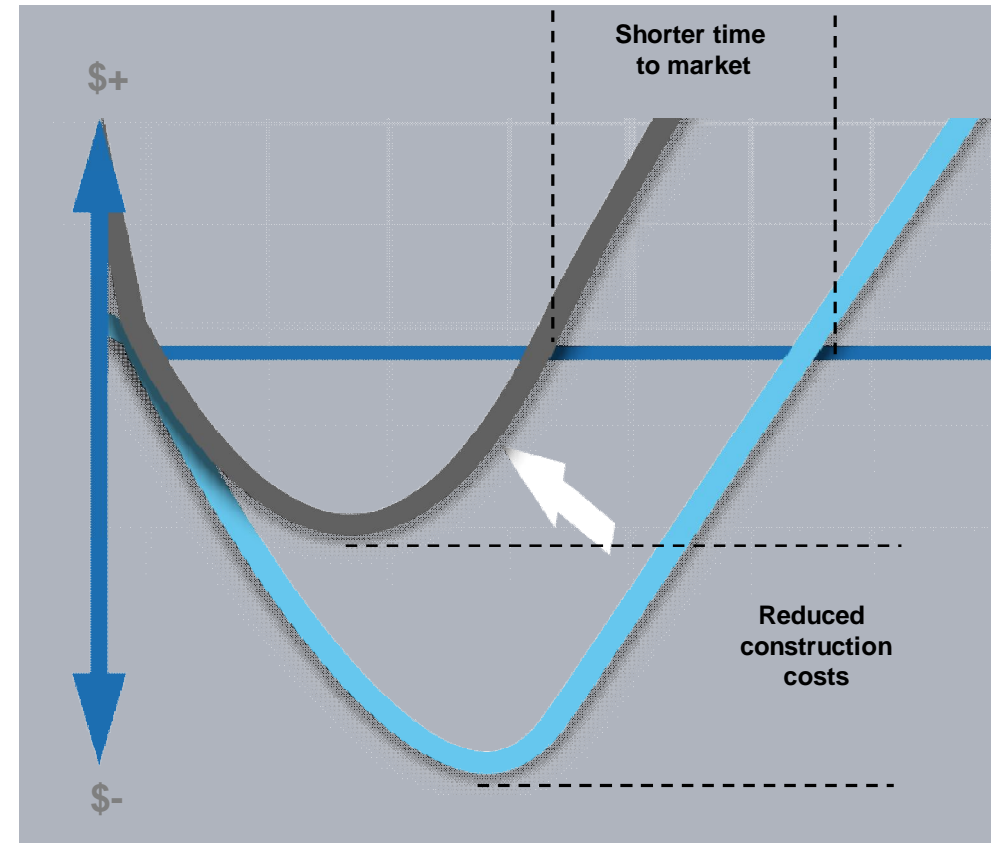
## Business potentials

### Integrated engineering:

- **Reduction of engineering costs up to 30%**
  - Due to reduction of applications, automation of engineering work, reuse and integrated qualification
- **Reduction of construction rework up to 10 %**
  - Due to data consistency

### Integrated operations:

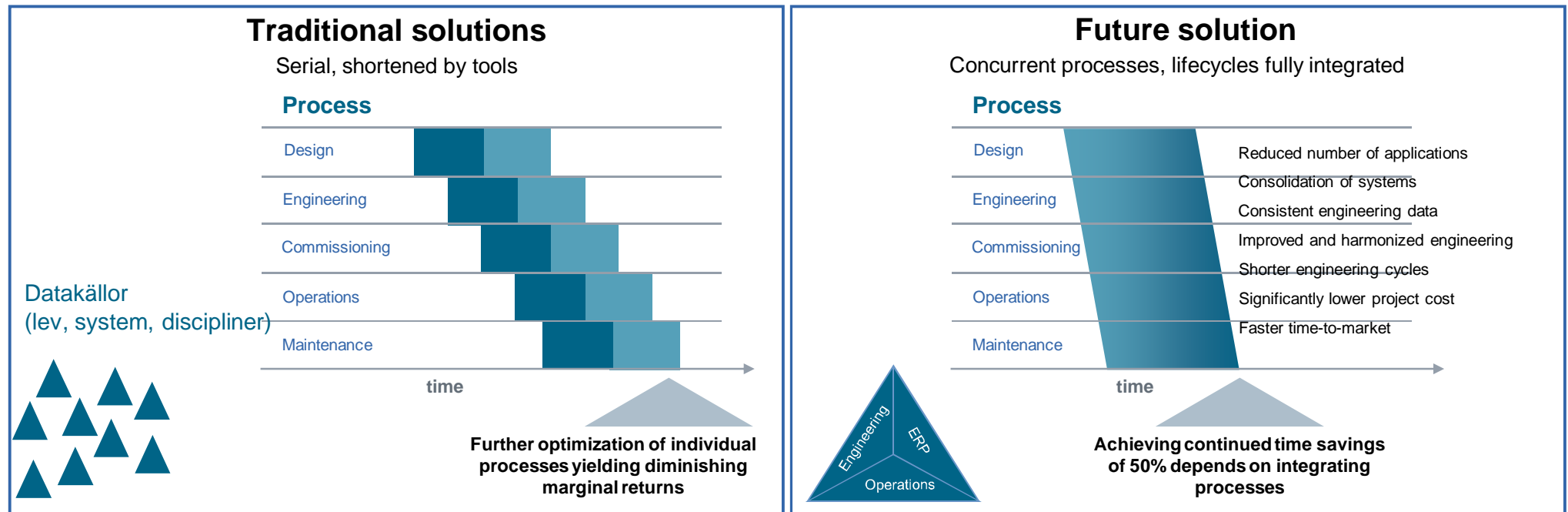
- **Reduction of operating costs up to 25%**
  - Due to data consistency
  - Due to reuse of standards
  - Due to in-sync plant documentation
  - Due to single source of information





## #4 In Digital Engineering with Integrated plant management

Only an integrated view across all lifecycle phases enables holistic plant management and reduces data complexity





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## In summary – your benefits



**Be prepared for the future!**



**Thank you very much for your attention!**

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