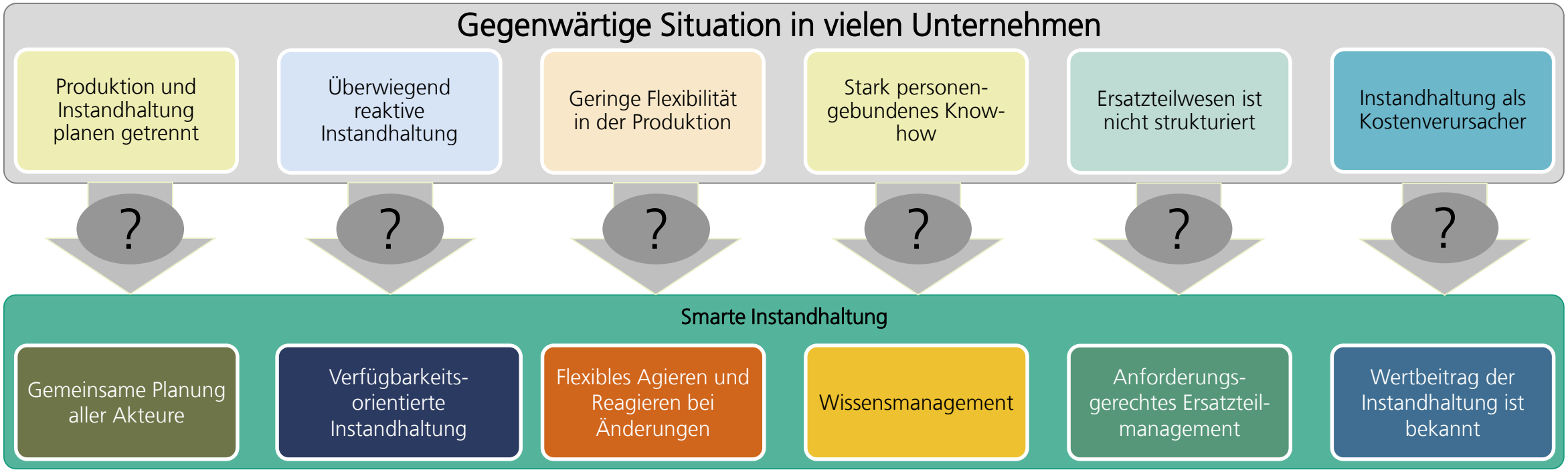
BCAP® Analytics

The easiest way to start with Big Data and Predictive Analytics

Franz Braun

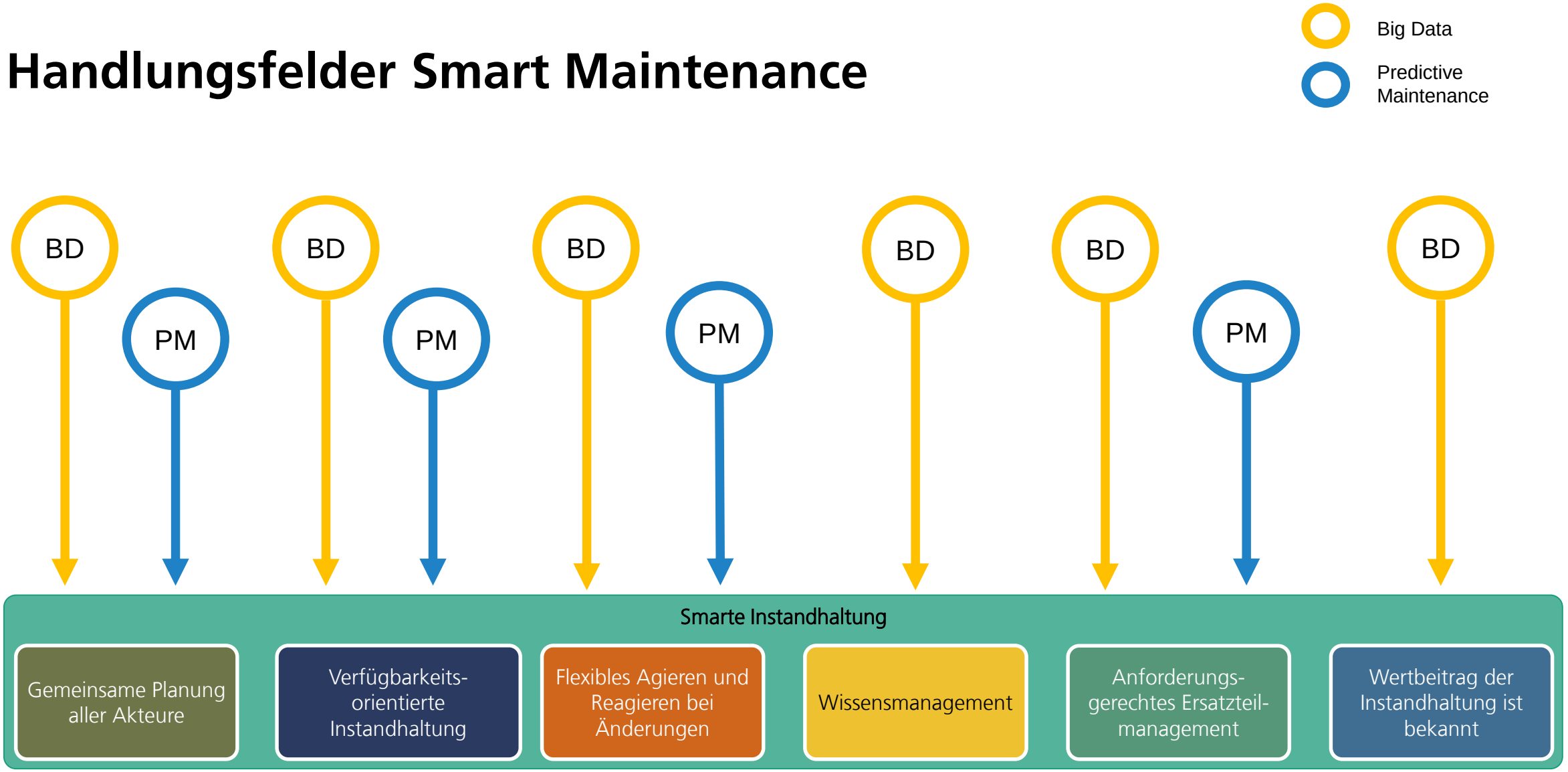
Handlungsfelder Smart Maintenance



acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

Fraunhofer IML

Handlungsfelder Smart Maintenance



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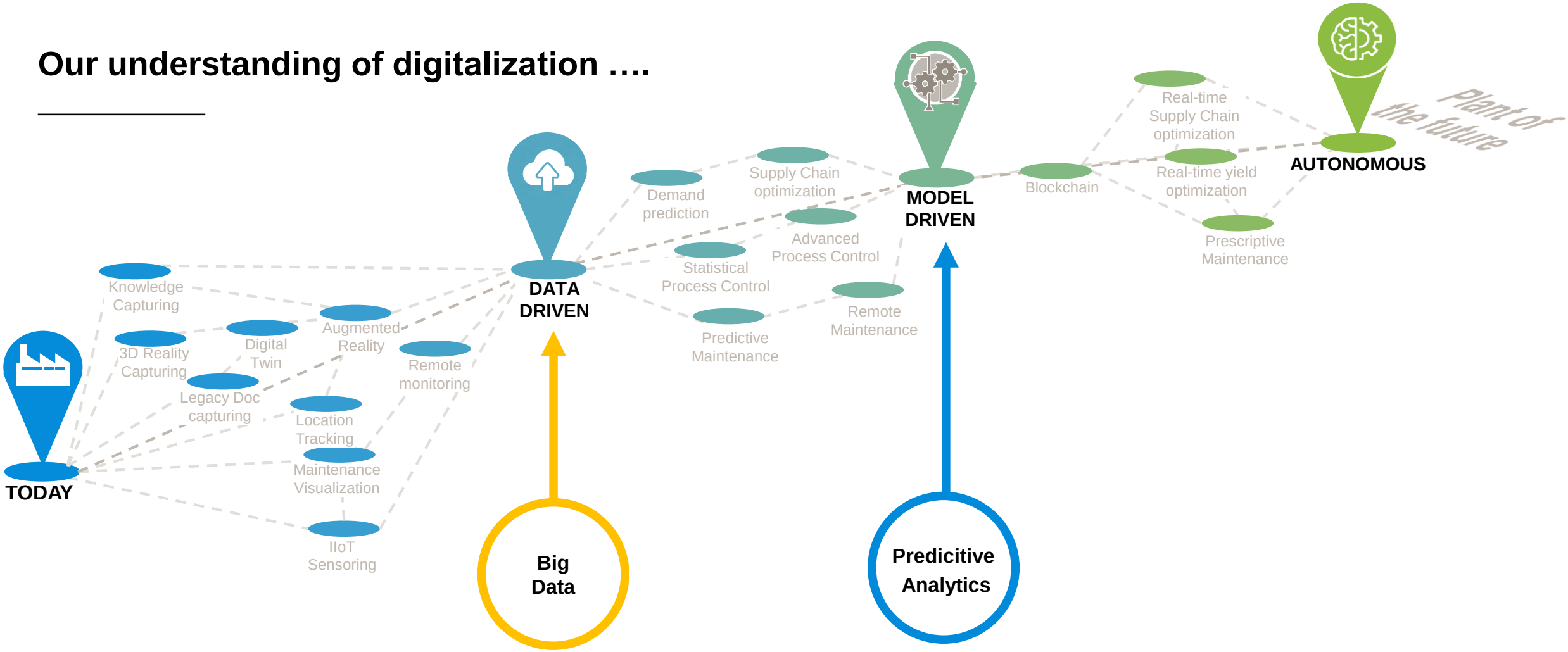
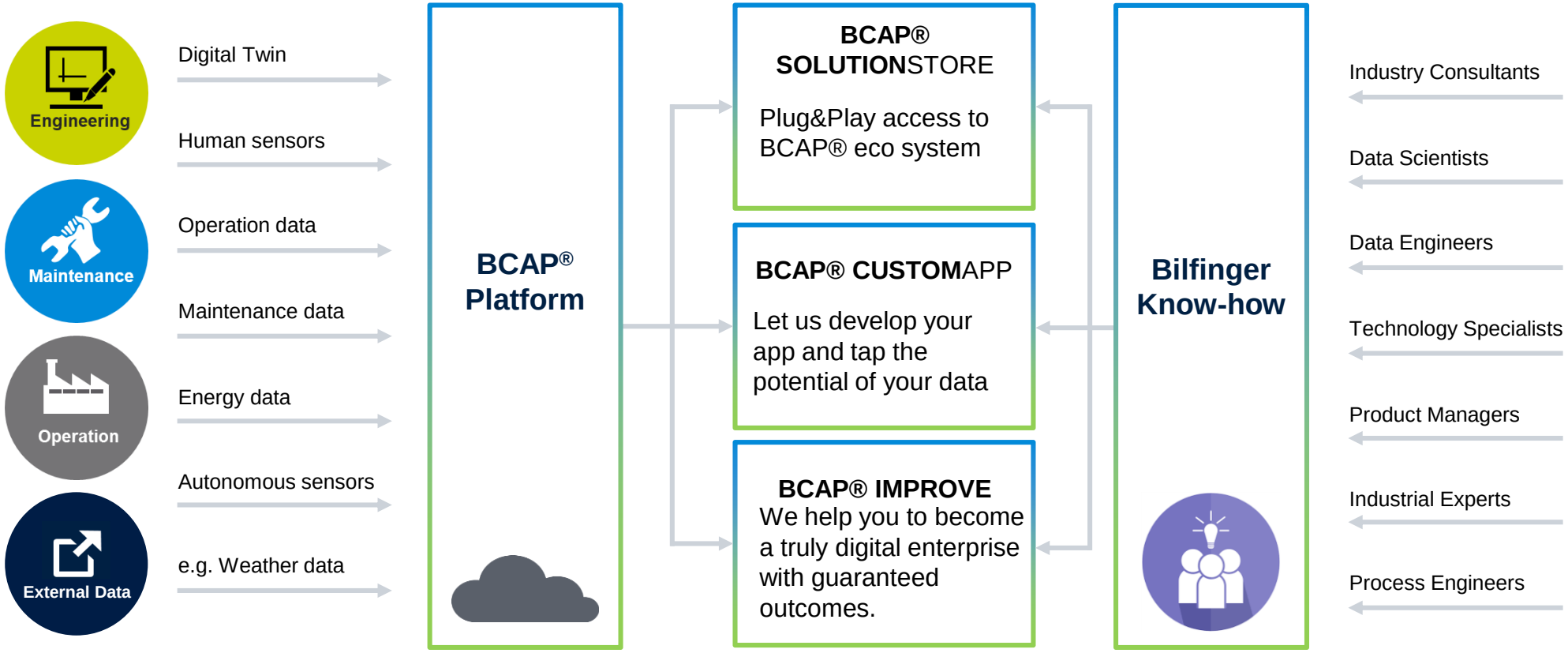
Our understanding of digitalization ….



Before you can start you need a system



Our way to Predictive Maintenance / Analytics

Business understanding

Define use case and data

Data block 1

Data block 2

Data block n

REST API

BCAP® Uploader

Custom APP development

Data understanding

Data preparation

Modelling

Evaluation

APP

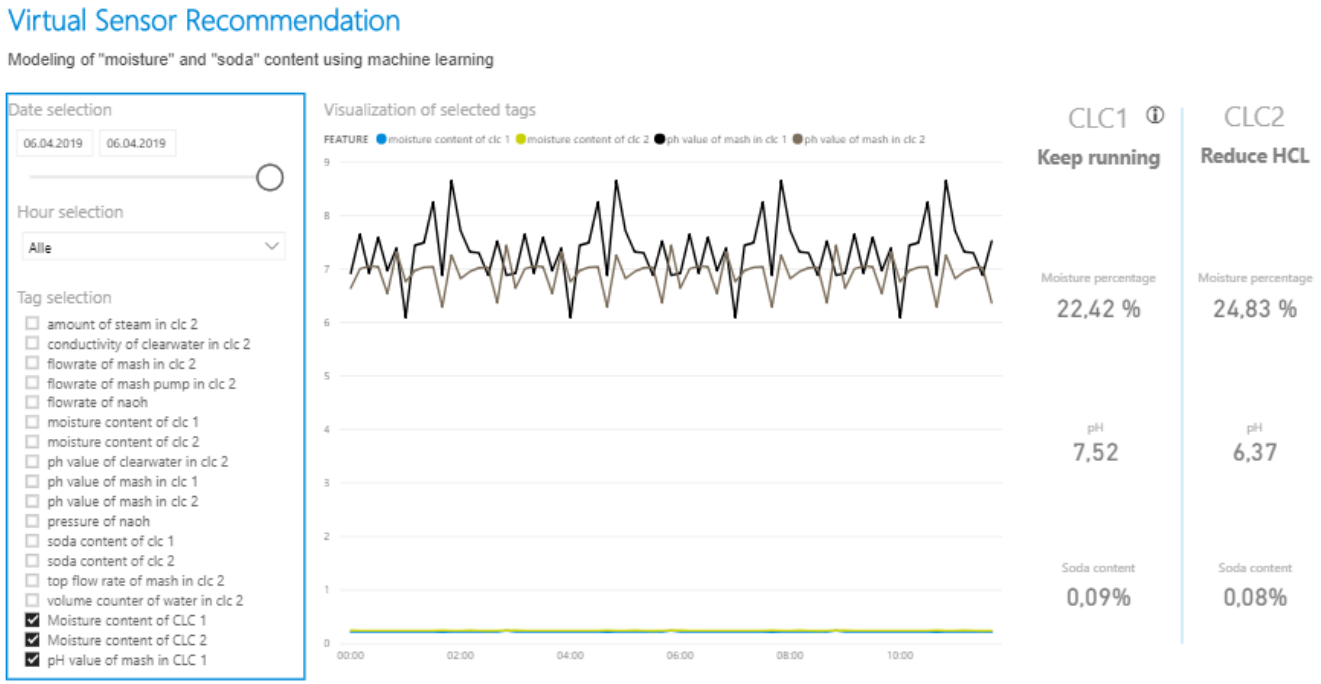
On BCAP® portal

APP deployed

Via API in your cloud

Custom APP available & business value captured

Operational success



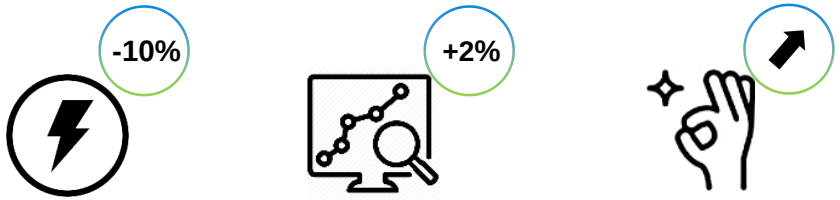
Aluminum manufacturer

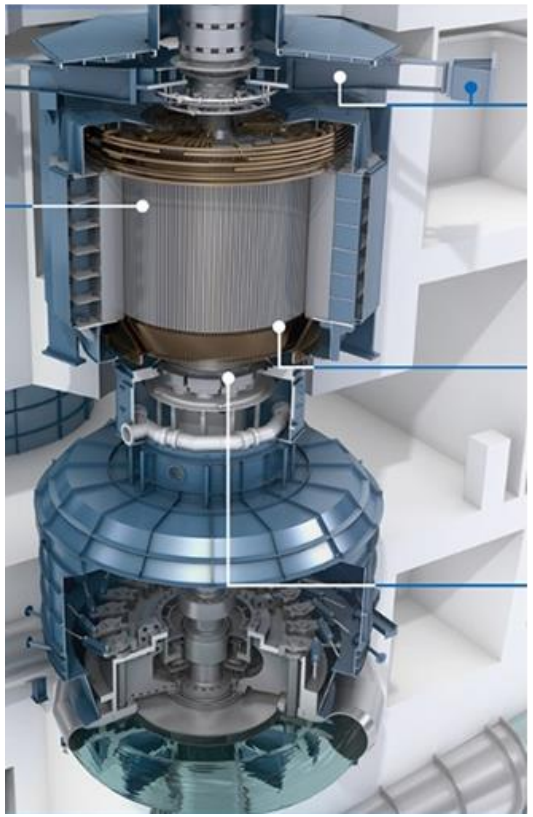
Their Challenge

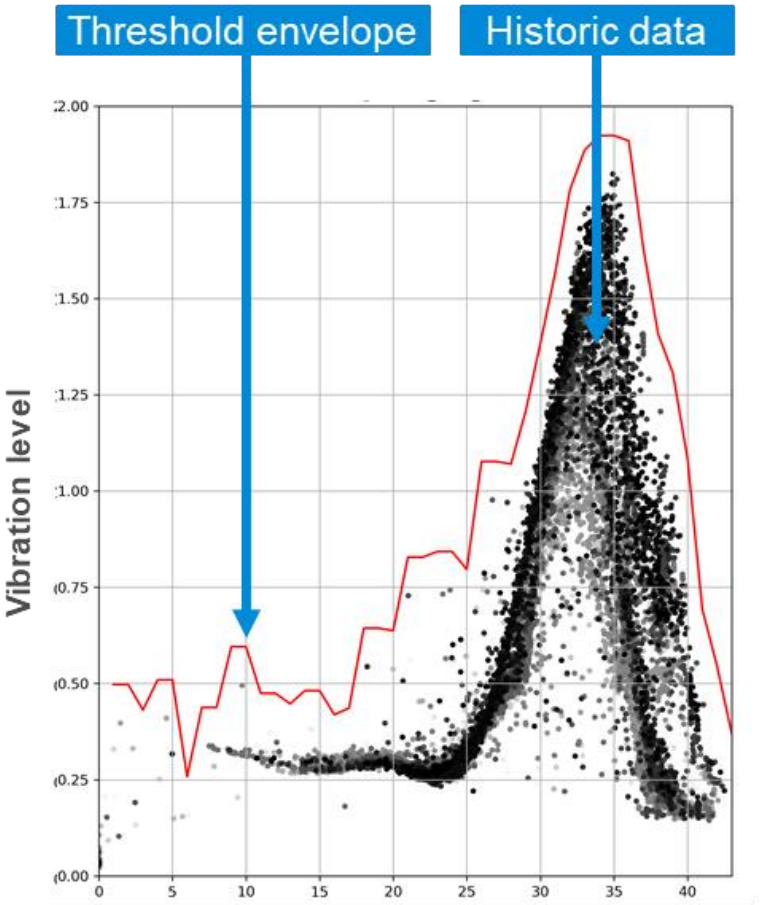
Throughput limitation and product declassification on belt filter due to offline moisture measurements on 3h intervals

Our Solution

BCAP® CUSTOMAPP | SMART virtual predictive moisture sensor using different data tags in 1-min intervals







Renewable energy supplier

Their Challenge

Minimize bearing failures on hydro power generators that cause 2 months of unplanned outage

Our Solution

BCAP® CUSTOMAPP | SMART early failure predictor, signaling vibration levels being outside threshold envelope.

-10%
Costs

+10%
Availability

✓
Stable Process

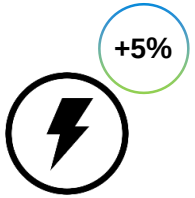
Manufacturer of additives

Their Challenge

Create a state-of-the-art digital plant as a lighthouse example of digital transformation (and boost OEE to the next level).

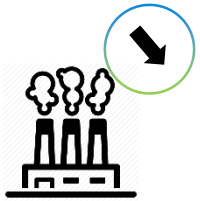
Our Solution

Monitoring quality parameters and time series using BCAP and Trendminer to identify the golden batch. Digitalization Plug and Play in 8 months through a joint cooperation to pilot our solutions such as **BCAP®** IMPROVE.



Energy savings

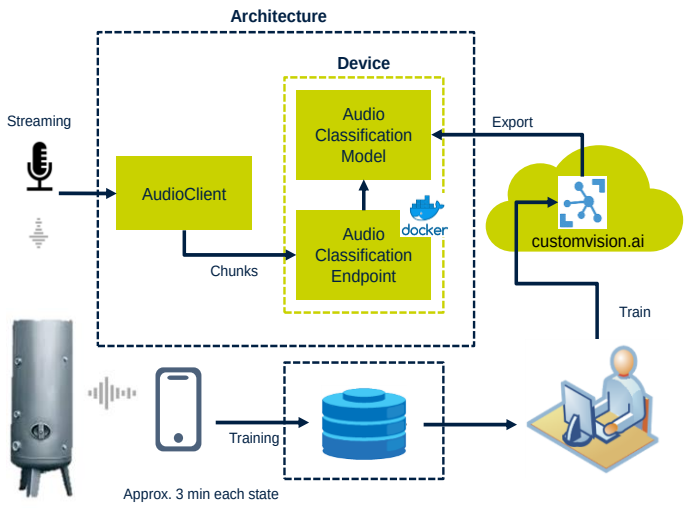
Output

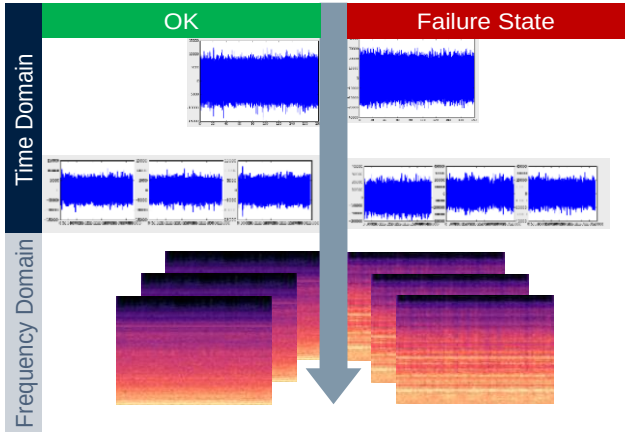


Emissions

Joint Bilfinger success projects

“Sound is the most apparent sign of mechanical failure.”





Cognitive Sensor

Bilfinger Maintenance GmbH Germany

Business Case

- Cavitation detection: Valve and Vacuum pump
- Grinder: Product size recognition based on the grinding noise
- Customized classifier for different failure modes at a pump station

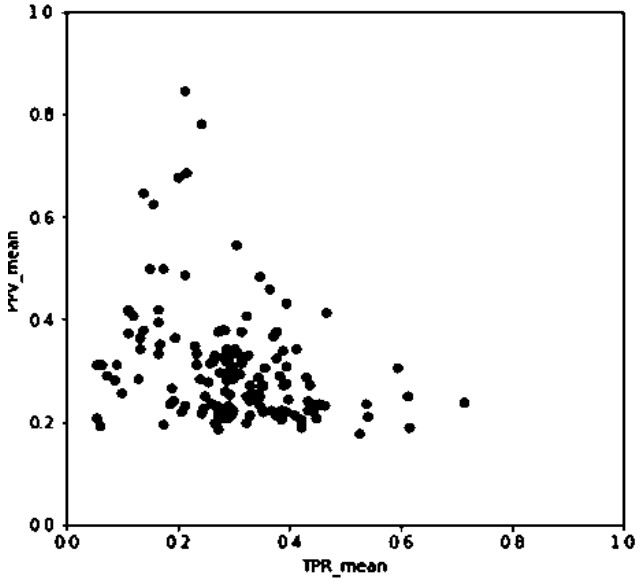
Approach

- Just ~ 1 Minute recording of a specific sound to creat a new classifier

Recording via App

Sound Database

Artificial Intelligence



Safety Predictor

Bilfinger USA

Visualization and Analysis of Bilfinger Westcon data

- 8121 safety reports and 711 incident reports → usable 1575 (approx. 20%) safety reports and 53 (approx. 7,5%) incident report

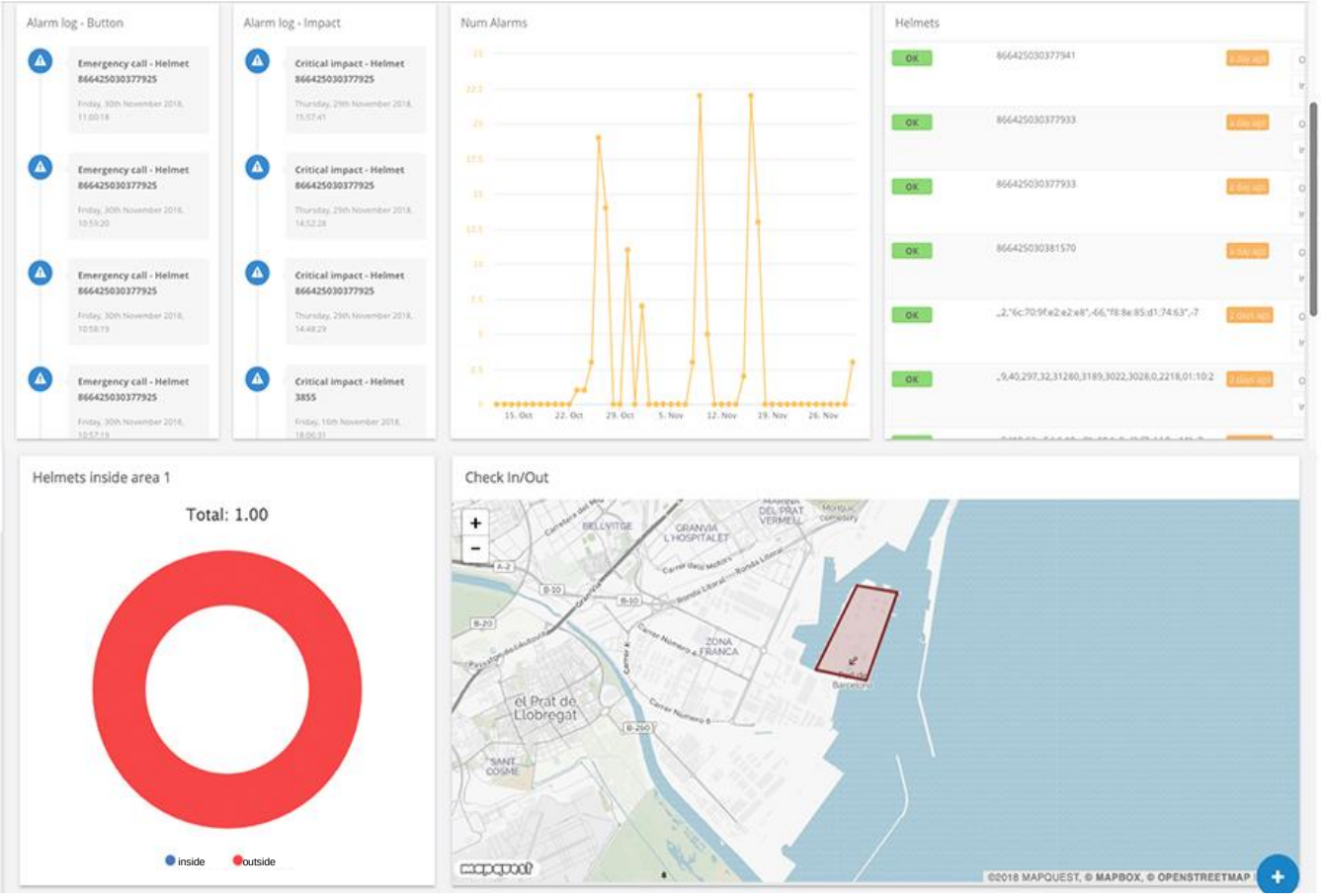
Prediction model for incidents

- Best result: prediction of 90% of all incidents with a ratio of 3 alarms per incident

Next Steps

- Analysis of Data from the whole Bilfinger Group
- Implement it into BCAP

Safety



Safety Helmets

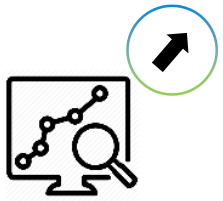
Bilfinger USA

Business Case

- Project start with Bilfinger USA
- Increasing productivity and safety for construction sites and projects

Approach

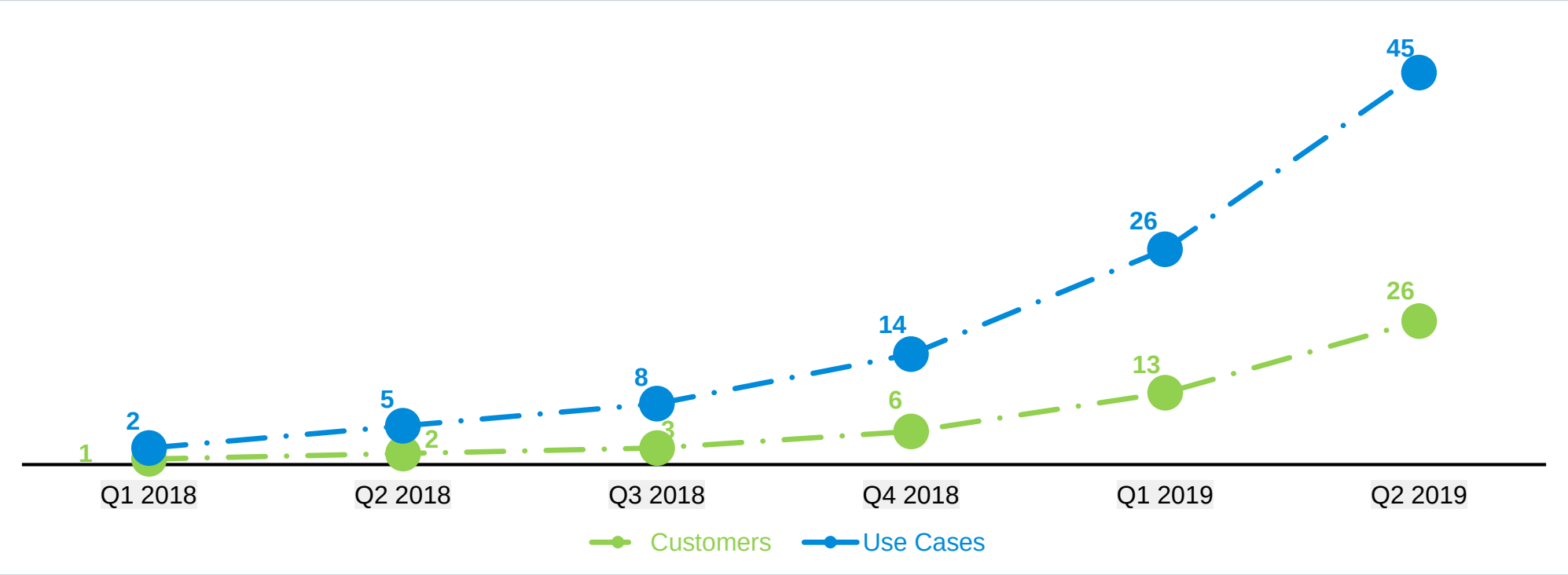
- Status Quo Analysis and Tracking
- Evaluation and suggestions for improvement



Productivity

Safety

BDN Progress



Predicting the future is no more card reading

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BILFINGER

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