CONTROL CENTRE OF THE FUTURE

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WHY

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HOW

03

CASES AND CHALLENGES

01

WHY

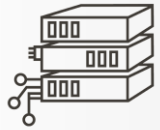
WHY DO WE NEED TO CHANGE THE CURRENT CONTROL CENTRE?

VISION

GREEN ENERGY FOR A BETTER WORLD

ENERGINET

RAPID CHANGES – TOWARDS AN RE-BASED ENERGY SYSTEM



PLATFORM

SUPPLY SITUATION

DIGITALIZATION

SPEED

CYBERATTACKS

COMPLEXITY

ENERGINET

INCREASED COMPLEXITY CALL FOR NEW DEMANDS AND POSSIBILITIES

High stability in control centre applications

Flexibility and supplier independency

User involvement and demand-driven development

Automation and datadriven descision support

Rapid implementation and custom supplier option

ENERGINETS DEMANDS AND POTENTIALS

GPST-CHALLENGE OUTLINE

AND WE ARE NOT ALONE..

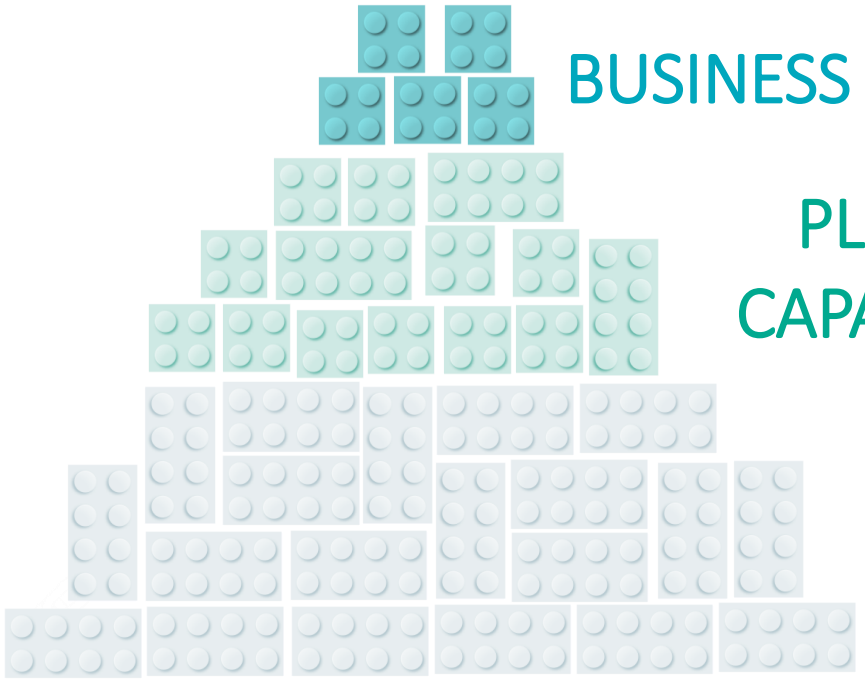
02

HOW

HOW ARE WE BUILDING THE CONTROL CENTRE OF THE FUTURE?

HOW ARE WE TRANSFORMING THE CONTROL CENTRE?

GREEN ENERGY FOR A BETTER WORLD

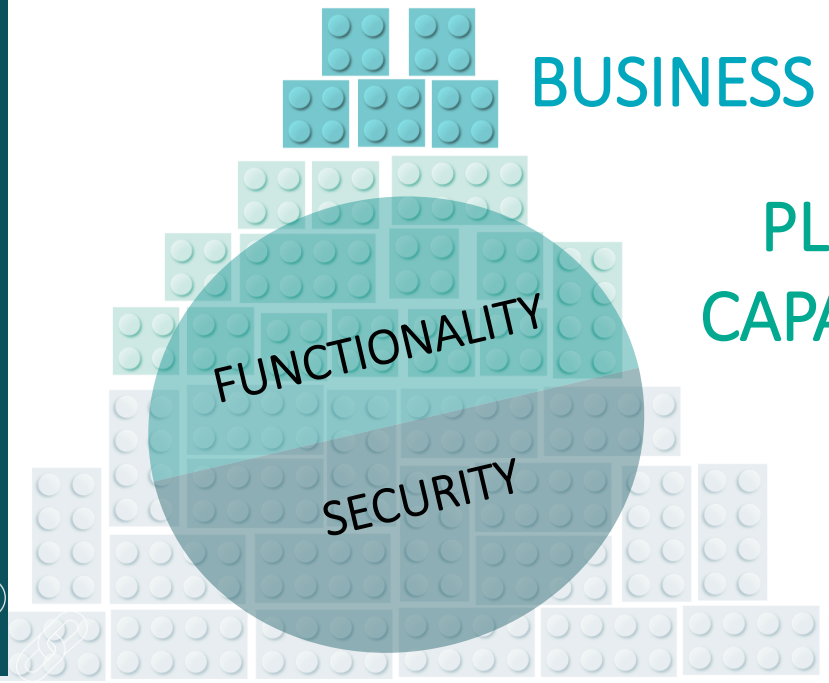


	AS IS	TO BE
BUSINESS CENTRIC	IT operation with IT focus	IT operation with focus on (electric) systems
PLATFORM CAPABILITIES	Monolit System Single point integration Data as silo	Modular applications Multipoint integration Data as a product
CORE	Security as add-on Manually config. systems Compute	Security by design Automated platform High compute

A FUTURE-PROOF OPERATIONEL FUNDATION

GREEN ENERGY FOR A BETTER WORLD

CO-CREATION OG PARTNERSHIPS



BUSINESS CENTRIC

PLATFORM CAPABILITIES

CORE

Modular

Realtime

Operator centric decision support

Data-driven and automatic

Secure communication

Security by design

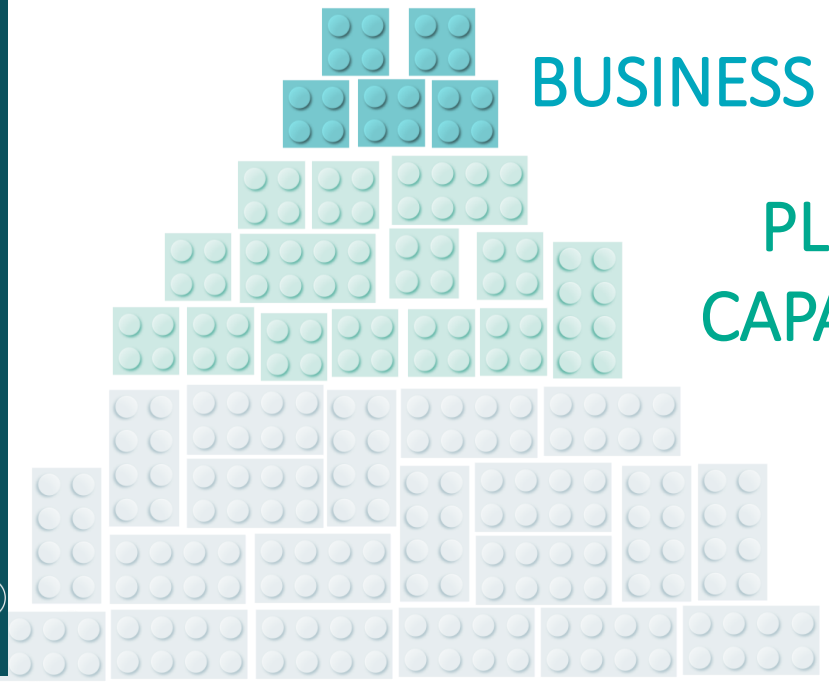
Cyber-security

High IT/OT resilience

GRID OPERATION – CODING ARCHITECTURE

GREEN ENERGY FOR A BETTER WORLD

CO-CREATION OG PARTNERSHIPS



BUSINESS CENTRIC

Supervisory & control

Outage Planning

Realtime security analysis

Early warning, early prevention

AVR/AVC

Dynamic Line Rating

PLATFORM CAPABILITIES

Edge computing

Datamanagement

High cyber resilience & IT robustness

High performance compute & data streaming

Domain specific protocols

CORE

Secure communication & compute platform

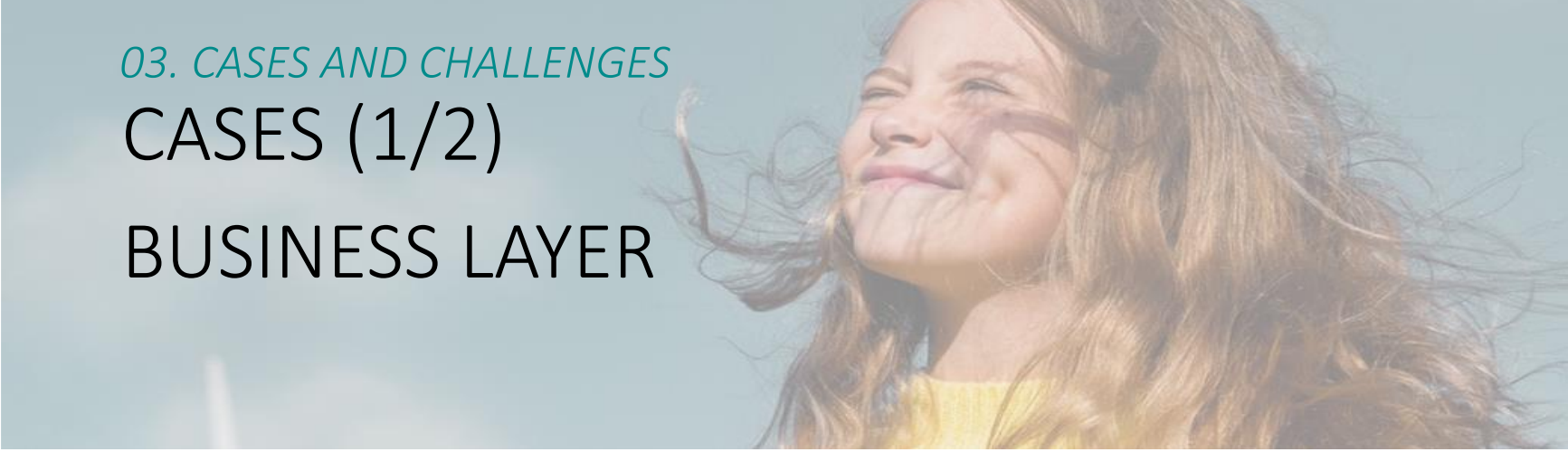
03

HOW

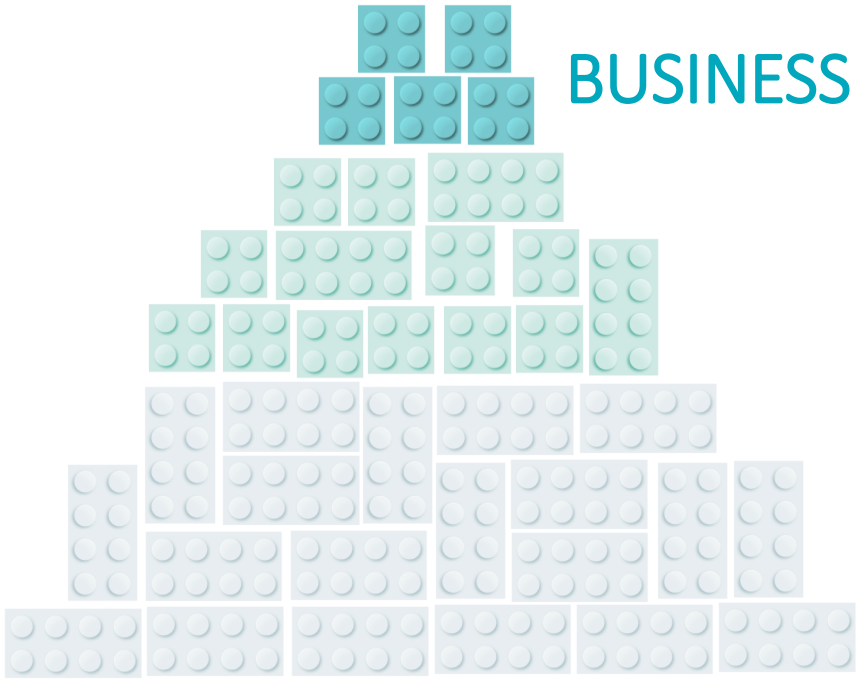
CASES AND CHALLENGES

CASES (1/2)

BUSINESS LAYER



GREEN ENERGY FOR A BETTER WORLD



BUSINESS CENTRIC

TRIAL AND ERROR
"FAIL FASTER"
GROWTH MINDSET

Dynamic stability Assessment

Dynamic Line rating

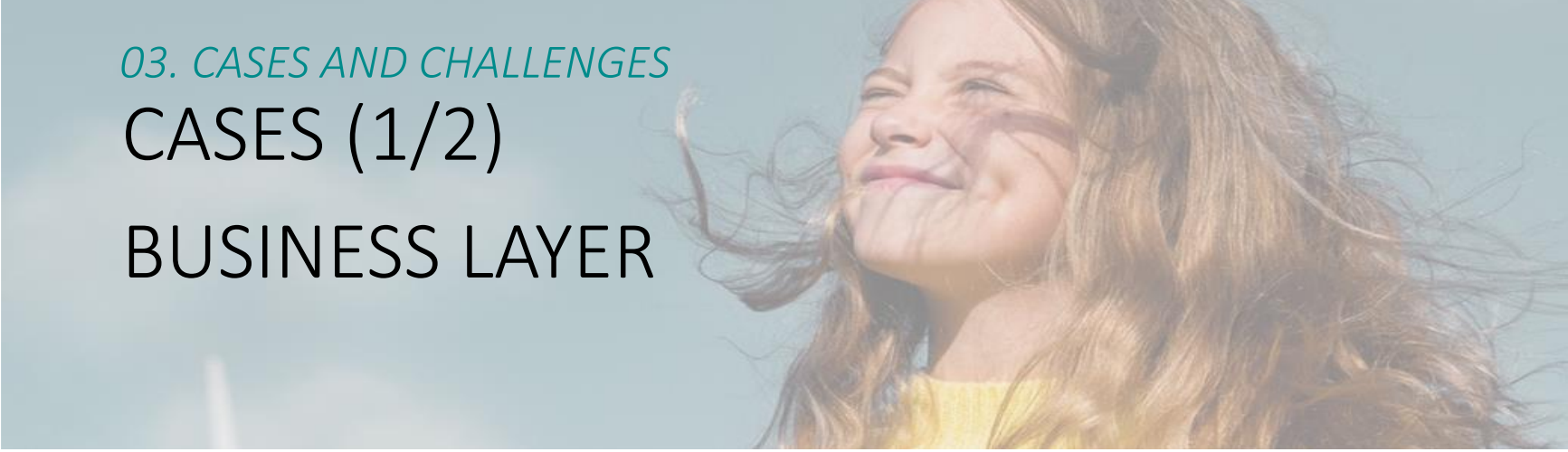
Wind and Solar forecast

Imbalance forecast

"No one knows how to run the powersystem in 10 years"

CASES (1/2)

BUSINESS LAYER



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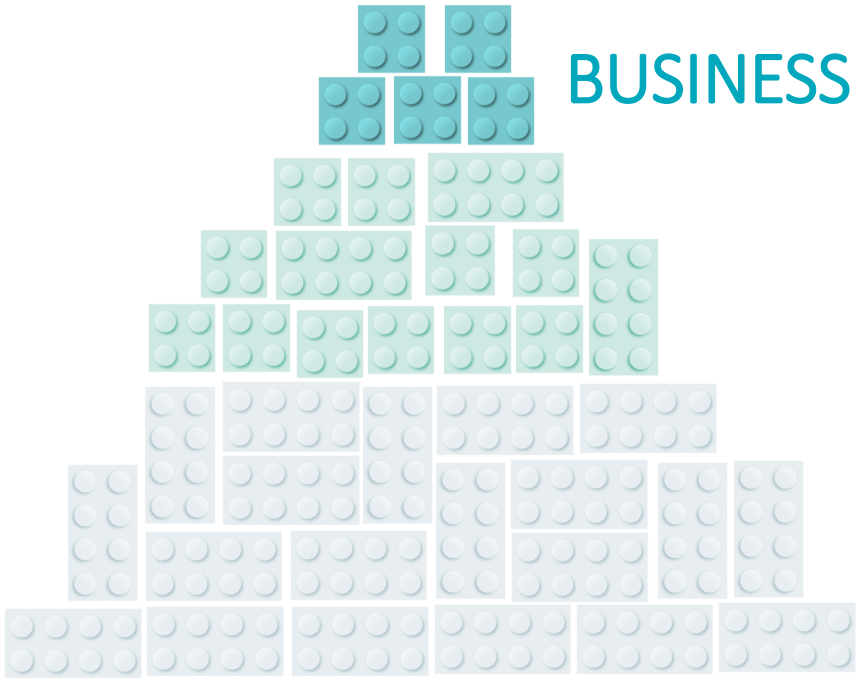


BUSINESS CENTRIC

PARTNERSHIP-CASE:

Forecasting potential power line overload

TRIAL AND ERROR
"FAIL FASTER"
GROWTH MINDSET

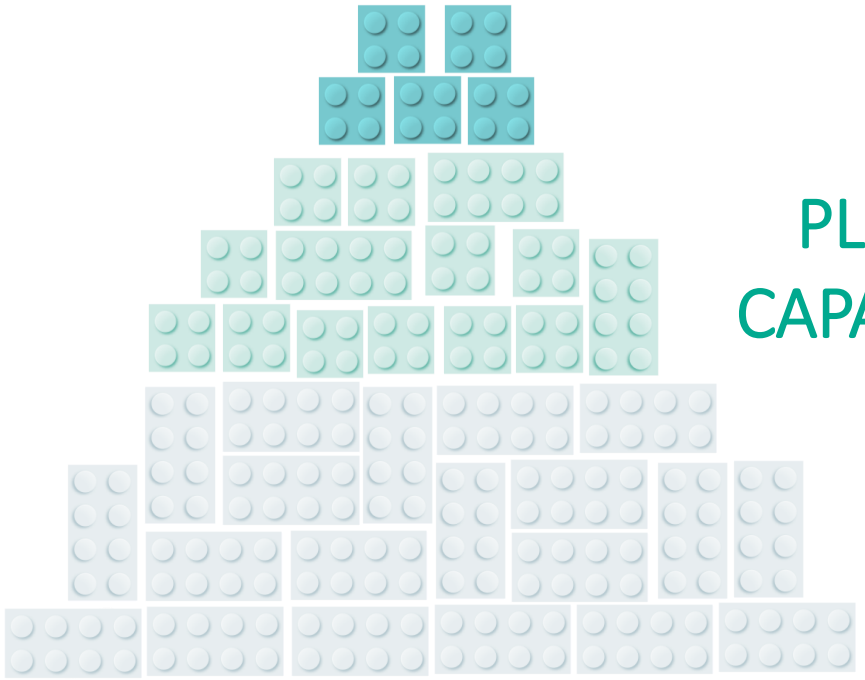
LEARNING:

Larger amount of data needed to train sufficient good models.

CASES (1/2)

PLATFORM LAYER

GREEN ENERGY FOR A BETTER WORLD



PLATFORM CAPABILITIES

TRIAL AND ERROR
"FAIL FASTER"
GROWTH MINDSET

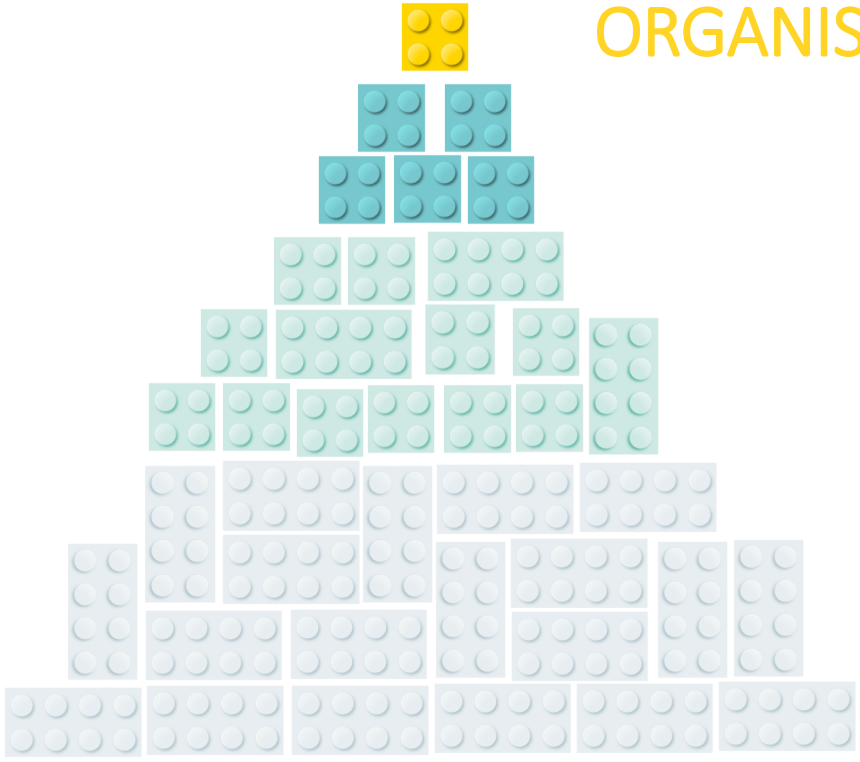
CASE:

Digital operational service bus for 3rd party integration

LEARNING:

Enabling Modularity/Scalability
Integration to existing SCADA/EMS
Enabler for datadriven decision

OTHER CHALLENGES



ORGANISATIONAL

- Teams of teams
- Co-creation mindset
- Attracting talent
- Capabilities and training

”Unchartered territory that challenges culture and mindset”

THANK YOU FOR YOUR ATTENTION

QUESTIONS?

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