



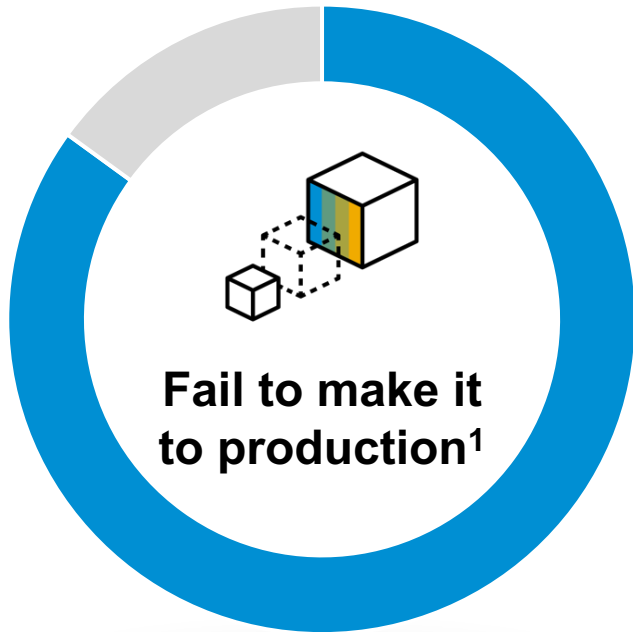
SBN Webinar: **Apply and scale Machine Learning end-to-end with SAP Data Intelligence**

Philipp Zaltenbach, Product Management – SAP SE
April 29, 2020

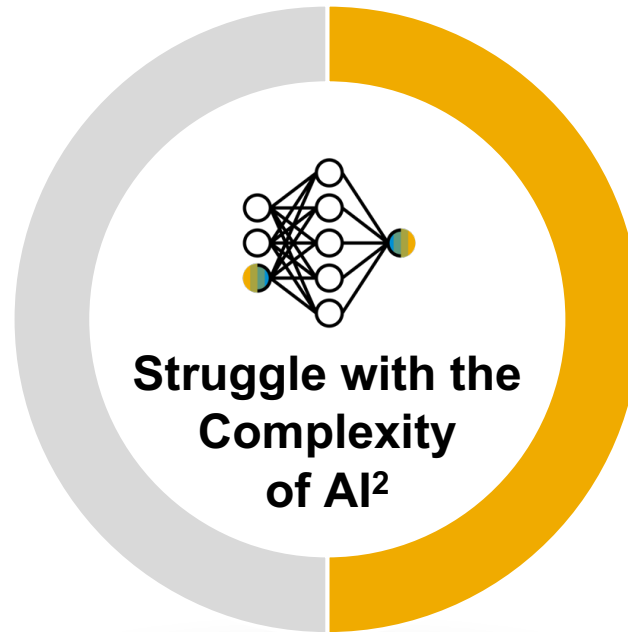
PUBLIC

Artificial Intelligence: The Hype vs The Reality

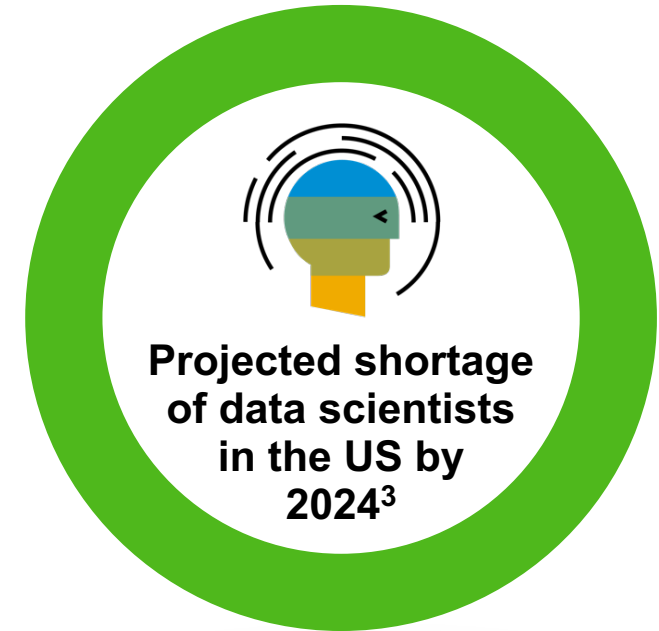
85%



50%



250k



¹ <https://www.gartner.com/doc/3834463/pitfalls-avoid-planning-data-science>

² Powering the Intelligent Enterprise with AI –Forrester 2018

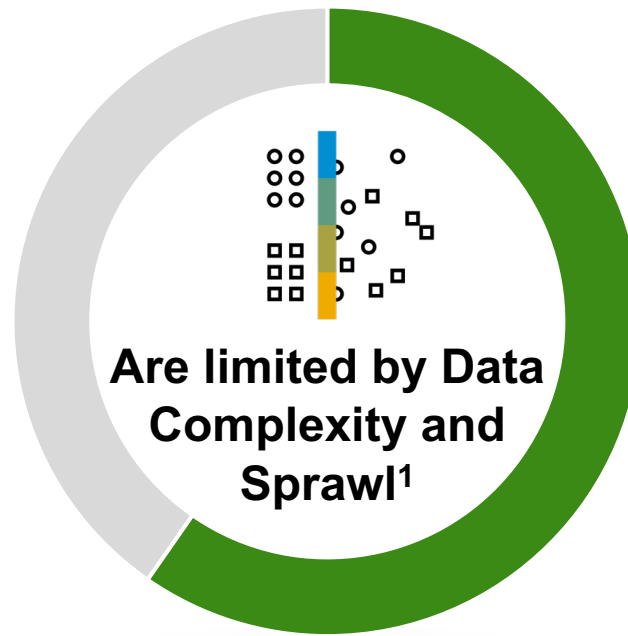
³ The Age of Analytics: Competing in a Data Driven World – McKinsey 2016

Information Management: A New Approach Is Needed

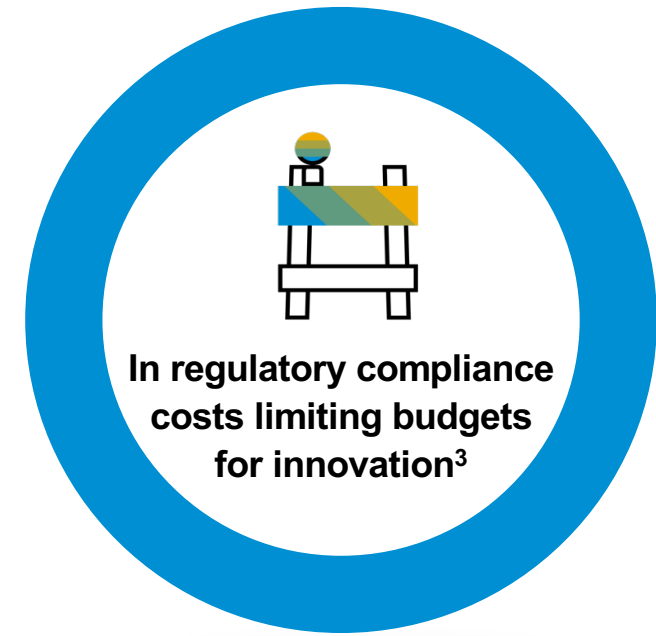
86%



74%



\$14.5



¹ Data2020: State of Big Data Study –Regina Corso Consulting 2017

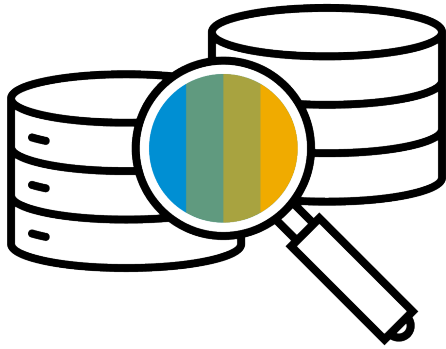
² <http://dynamic.globalscape.com/files/Whitepaper-The-True-Cost-of-Compliance-with-Data-Protection-Regulations.pdf>



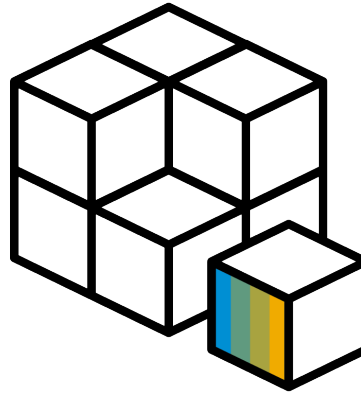
Introducing **SAP** Data Intelligence:

Enterprise AI meets Intelligent Information Management

What is Enterprise AI?



**Manage
the Data**

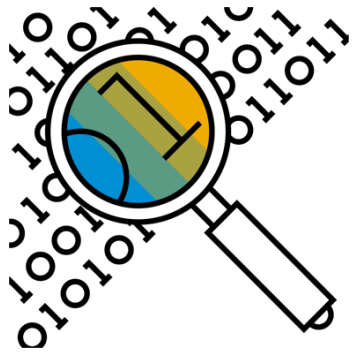


**Manage
the Development**

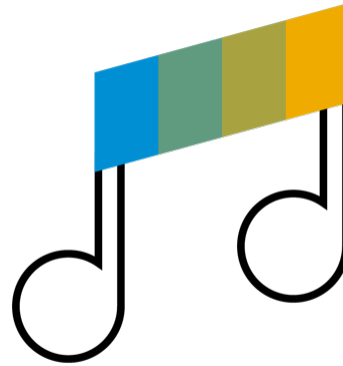


**Manage
the Delivery**

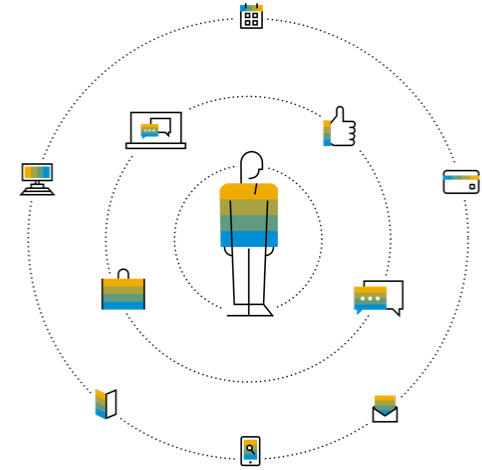
What is Intelligent Information Management



Discover
and Refine



Compose,
Conduct, and
Orchestrate



Govern
and Comply

Advanced Analytics & ML challenge Data Management to a whole new degree!



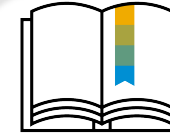
Integration

- Structured, unstructured, streaming
- Batch, (near) real-time
- Transactional, Analytical, Hybrid



Processing

- Several heterogeneous engines
- Diverse processing patterns (offline, lambda, event-driven ...)



Discovery

- Discover the available data sets, and find out their semantics



Quality

- Data inconsistencies and fragmentation
- Biased data sets
- ML model life cycle



Compliance

- Data privacy and protection
- Data lineage and auditing



Operations

- Distributed landscapes, cloud and on-prem
- Elastic scaling
- Monitoring

What is SAP Data Intelligence?

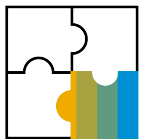
Create powerful data pipelines to **leverage** your data projects and to **orchestrate** the data processing

Harness the advanced machine learning content to **accelerate** and **scale** and **automate** your Data Science projects

Manage metadata across a diverse data landscape and **create** a metadata repository



SAP Data Intelligence is a **comprehensive solution to deliver data-driven innovation and intelligence across the enterprise**, unifying scalable enterprise AI and intelligent information management.



**Access &
connect data**



**Govern &
discover data**



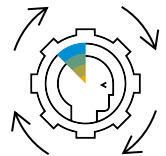
**Prepare &
label data**



**Build scalable
& flexible
data pipelines**

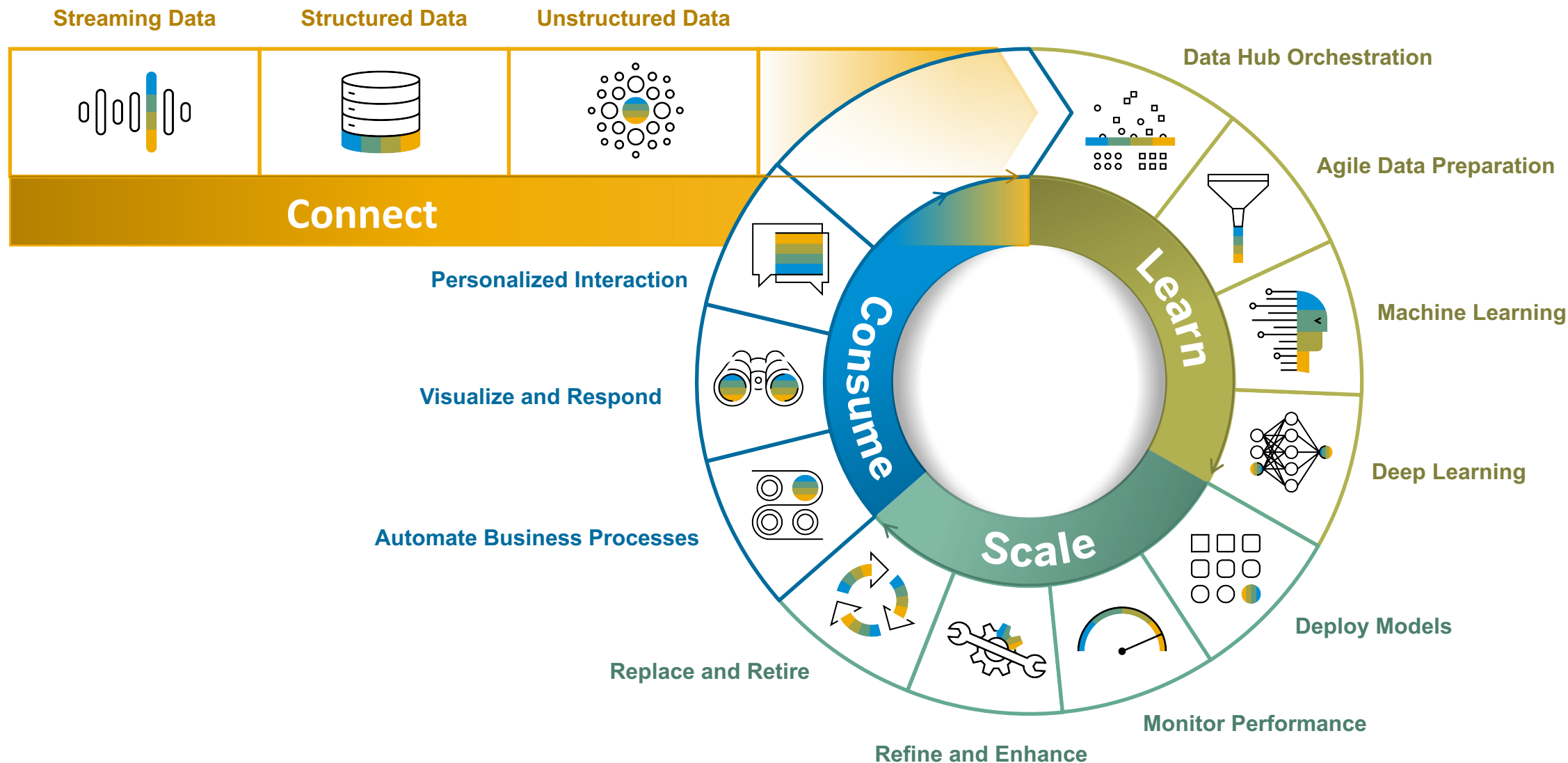


**Deploy & integrate
intelligent
applications**



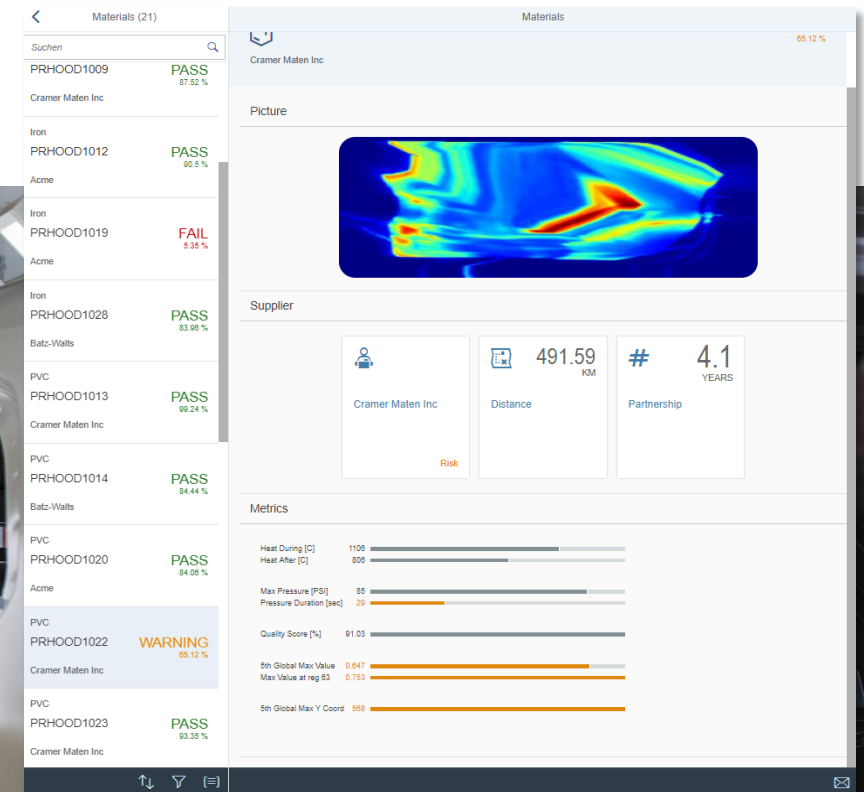
**Monitor &
orchestrate
the lifecycle**

The Foundation of the AI Assembly Line



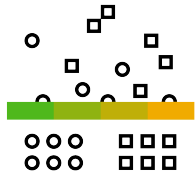
Predictive quality in manufacturing plant

Automotive

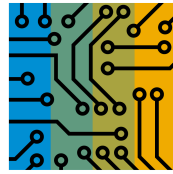


Predictive quality in manufacturing plant

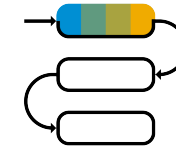
The business objective: improving Quality Management process



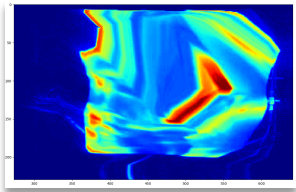
Big and Diverse
Data



Applied
Intelligence



Reimagined
Business Processes



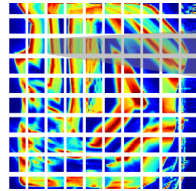
IR images of
components

PRH0001007	1,103	803
PRH0001008	1,100	800
PRH0001009	1,100	800
PRH0001010	1,100	800
PRH0001011	1,100	800
PRH0001012	1,100	800
PRH0001013	1,099	799
PRH0001014	1,100	800
PRH0001015	1,102	802

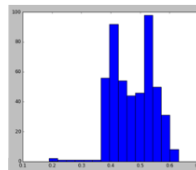
Pressure sensor
measures

Table Name:				
PPARAM				
Columns Indexes Further Properties Runtime Information				
	Name	SQL Data Type	DL...	Col
1	MATERIAL_ID	NVARCHAR	10	STF
2	HEAT1	INTEGER		INT
3	HEAT2	INTEGER		INT
4	PRESSMAX	INTEGER		INT
5	PRESSDUR	INTEGER		INT

Material
Master

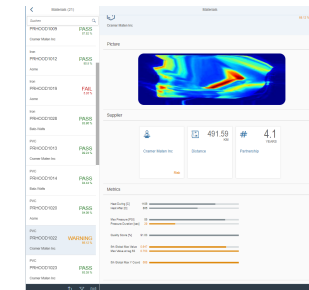


ML-based extraction
of image features



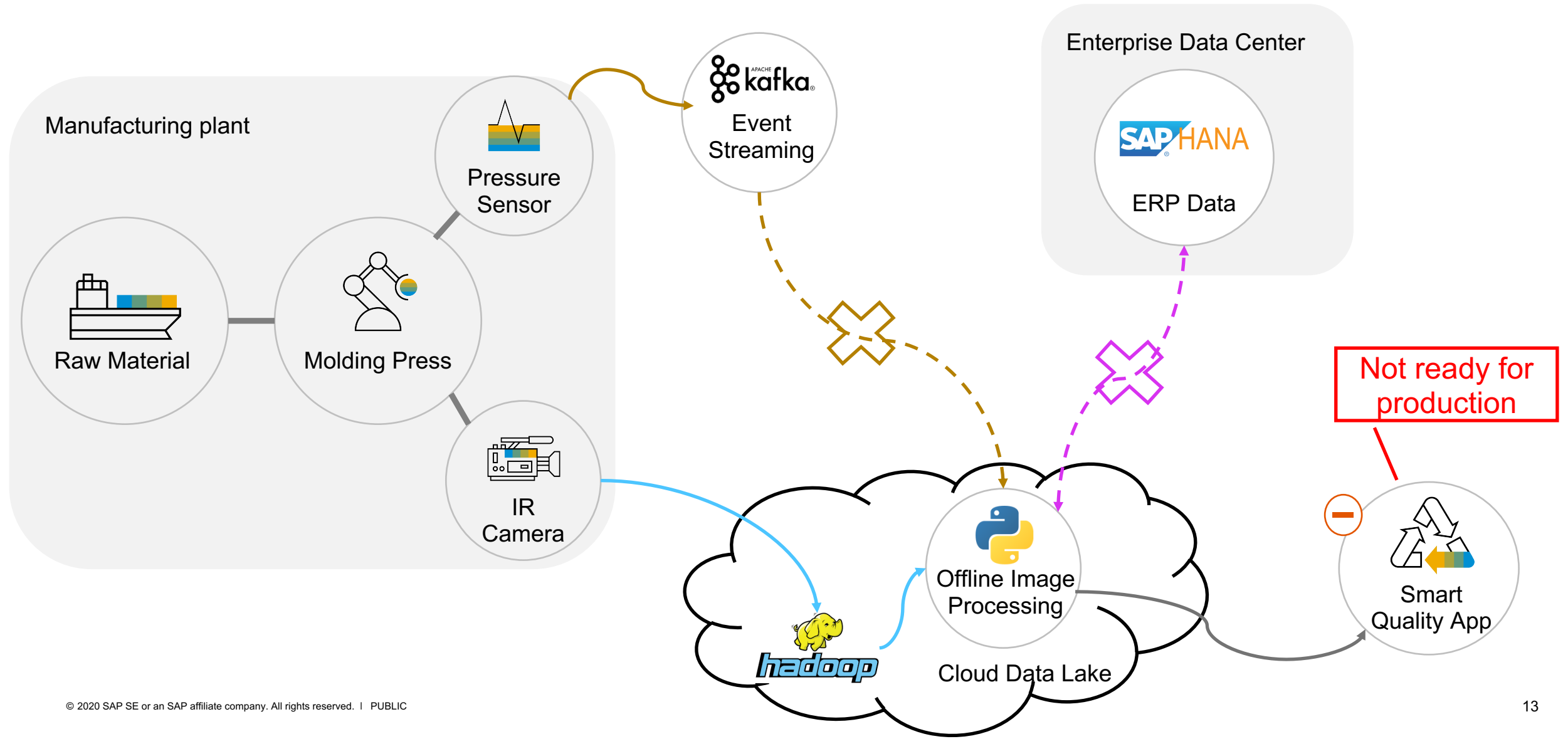
Predictive Analytics

Smart Quality App



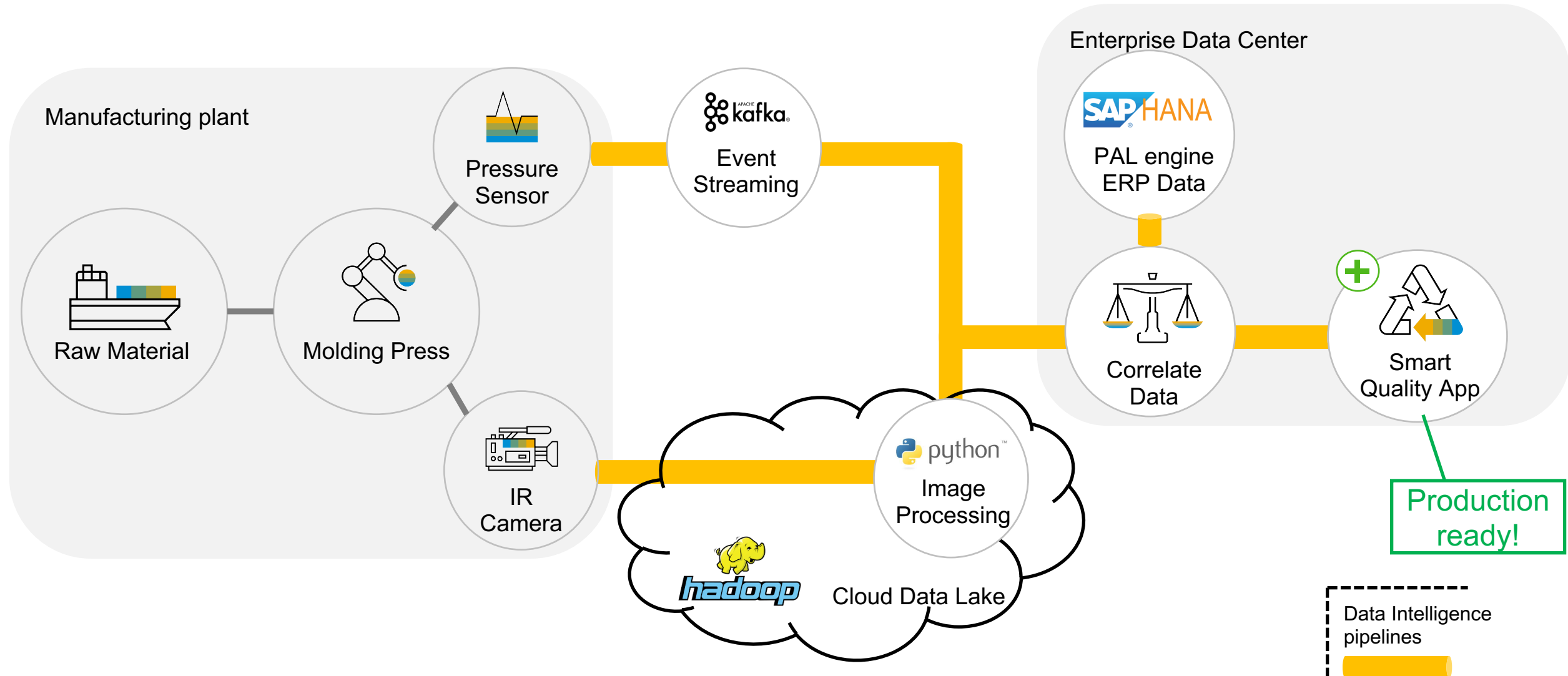
Predictive quality in manufacturing plant

The prototype without Data Intelligence: could not go beyond experimental stage



Predictive quality in manufacturing plant

The project with Data Intelligence: Data Science streamlined across the landscape!



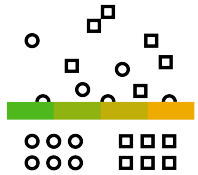
Improve customer experience with computer vision

Discrete industries and retail

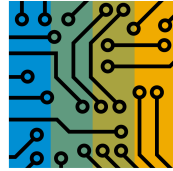


Improve customer experience with computer vision

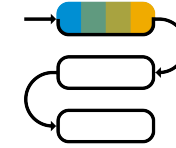
Objective: Enhance customer experience with visual product search



Unstructured data



Applied Intelligence



Reimagined Business Processes



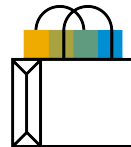
Unknown product



Apply computer vision to automatically identify products



Only visual information (e.g. smartphone picture) available



Attract more customers and simplify product search

Intelligent app for automated product recognition



Improve customer experience with computer vision

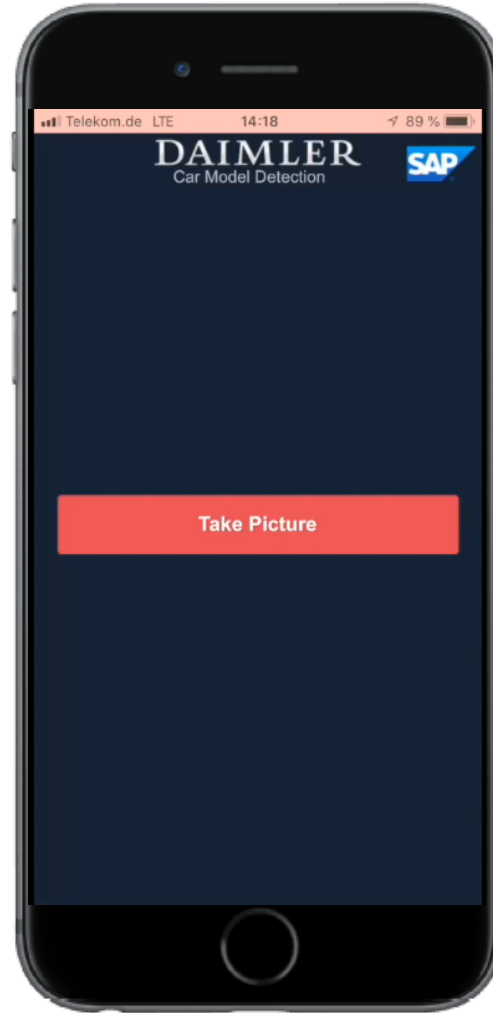
1 Identify your dream car



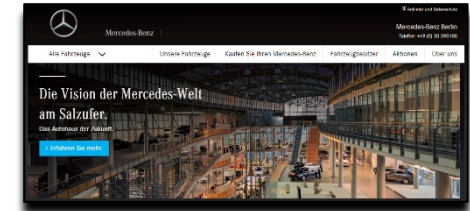
2 Object Detection Model



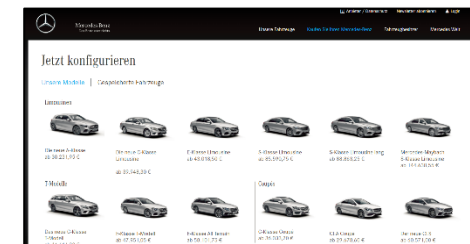
3 Classification Model



4 Find local car dealer



5 Configure your dream car



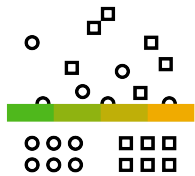
Automated completion of sales orders

Manufacturing

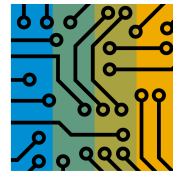


Automate completion of sales orders in B2B scenarios

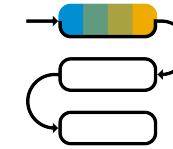
Objective: Accelerate sales order processing



Business data



Applied Intelligence



Reimagined Business Processes



Historic sales order data



High volume of sales orders with incomplete information (e.g. product category, manufacturing site)

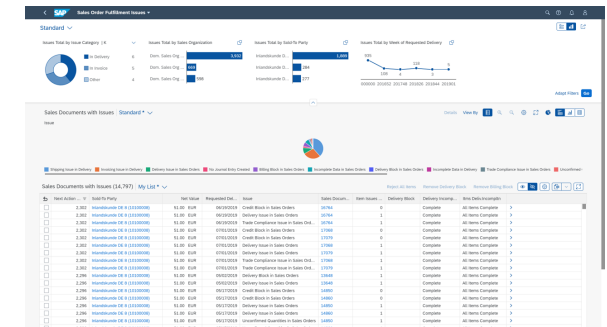


Pre-built AI business service to complete missing sales order fields



Streamline data integration, model monitoring and continuous training

Automated completion of sales orders via embedded intelligence



Summary: Sales Order Completion powered by Machine Learning

Business Background

15 Million Sales Order Items created per year at global chemicals company

- 10% are incomplete
- High effort to complete
- Delays in order fulfillment

Business Value of ML-powered SAP solution

Automate sales order completion

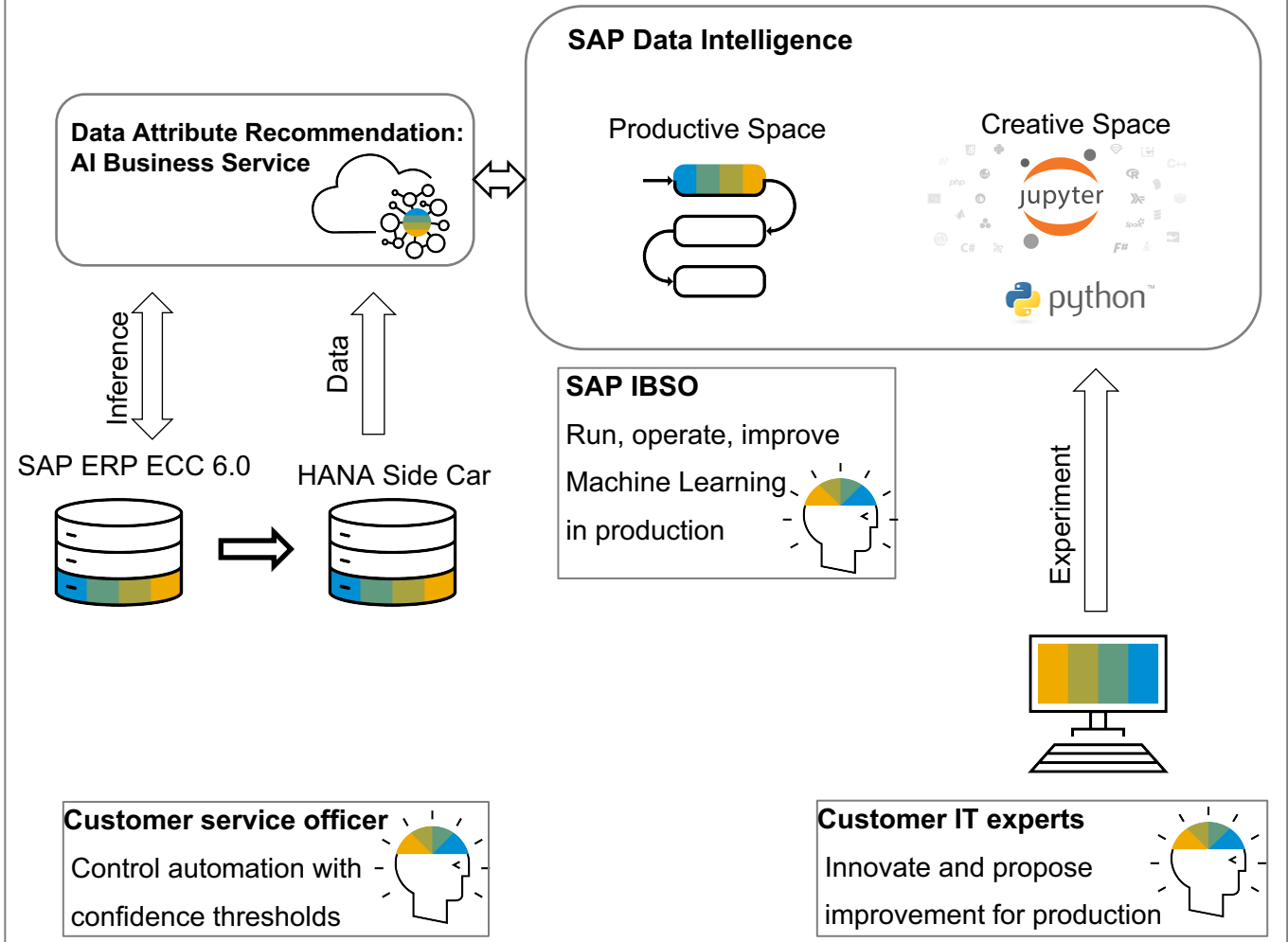
- Reduce manual efforts
- Ensure faster processing
- Run Machine Learning at scale in production

Project Scope

Run Machine Learning end-to-end in production

- Build Pipelines for Training, Monitoring, Lifecycle
- Build ECC Backend Integration
- Continuously improve Machine Learning models

Technology landscape and involved teams



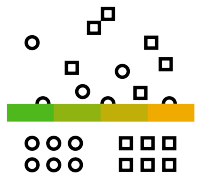
Predictive maintenance of energy assets

Utilities and asset-intensive industries

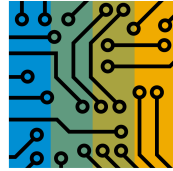


Predictive maintenance of energy assets

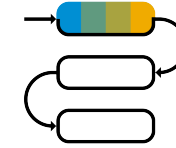
Objective: Optimize availability and maintenance of wind turbines



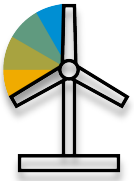
Big and Diverse
Data



Applied
Intelligence



Reimagined
Business Processes



Sensor data:
Rotor/wind speed,
power, external
temperature, oil
temperature)



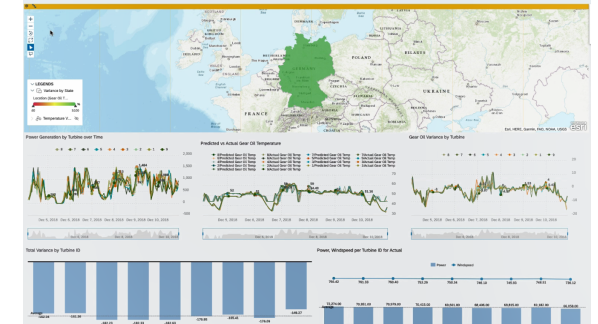
Asset Master Data



Financial Data



Use ML to simulate
and predict key factors
of wind turbines



Early detection of technical
failures, identify underperforming
turbines, and discover potential
savings

Applications (11)



Audit Log Viewer



Connection
Management



Customer Data
Export



License
Management



Metadata Explorer



ML Scenario
Manager



Modeler



Monitoring



Policy Management



System
Management



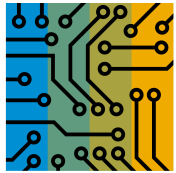
Vora Tools

SAP Data Intelligence – Enterprise AI meets Intelligent Information Management

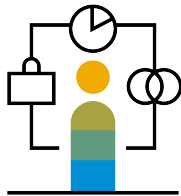


Data Pipelining

Flexible pipelines spanning structured / unstructured / streaming, batch / (near-)real-time, OLTP and OLAP, across any cloud and on-prem deployment.

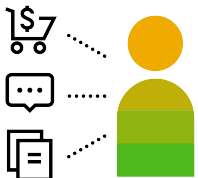


Distributed and Heterogeneous Data Processing



Model Lifecycle Management

Data discovery and preparation, notebooks, deployment, (re)training, serving and monitoring.



Centralized Metadata Governance

Metadata crawling, browsing and profiling; data lineage, auditing and data anonymization / masking.

Further Resources

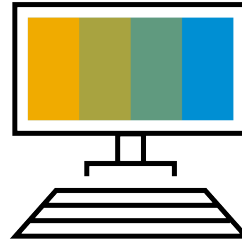


Questions?

SAP Community: [Ask questions and interact with experts](#)

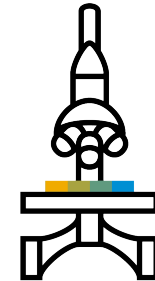
Email: Reach out to dataintelligence@sap.com for any questions

SAP Community Topic Page: <https://community.sap.com/topics/data-intelligence>



Essential Assets

- [Product Website](#)
- [Product Roadmap](#)
- [Solution Brief](#)
- [Partner Edge](#)
- [Use Cases](#)
- [Help Portal](#)



Getting Started

- [openSAP course](#)
- [Blog Posts and Tutorials](#)
- **Blog:** [SAP Data Intelligence: Next Evolution of SAP Data Hub](#)
- **Blog:** [Development News for 3.0](#)

Thank you.

Contact information:

Philipp Zaltenbach

Product Manager – SAP Data Intelligence

Email: philipp.zaltenbach@sap.com

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