

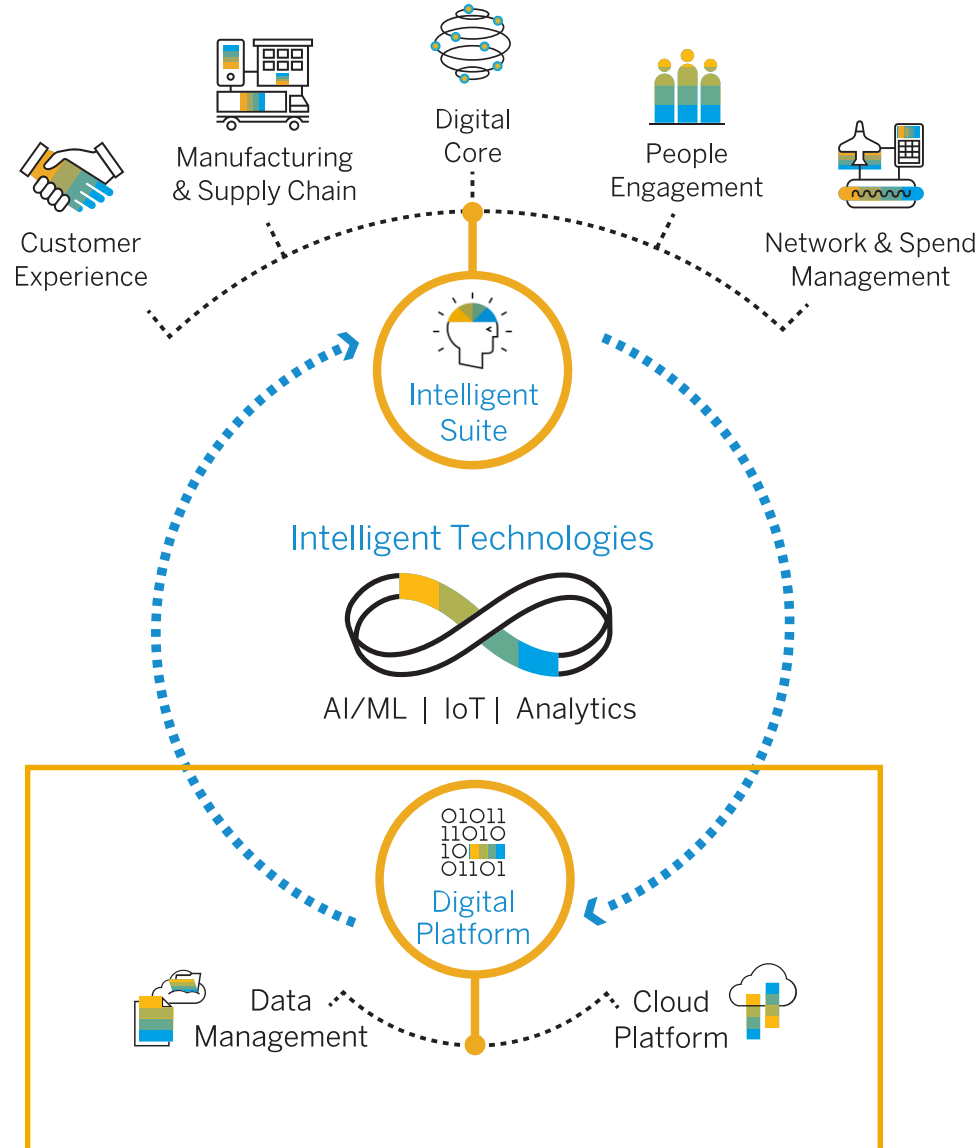
ASUG83934: I have SAP HANA, Why Would I Need SAP Data Hub

Ginger Gatling, SAP
PUBLIC

SAP Strategy – Deliver the Intelligent Enterprise

THE INTELLIGENT ENTERPRISE features **3 KEY COMPONENTS**:

- 1 Intelligent Suite
- 2 Digital Platform
- 3 Intelligent Technologies



2 Digital Platform

SAP DATA HUB

Extract value from distributed data assets.

Discover, refine, govern, orchestrate any type, variety, volume of data across distributed landscape

A master conductor orchestrates diverse sounds from disparate sources



into beautiful music

SAP Data Hub orchestrates diverse data from disparate sources



into reimagined business processes



The Data-Driven Journey Towards the Intelligent Enterprise



Cloud Platform

Best-in-class business platform

to accelerate new business application development, extensions, and integration across cloud, on-premise and edge devices



Data Management

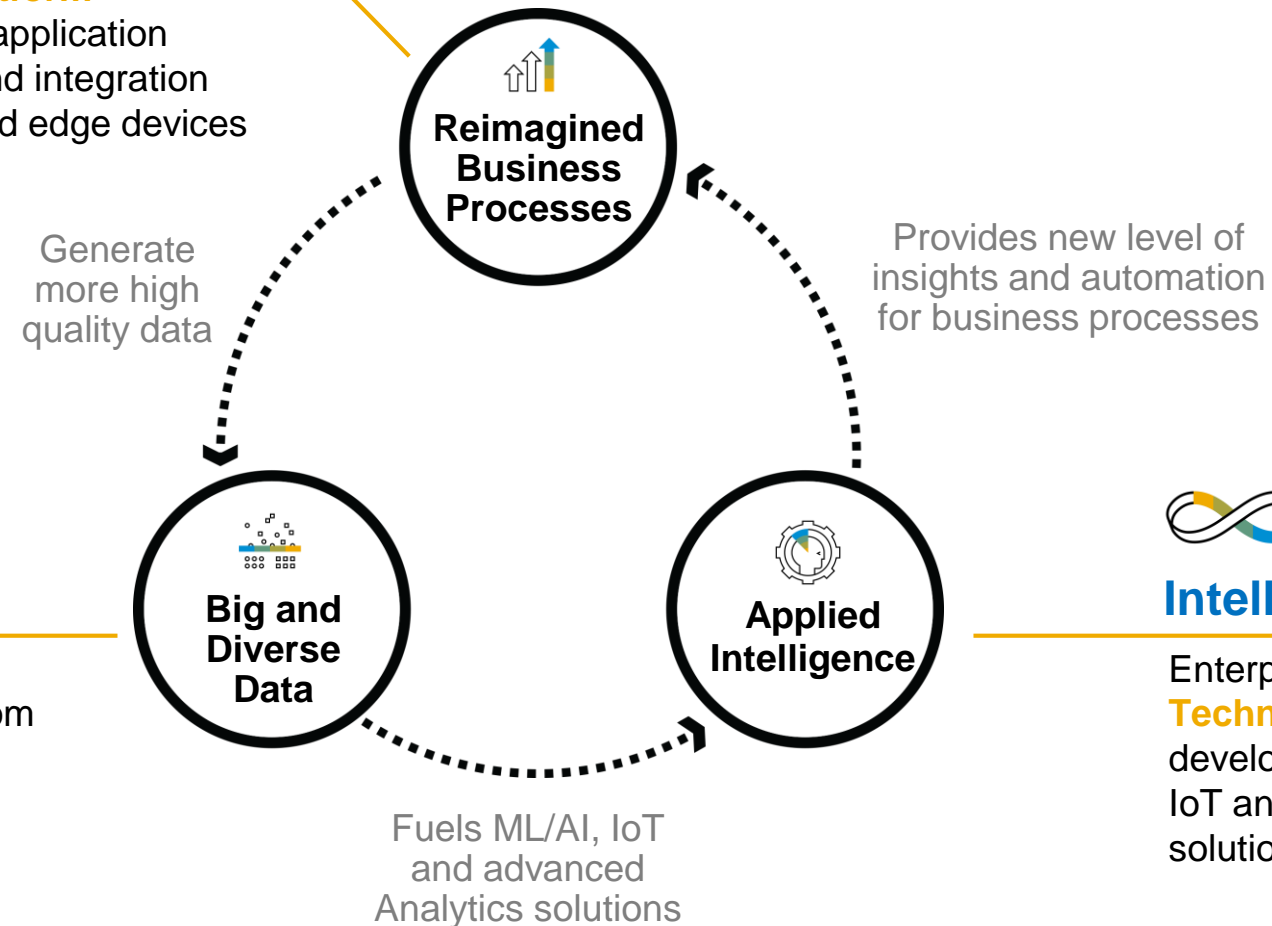
Unified data management

to capture real-time value from different types of data



Intelligent Technologies

Enterprise Ready **Intelligent Technologies** to experiment, develop, support and scale ML/AI, IoT and advanced Analytics based solutions in one integrated offering



Use SAP Data Hub to reimagine your business processes



Use **SAP Data Hub** to reimagine your business processes using ...

Business Application Transformation



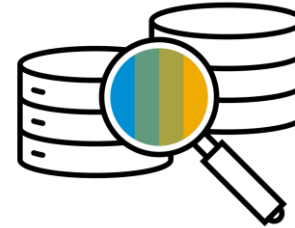
Streamline innovation initiatives around Business Applications, supporting enterprise transformation programs

IoT Ingestion and Orchestration



Transform IoT event streams into enterprise-ready data, and derive actionable insights

Data Warehousing



Build a multifaceted data warehouse, across diverse and distributed data assets

Data Science and Machine Learning



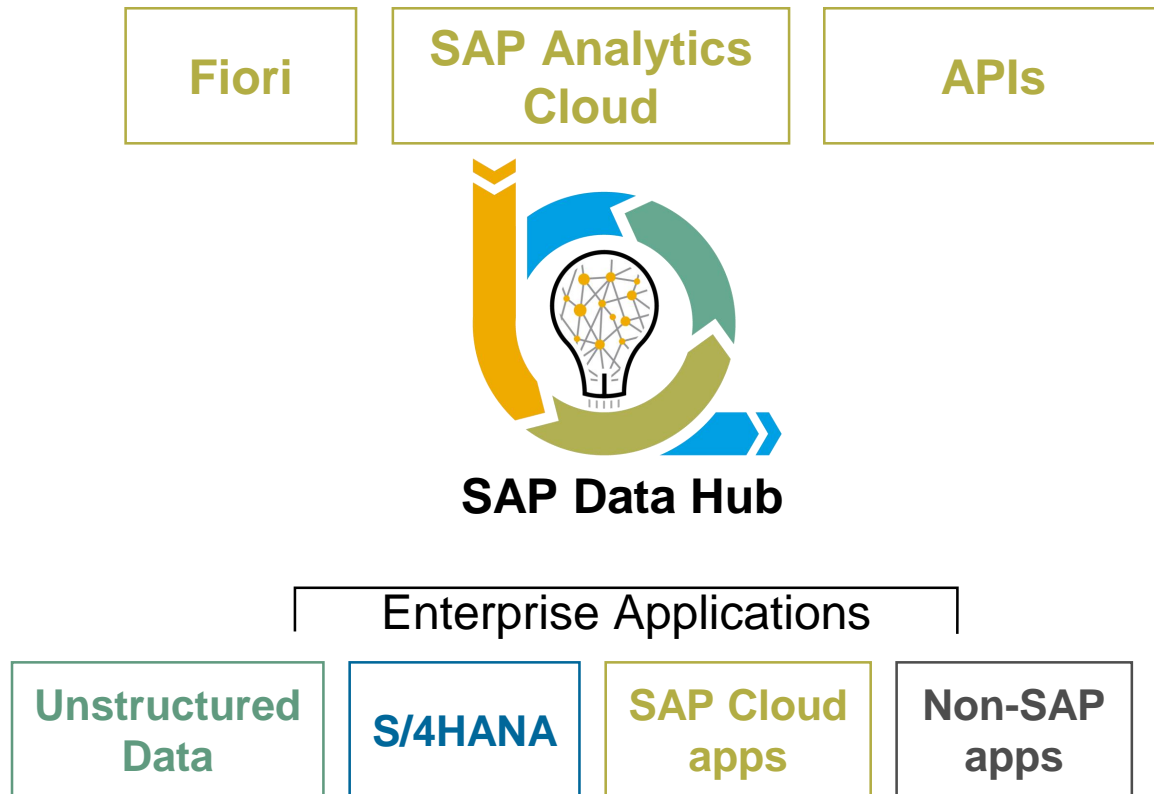
Streamline data science and machine learning, from modeling and development to operations, across all enterprise data assets

Metadata Catalog and Governance

Automate metadata discovery, understand data sources, prepare and govern according to data standards, privacy, and security

Business Application Transformation and SAP Data Hub

Data Hub to streamline innovation around business applications



DISCOVER

- Acquire data from different SAP and non-SAP applications, cloud and on-premise

REFINE

- Correlate cleansed structured data with speech, text unstructured information
- Apply analysis and predict behavior, process outcomes and anomalies

GOVERN

- Centralized data access and control policies
- Data anonymization

ORCHESTRATE

- Scheduling, workflow, data pipelines across enterprise and external data
- Scaled serverless computing

Customer Risk Intelligence with S/4 HANA Cloud

The business objective: safeguard sales process via fine-grained risk scoring

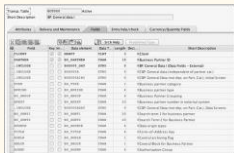
Big and Diverse Data

Applied Intelligence

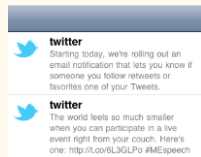
Reimagined Business Processes



Credit Management Data



Business partner master data



Twitter feed



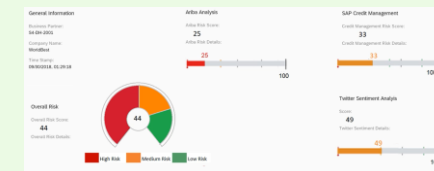
Ariba risk score



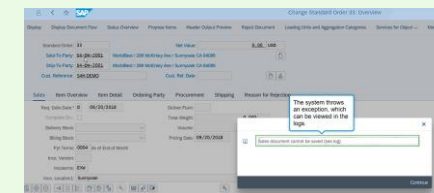
Sentiment Analysis



ML-driven scoring algorithm



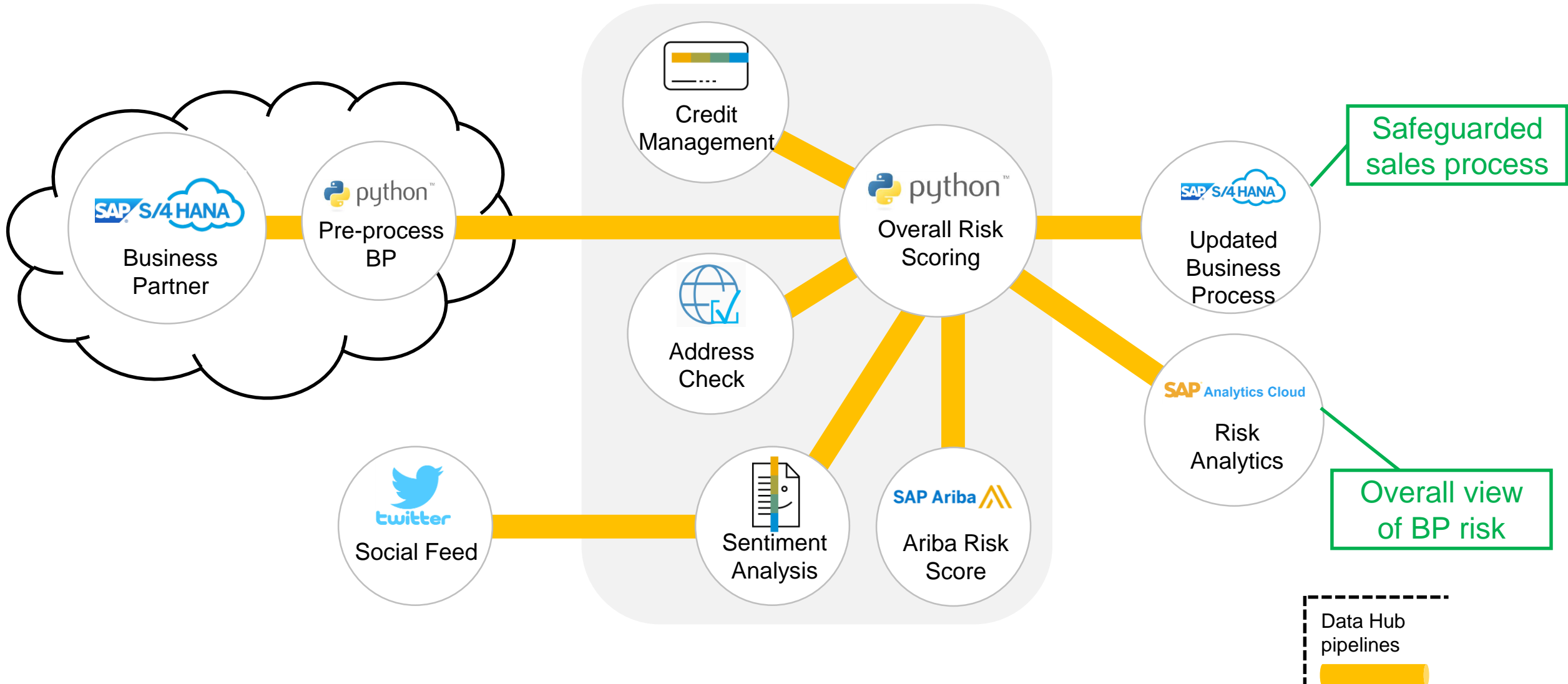
Risk score analytics



Risk-safe sales process

Customer Risk Intelligence with S/4 HANA Cloud

The implementation: customer risk scored across all disparate data assets!



IoT Data Ingestion and Orchestration and SAP Data Hub

Integrate and process disparate data from messaging systems and high-volume cloud storages

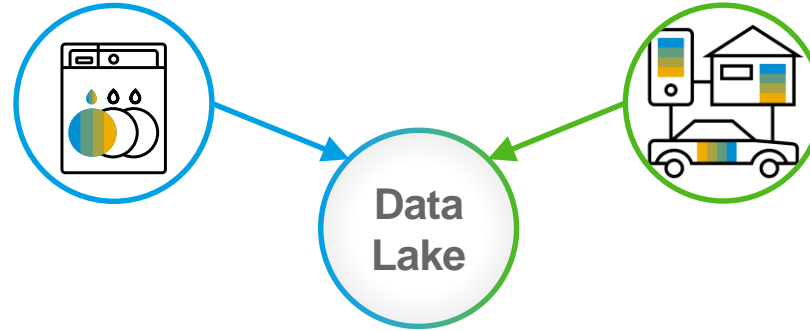


- Tackle the challenge of integrating and analyzing vast quantities of raw data and events from disparate semi-structured sources with low-level semantics and no business context
- Solve the point-to-point challenge of distributed heterogeneous environments spanning messaging systems, cloud storages, SAP data management solutions, and enterprise apps
- Event-driven pipelines scaling to executions of many pipelines in parallel, at any time

Customer-driven Product Insight through IoT ingestion

The problem

Home4You manufactures **Smart Dishwashers** that collect sensor and machine data.



They also maintain an **IoT Collection** of user behaviors.

Feeding this information to the **Data Lake** will help them build better dishwashers

But there are some problems:

6 million+ devices generated **>16 TB** streaming data a day

The data collected isn't easily understood



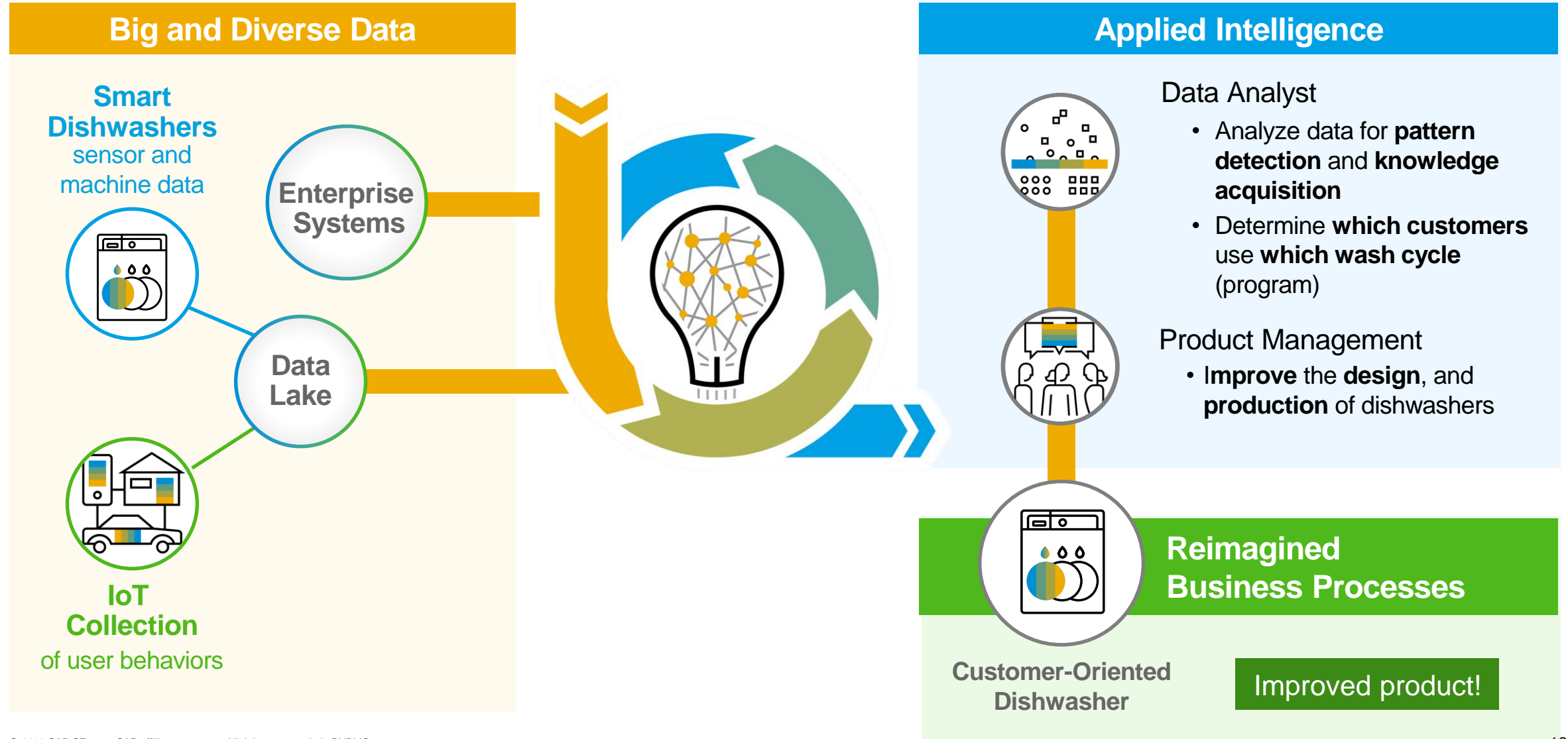
Incoming data **isn't quality checked**

Enterprise data **isn't connected.**

The enterprise is fragmented. There are operational silos. No feedback loop between data scientists and operational systems.

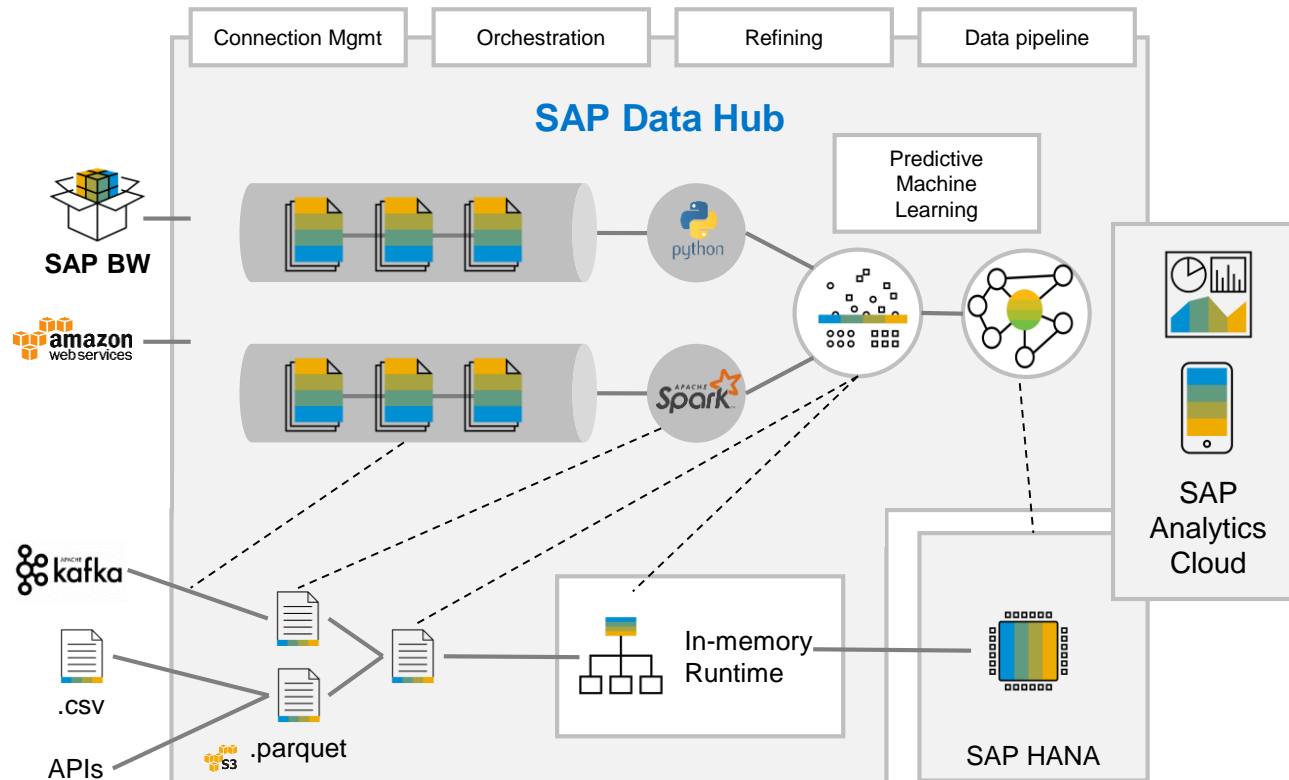
Customer-driven Product Insight through IoT ingestion

The solution with SAP Data Hub



Customer-driven Product Insight through IoT ingestion

The architecture and its capabilities



DISCOVER

- Connect any distributed and heterogeneous enterprise data
- Ingest data via streaming, batch, replication

REFINE

- Cleanse, validate, enrich data
- Machine learning algorithms
- Relate IoT data to structured data

GOVERN

- Catalog metadata from IoT, BW, and other applications
- Data lineage to data origins
- Data anonymization for privacy

ORCHESTRATE

- Define, execute and control modular data pipelines
- Enable real-time action and decision making faster with less costs

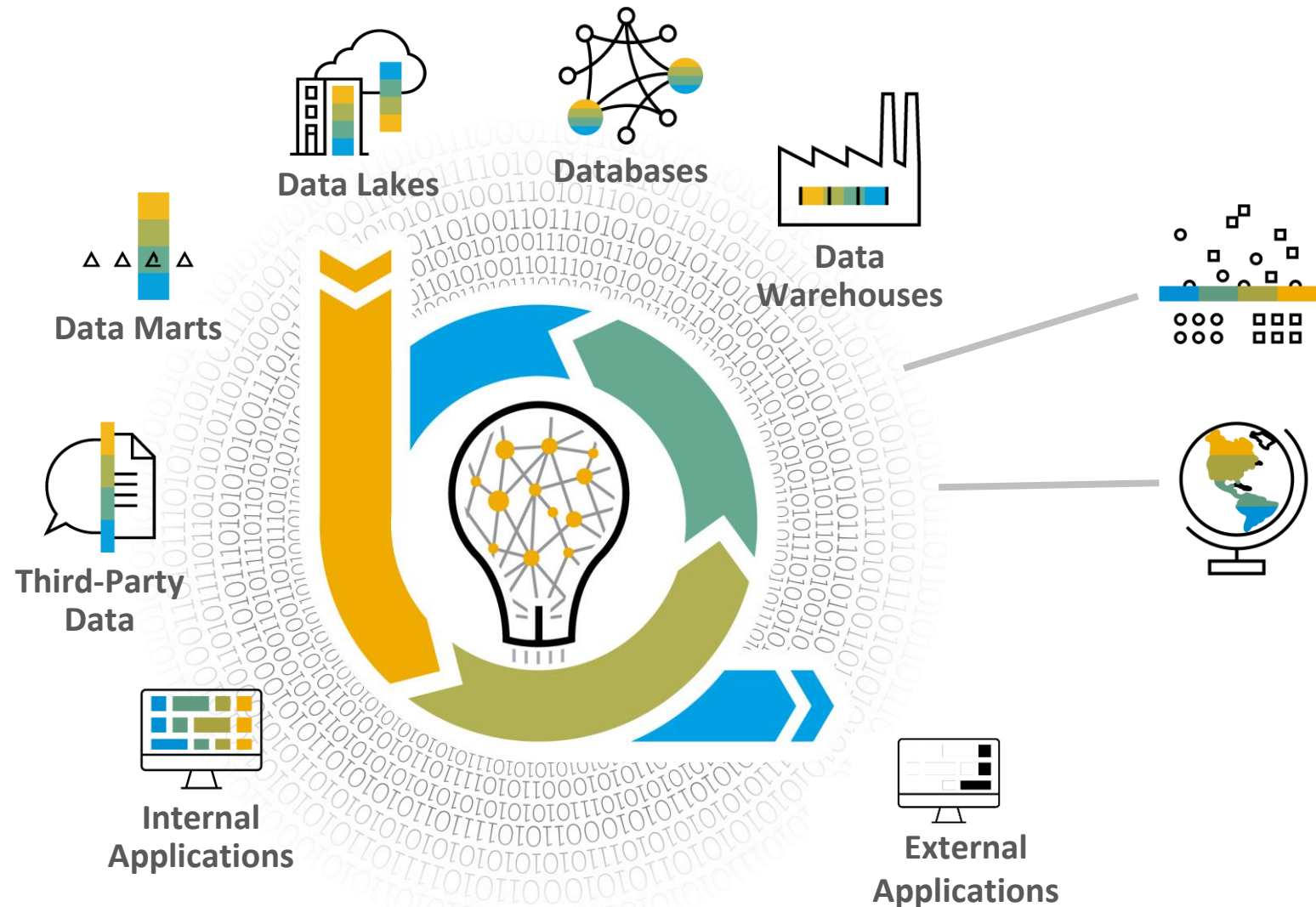
Extract Value From Distributed Data Assets

Discover, Refine, Govern, Orchestrate

Using SAP Data Hub



SAP Data Hub Simplifies Access to Distributed Data Assets



**No lift and shift.
No storing.
No point-to-point.**

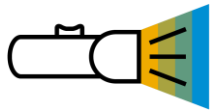
No matter the type.

No matter the location.

No Silos.



SAP Data Hub Maximizes Value from Distributed Data Assets



Discover

your data landscape and its interconnections.



Refine

enrich, transform, reuse, curate



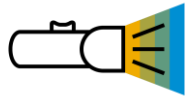
Govern

and secure data assets transparently with compliance



Orchestrate

your data using modular data pipelines

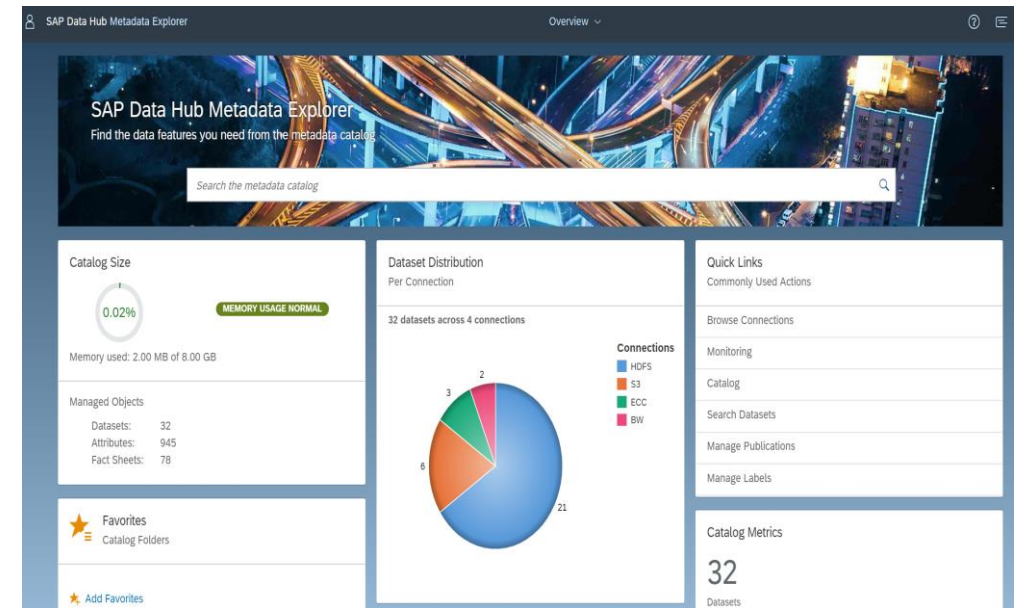


DISCOVER

Gain a clean view of your data landscape interconnections, no matter where the data lives

 Data Ingestion Streaming	 Data Ingestion Batch	 Data Ingestion Replication
 Data Preparation	 Event Stream Integration	 Speech Recognition
 Data Profiling	 Landscape Management	 APIs

Unified view of data landscape



Evolve data models more quickly in a highly visual environment



REFINE

Transform data assets into trusted information with a comprehensive set of data quality operators

FIND HIDDEN PATTERNS



Machine Learning



Data Cleansing



Data Ingestion Replication

ENRICH DATA



Data Masking



Data Quality



Data Transformation



Custom Code

ADVANCED ANALYTICS ENGINES



Unstructured Processing
(speech/image)



Text Analytics

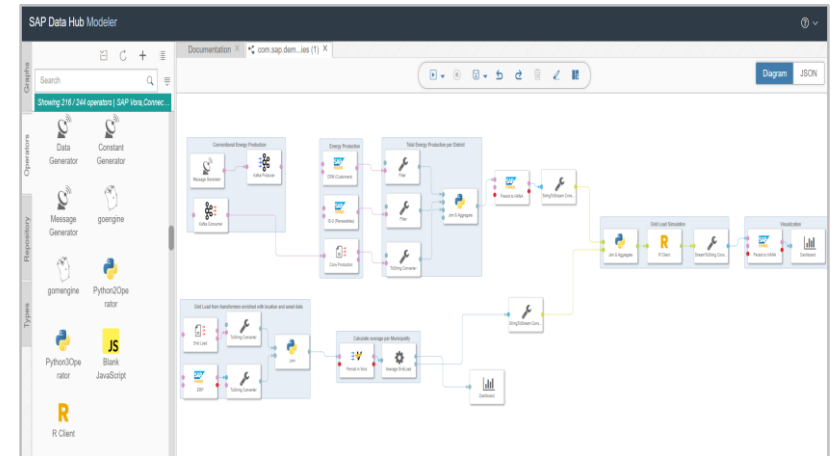


Image Processing



Predictive Analytics

Data Pipeline



Apply robust operators to refine and transform data



GOVERN

View, understand, and share your data, and see how it impacts data models and results downstream

METADATA
MANAGEMENT



**Metadata
Cataloging**



**Data
Tagging**

DATA ACCESS
AND SECURITY



**Data
Anonymization**



**Authorization
& Access**



Security

DATA LINEAGE &
IMPACT ANALYSIS



**Data
Preparation**

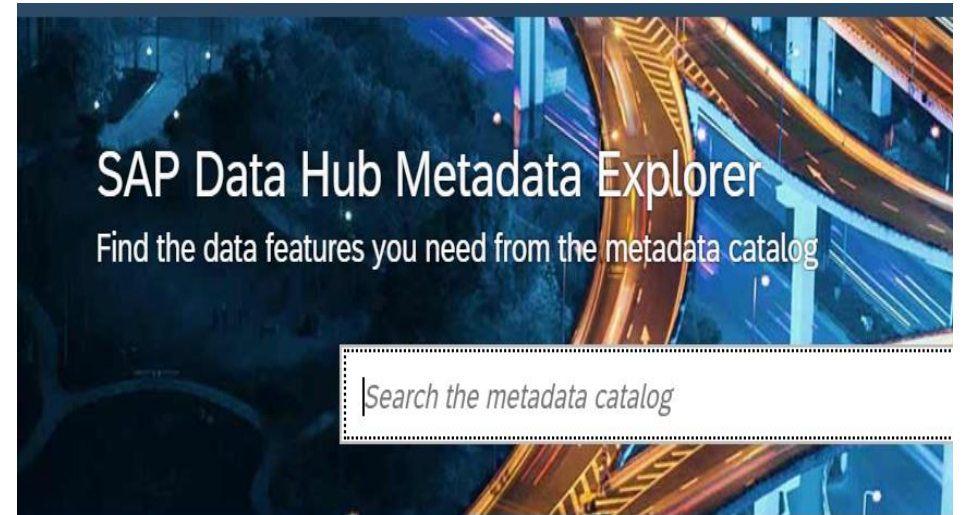


Audit



**Analyze Data
Lineage**

Metadata Explorer



Analyze your data, where it comes from, and how it is used



ORCHESTRATE: Connect to any source

Modular Data Pipelines Connected to Any Source Using Diverse Processing Engines and Distributed Infrastructures



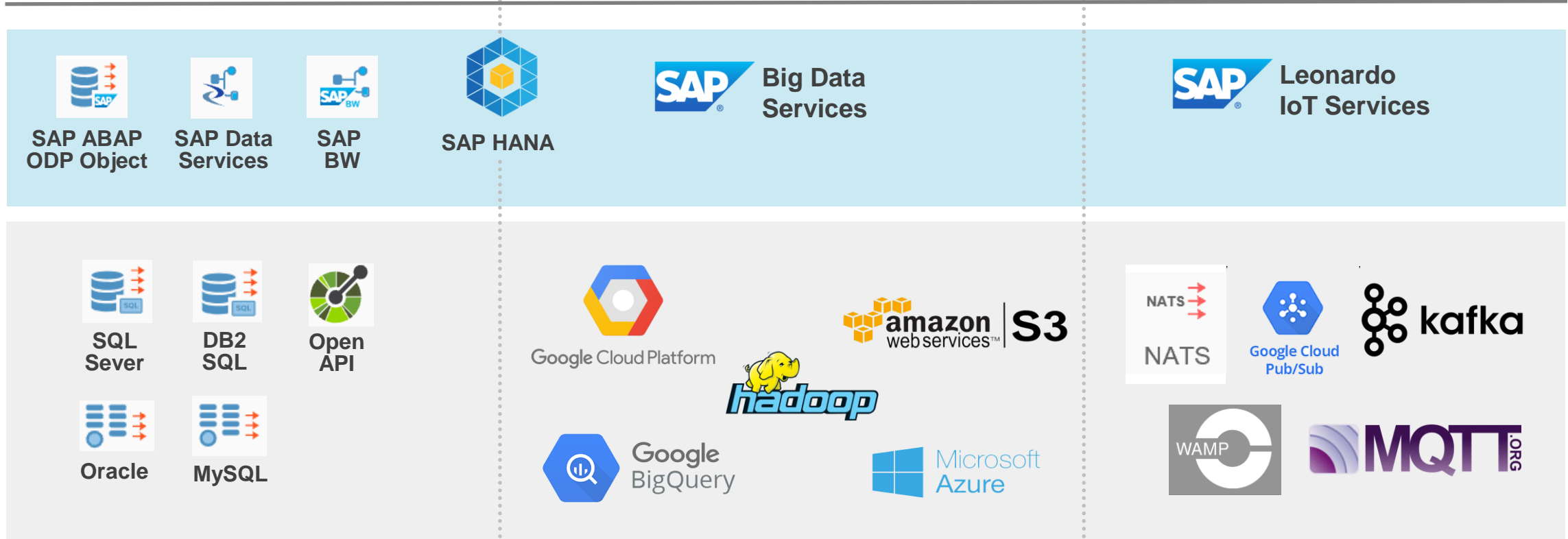
Structured Data



Unstructured Data



Streaming Data





ORCHESTRATE: Diverse processing engines

Modular Data Pipelines Connected to Any Source Using Diverse Processing Engines and Distributed Infrastructures

SAP
ENGINES



**SAP HANA
Machine Learning**



SAP HANA Graph



**SAP HANA
Spatial**



**SAP HANA Text
Analytics**



**SAP Leonardo
Machine Learning**

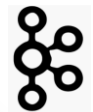


**SAP Data
Services**

OPEN SOURCE
ENGINES



**Google Cloud
Pub/Sub**



Apache Kafka



**APACHE
Spark**



{REST}
RESTful
Web Services



APIs



python



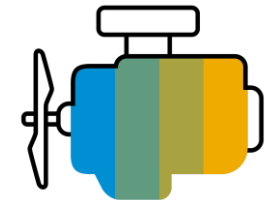
JavaScript



TensorFlow



OpenCV



Modular Data Pipelines, Open and SAP Engines, Distributed Infrastructures

Big and Diverse Data



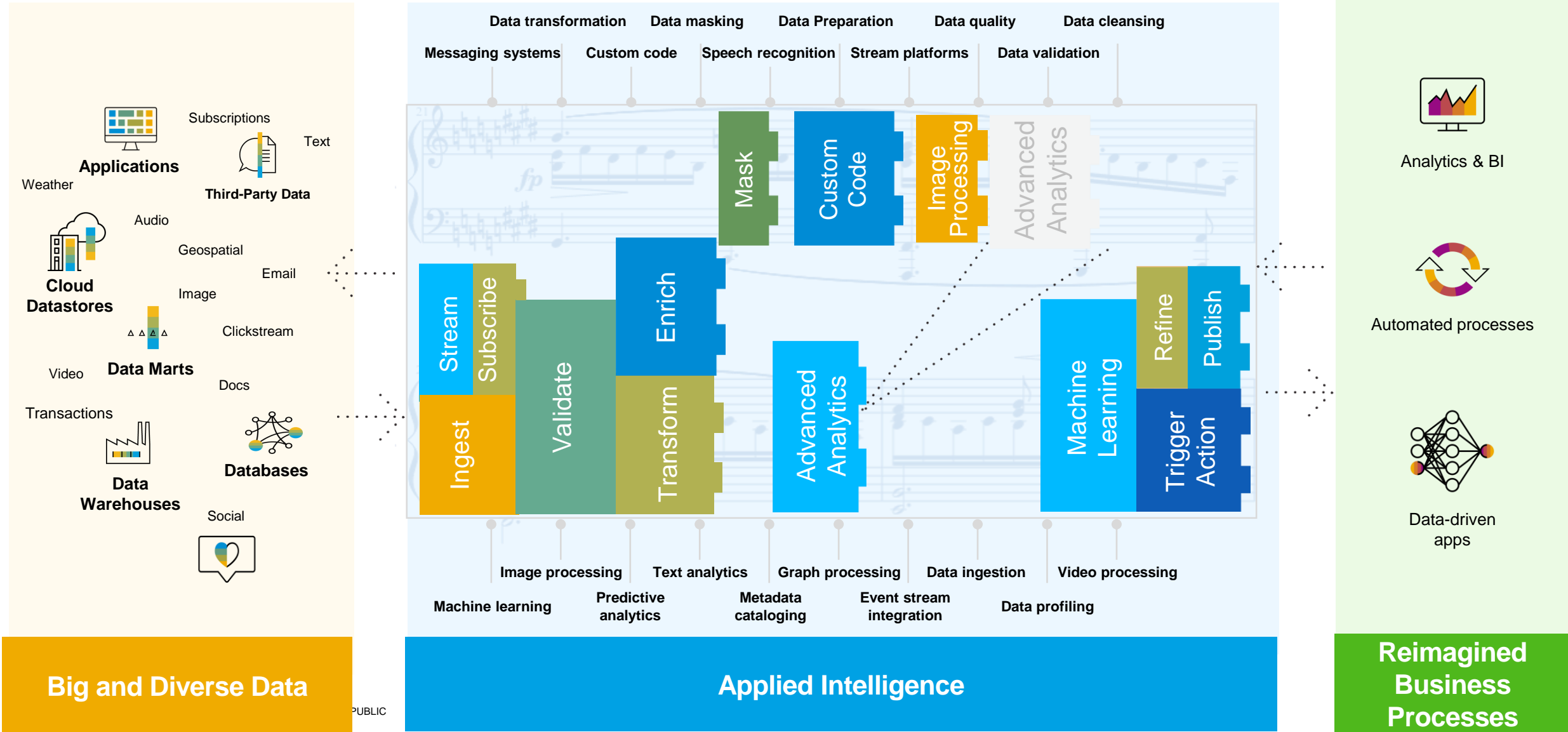
Applied Intelligence

Reimagined Business Processes



SUMMARY: SAP Data Hub extracts value from distributed data assets

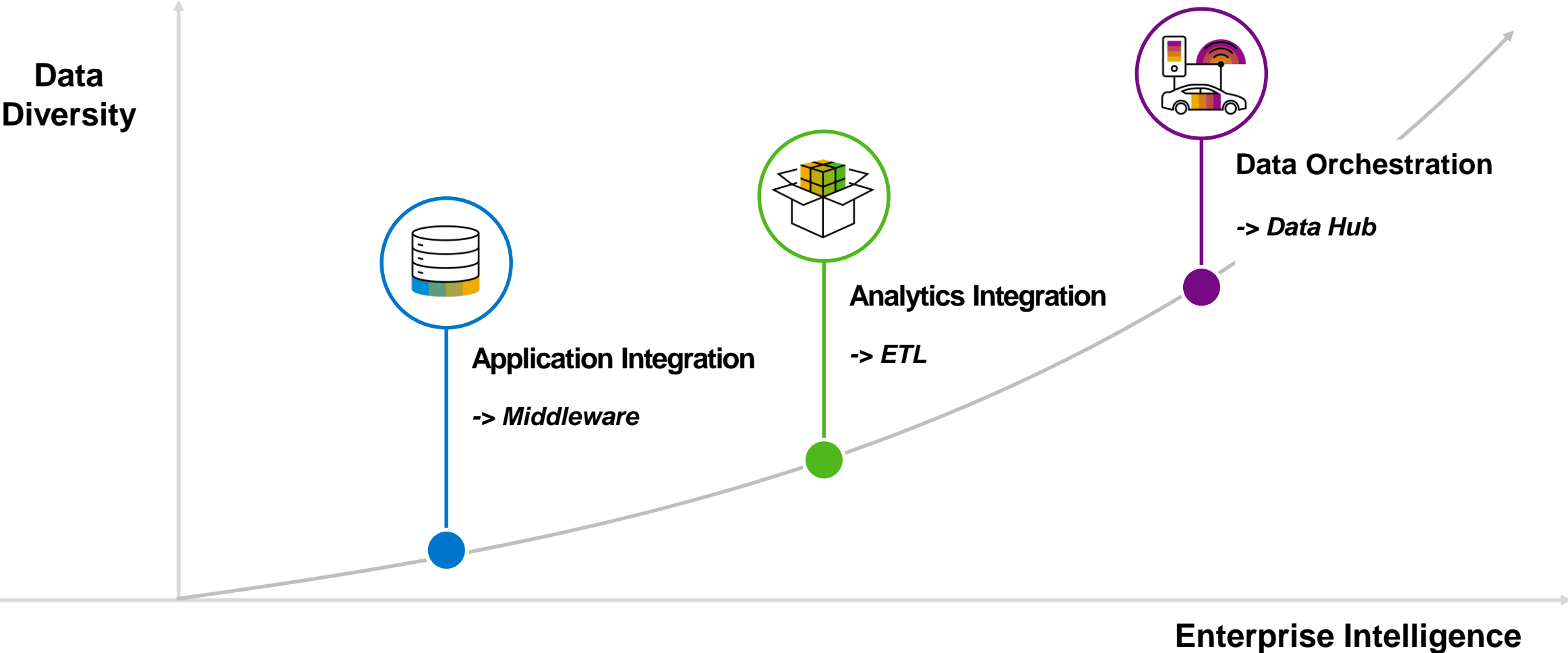
Streamlining data-driven innovation for the intelligent enterprise



Evolution of Data Management in Enterprise Landscapes

SAP Data Hub

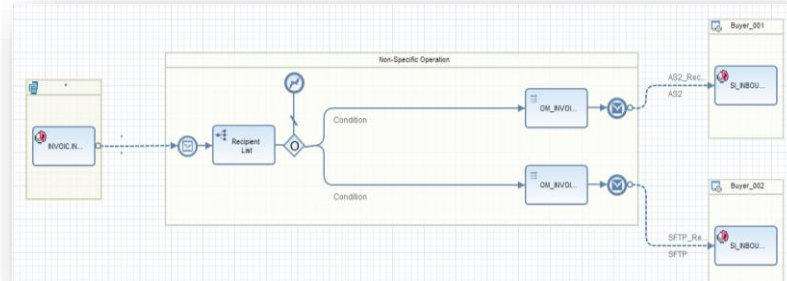
Multi-faceted data requires extended integration, orchestration and processing capabilities



How data management domains complement each other



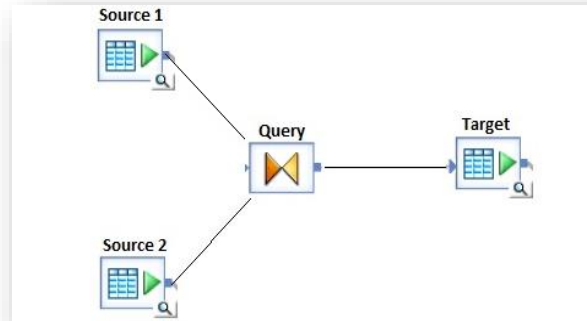
Application Integration ESB Integration Flows



- Message-driven
- Ensure transactional consistency and **reliable actions**



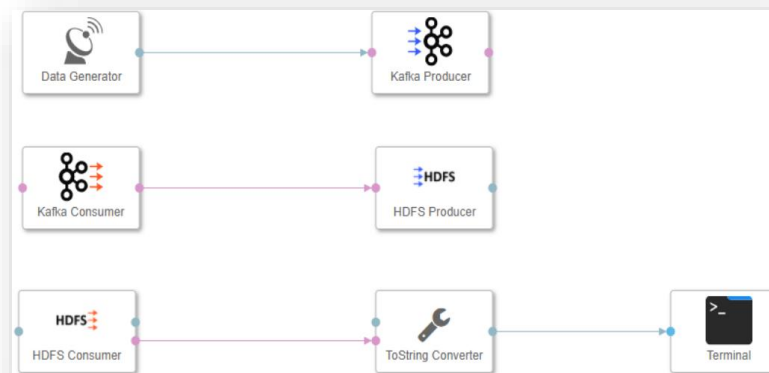
Analytics Integration ETL Data Flows



- Database-driven
- Ensure data quality and **reliable insights**



Data Orchestration Data Pipelines



- Mix message-driven, DB-driven, streaming, structured, and unstructured, etc...
- Build holistic data flows across domains, mixing data movement and distributed data processing (e.g. ML) to enable **actionable insights**
- Previous OLTP to OLTP and OLTP to OLAP flows remain relevant for their respective use cases.

Using SAP Data Hub with SAP HANA



SAP HANA



SAP Data Hub

- Engines:
 - Graph
 - Spatial
 - Machine Learning
 - Geospatial
 - Text Analytics
- Data Store

- Connect to HANA
- Utilize HANA engines (execution in HANA)
- Leverage diverse data sources and write back into HANA

I have SAP HANA, Why Do I Need SAP Data Hub....



- SAP HANA and SAP Data Hub together enable you to get the most out of your data, simplify visibility across your landscape, provide trust in intelligent data, with governance, security, compliance.
- SAP Data Hub data pipelines can execute on SAP HANA
- Beyond point to point, it is complex serverless data orchestration, pipelines are always running, scaling up and down depending on volume
- Discovers, refines, governs, and orchestrates any type, variety, and volume of data across your distributed data landscape.
- Leverage SAP engines and open source engines across distributed infrastructures, minimizing data movement.
- Accesses structured, unstructured, streaming data across all data types.

Next Steps

Find out more about
SAP Data Hub
sap.com/datahub



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Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:

<http://info.asug.com/2019-ac-slides>

Q&A

For questions after this session, contact us at ginger.gatling@sap.com

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