



LEAN FORUMS ÅRSKONFERANSE 2017, 08.11.2017,

# **Store uutnyttede muligheter på norsk sokkel – uten risiko**

Hemmeligheten til tidligere oppstart og bedre prosessoperabilitet i drift

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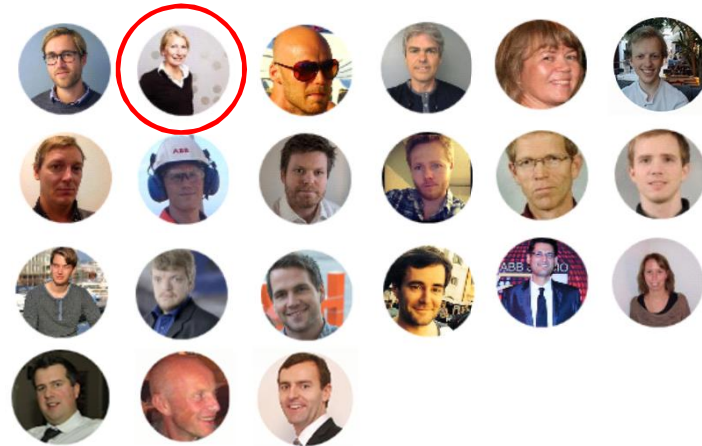


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# ABB Upstream Process Performance

## Capability

- 20 specialist engineers
- Probably the worlds largest team specialized in upstream offshore process operability



100 000 hours upstream on-site experience at 30+ different sites

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## Take – away message

**Process operability competency is missing in Upstream Oil and Gas projects**

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# What are the challenges?

Today's needs



## Reduce cost and improve profitability

**Fact:** 64% of projects today are facing overruns and 73% of projects are also reporting schedule delays



## Extend lifetime of facilities

**Fact:** Since 2008, in the North Sea alone the cost of decommissioning has risen from 18 to 85 billion USD



## Maximize uptime

**Fact:** One hour of downtime in an oil and gas facility can cost up to 1 million USD

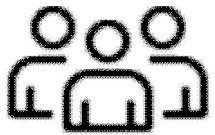


## Ensure safety

**Fact:** Over the last 40 years, the hydrocarbon industry has seen a financial loss of 34 billion USD combined from the 100 largest accidents

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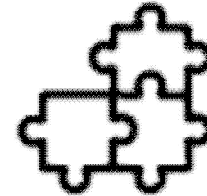
## Improvement projects in ABB



Customer focus



Document value



Small steps in the  
right direction

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# A soul without a body

# Dynamic process behavior

What does it depend on?



## Process equipment and fluids

- All equipment: Mechanical, electrical, automation, etc
- Raw and processed materials

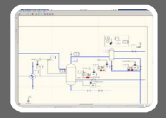


## Production conditions

- Pressures, temperatures, levels, flows, etc
- Environment; air temp, wind, sun, etc

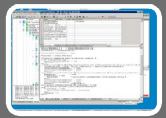


## Operator actions



## Control structure

- SAS library configuration into applications
- Sequences, logic



## Control structure parameters

- PID controller tuning
- Sequence timings, etc

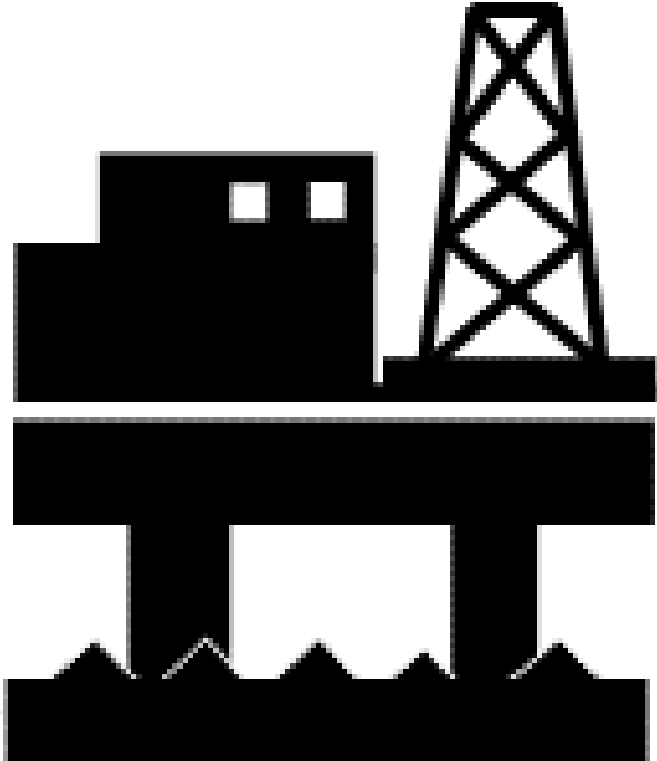


## Key characteristics of dynamic process behavior

- Kernel of plant operability, regularity and profit
- Cross discipline/system/package
- No dedicated owner?

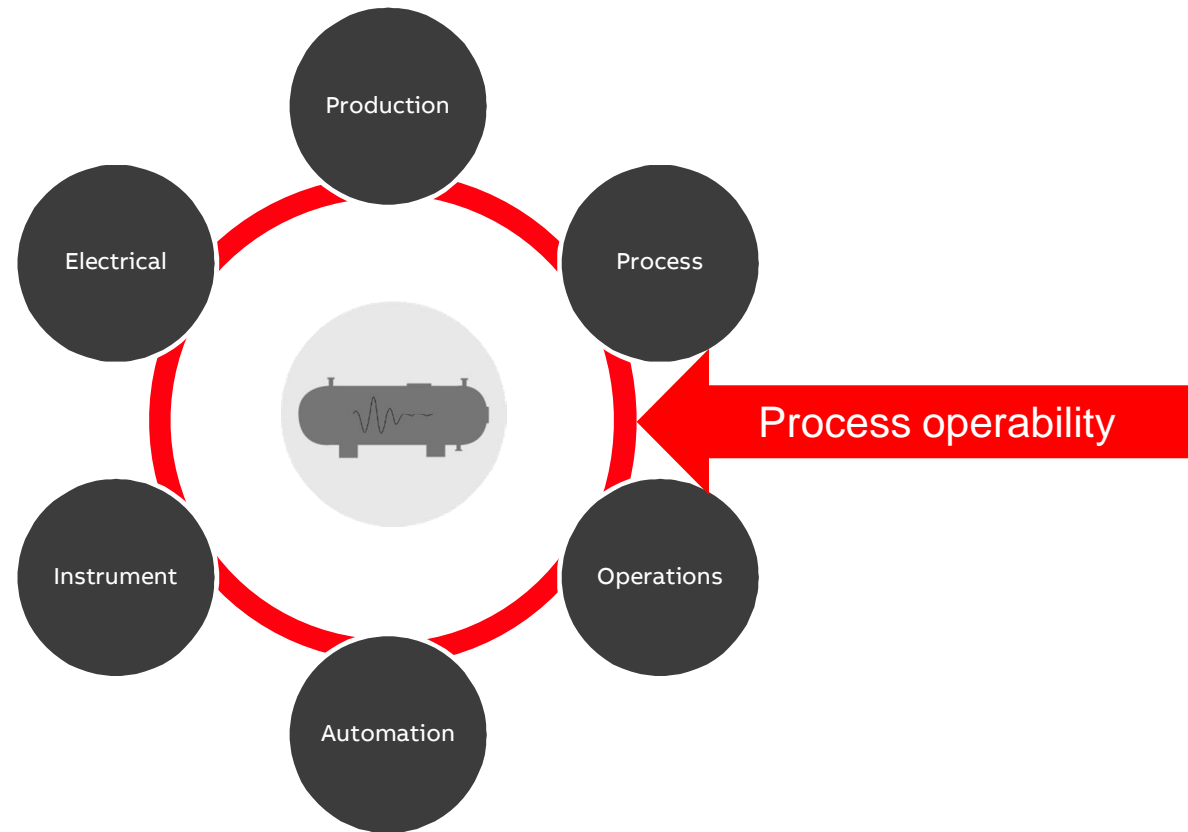






# Process operability

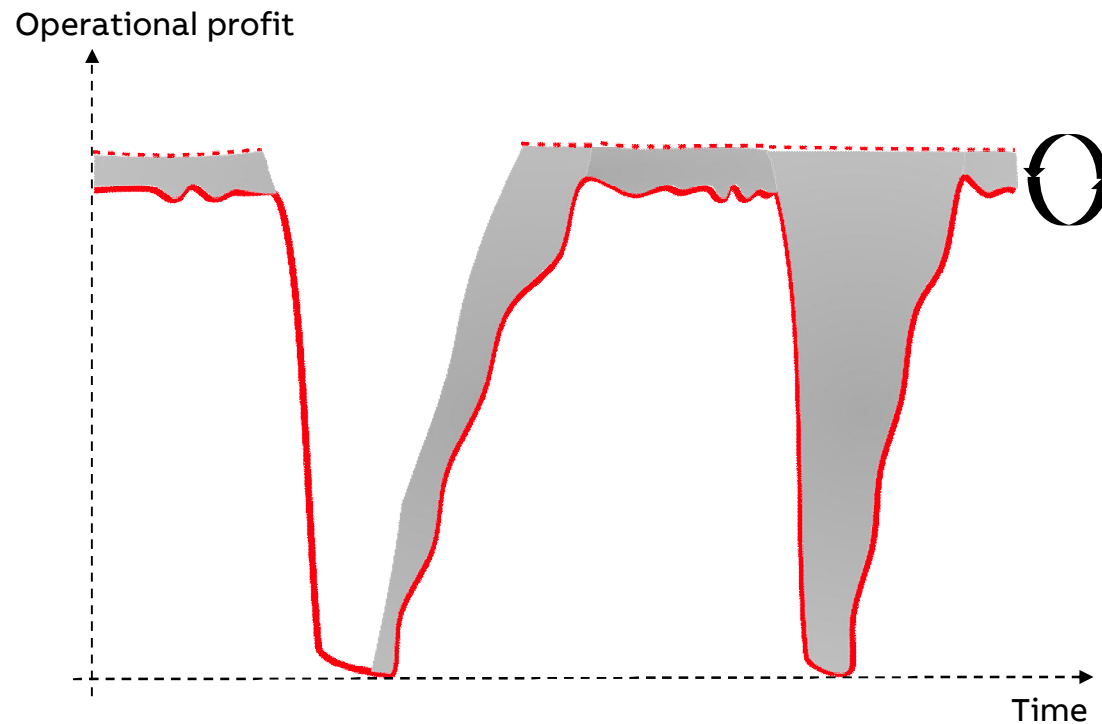
A «hidden» bridging competency



# Process Operability

The value it delivers

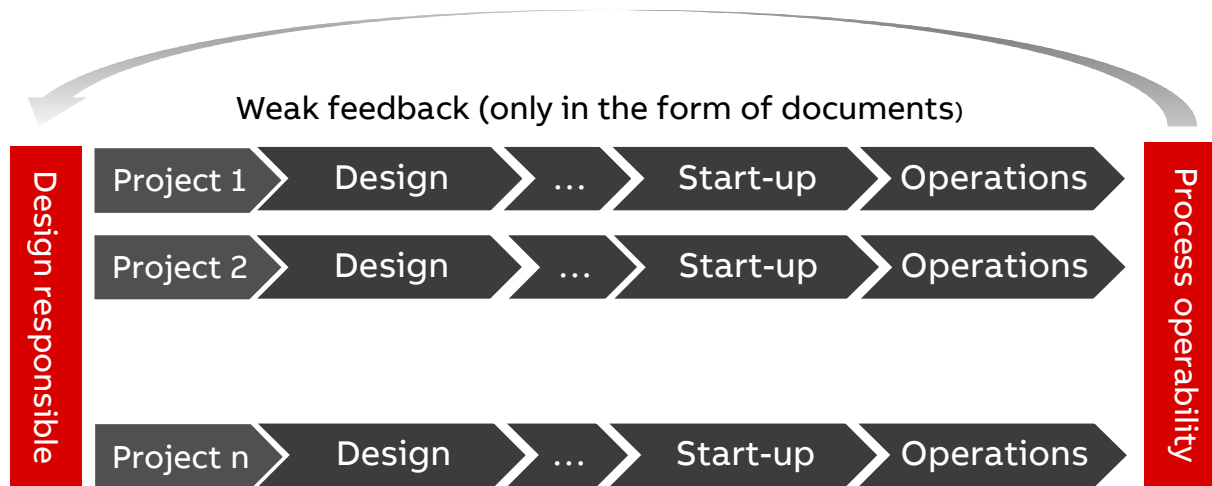
- § Increase normal production **3-10%\***
- § Reduce unplanned shutdowns **~20%\***
- § Start-up **50%\*** faster
- § Capture new opportunities and sustain



# — The secret recipe

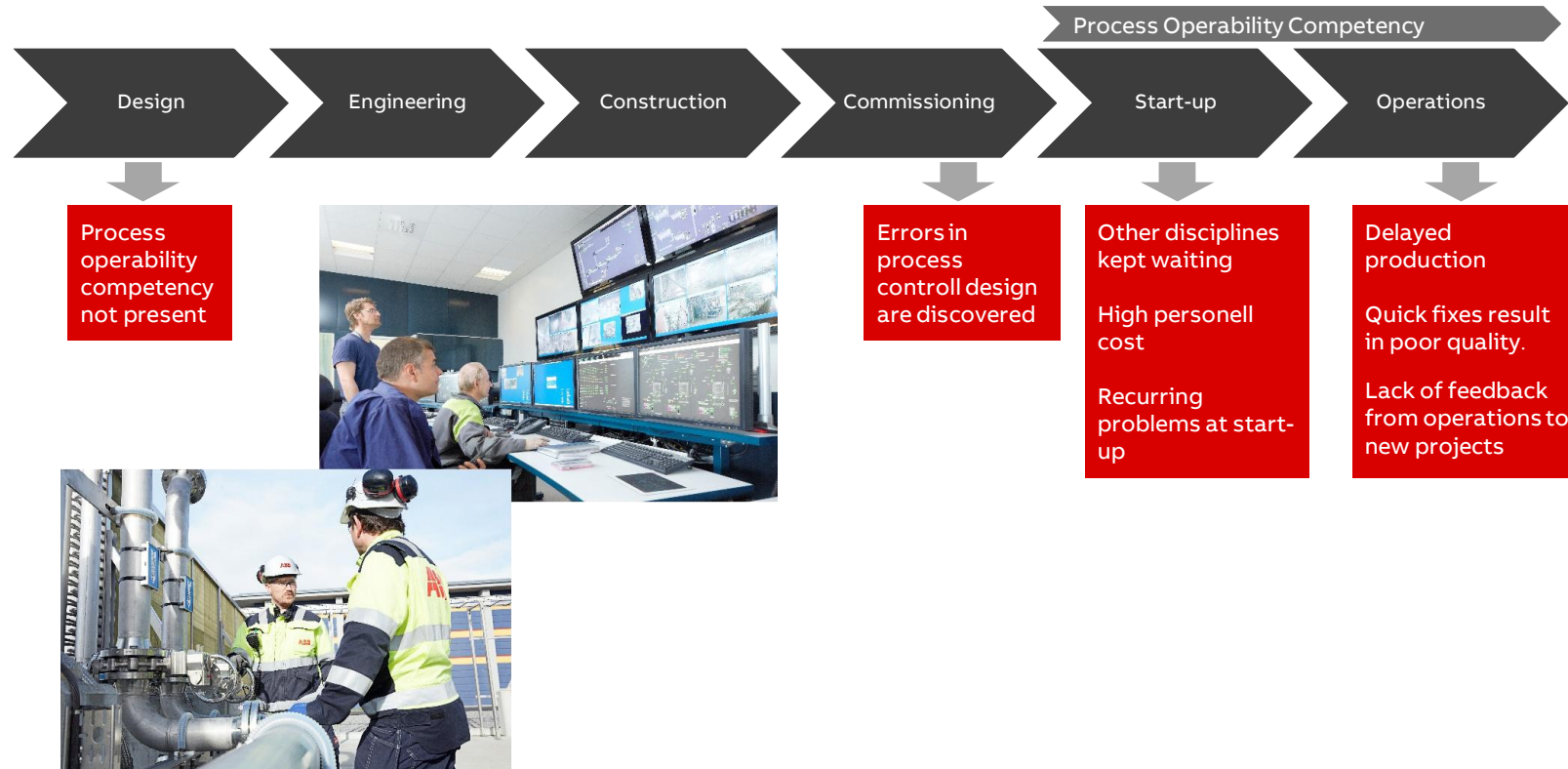
# Problem description

## Background



# Traditional project workflow

Identified waste for customer



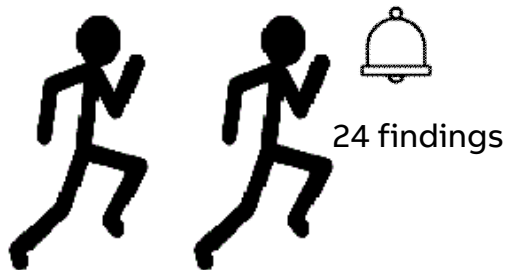
# Improvement project

How it all started

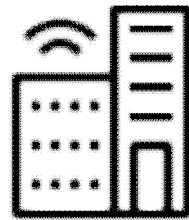


10 pages of design input

24 findings



24 findings



Customer office

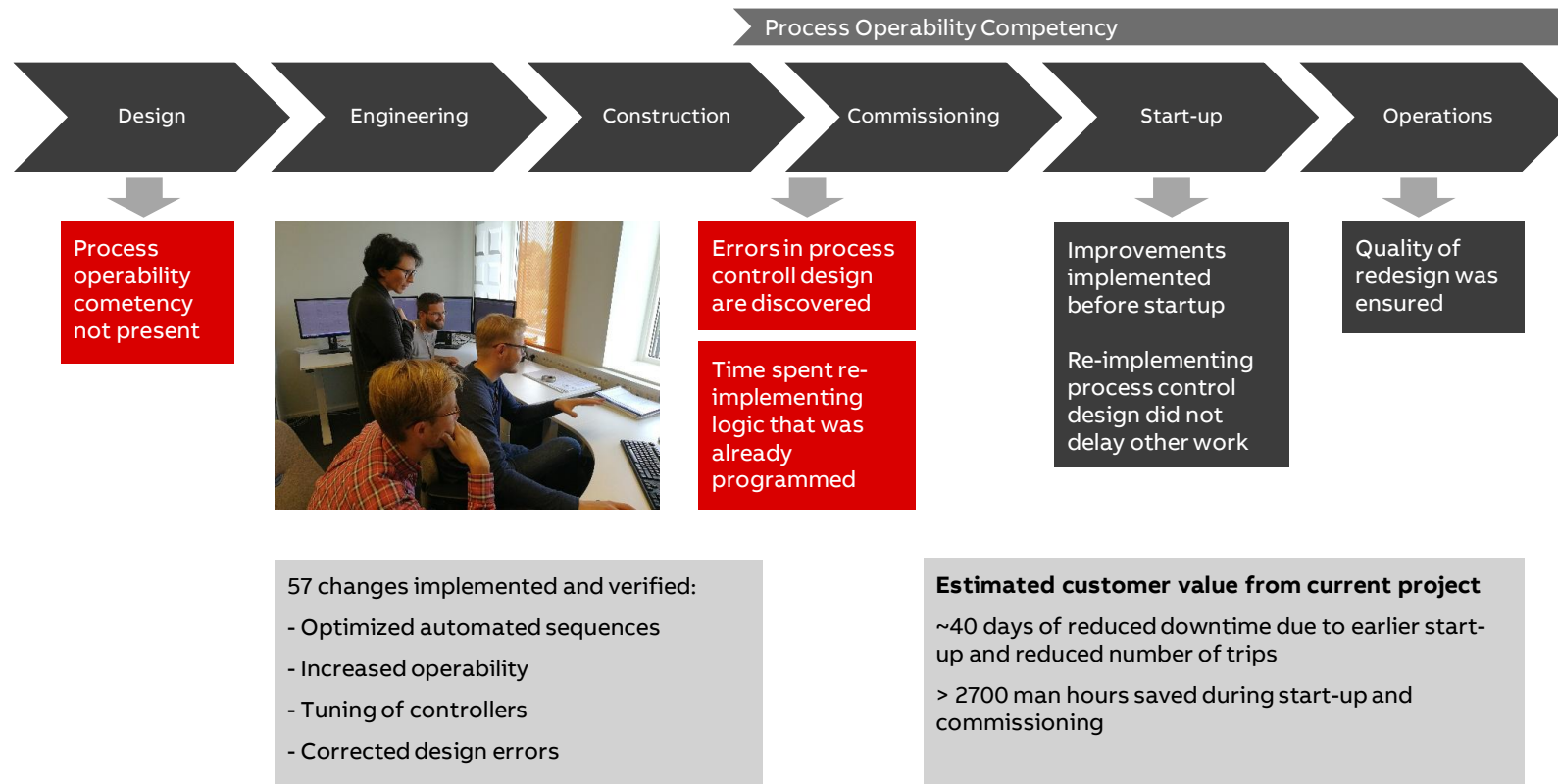
ABB: Do you want us to review and fix your process control design before start-up?

Customer: That would be awesome!



# Current project workflow

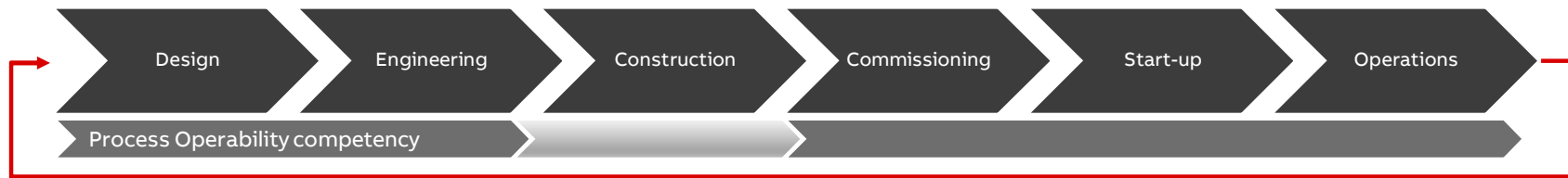
One step towards solving the problem together with customer





# Target project workflow

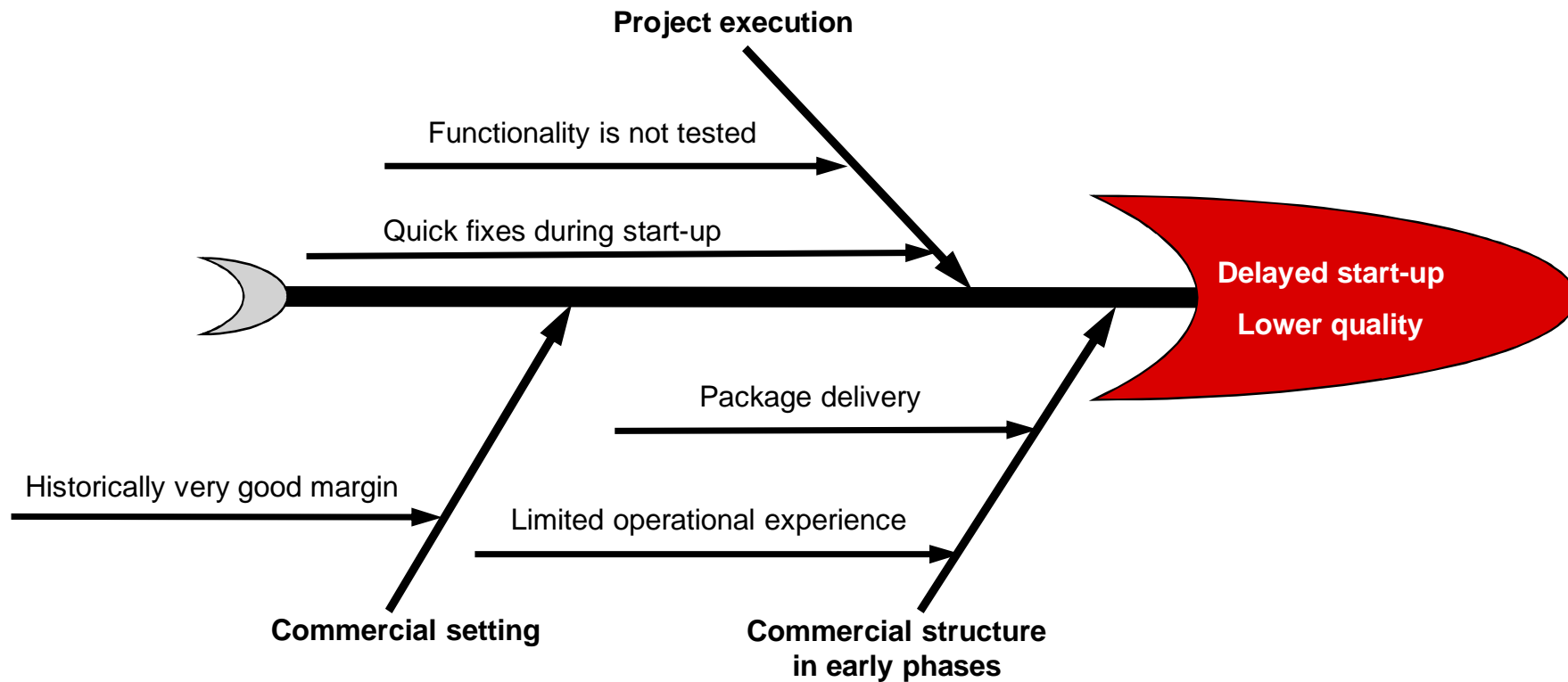
Learning from the process together with customer



Closing the loop (from operations to design)

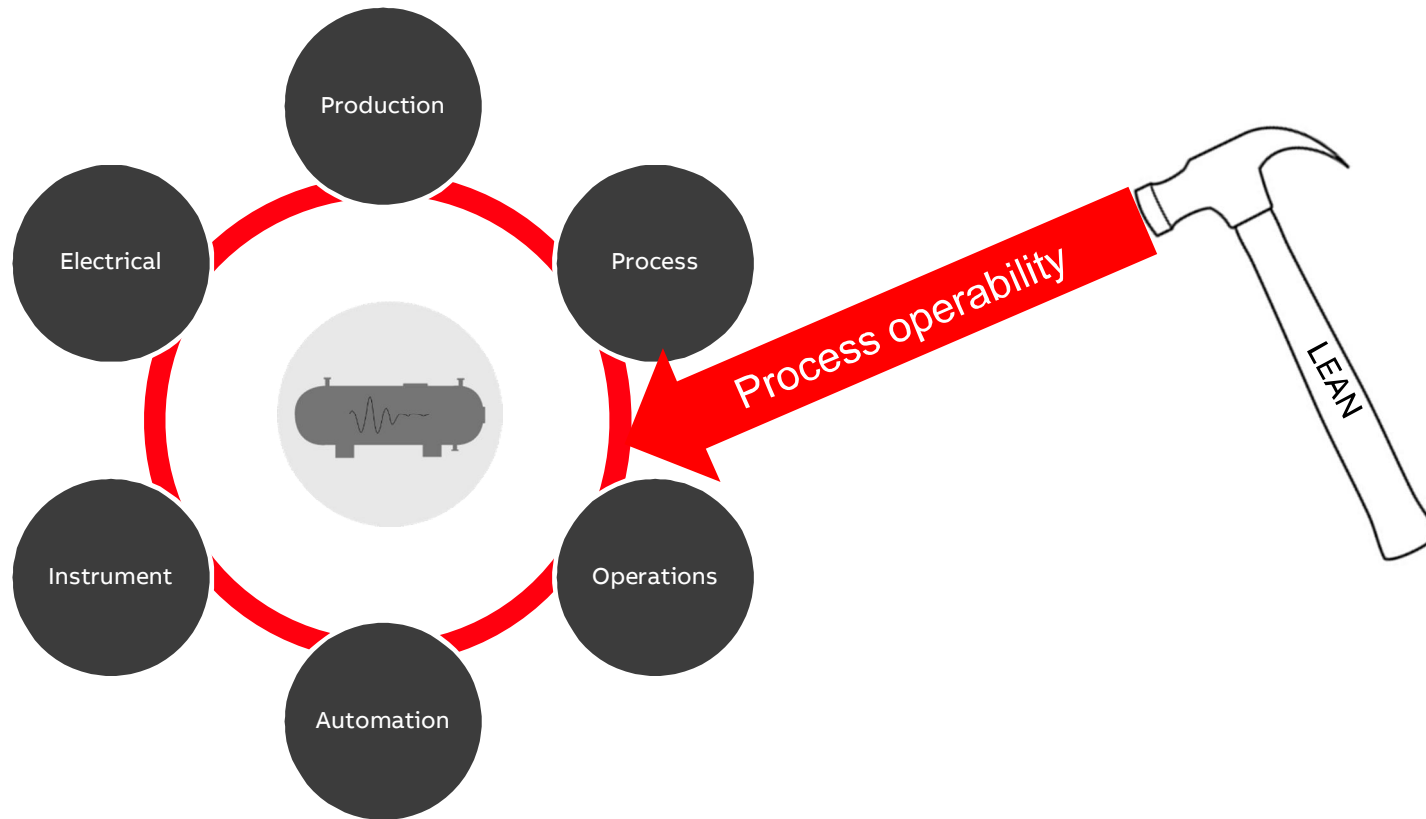
# Barriers

Why is process operability competency still not acknowledged in upstream oil&gas?



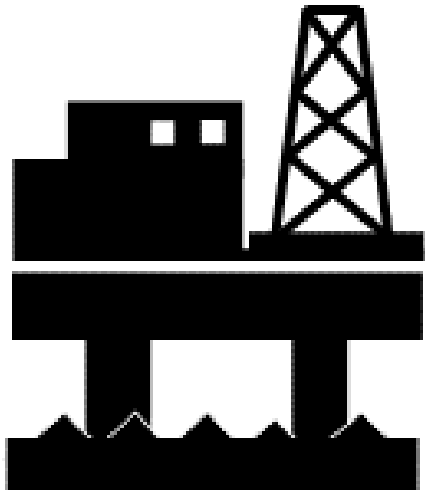
# Summary

Introducing the «hidden» bridging competency



# Summary

Let's make this



A little more like this:





**ABB**