



SAP Datasphere: The *All-in-One* Business Data Platform

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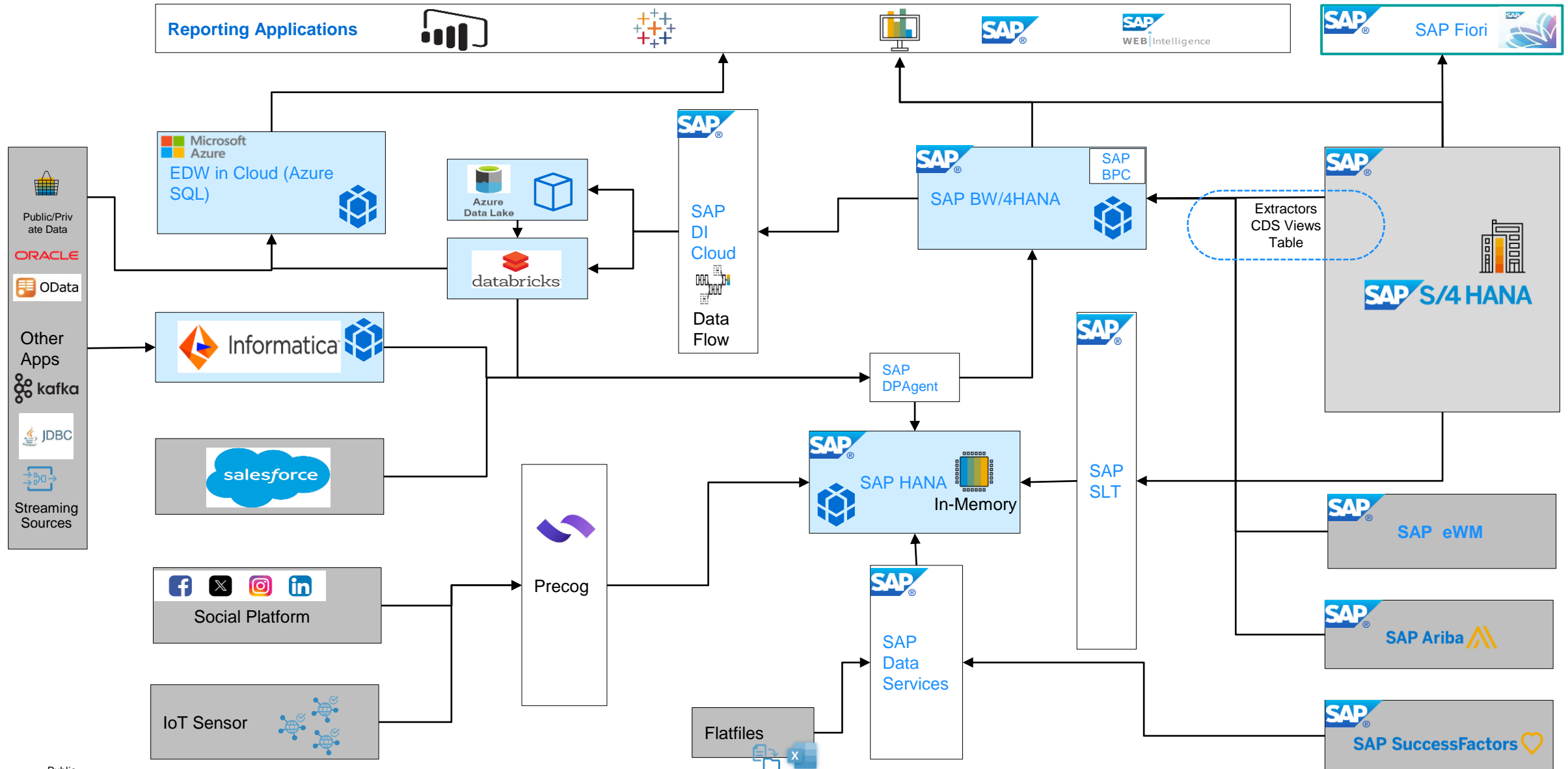
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Agenda

- Business Data Challenges.
- SAP Datasphere: Architecture Overview and Business Data Fabric.
- Key Capabilities
 - Spaces
 - Connectivity and Data Integration.
 - Data Modeling.
 - Business Semantics
 - Consumption of Models and Tight Integration for Analytics and Planning with SAC
 - SAP BW Bridge
- Quick Wins and Use cases
- What Next? And QA

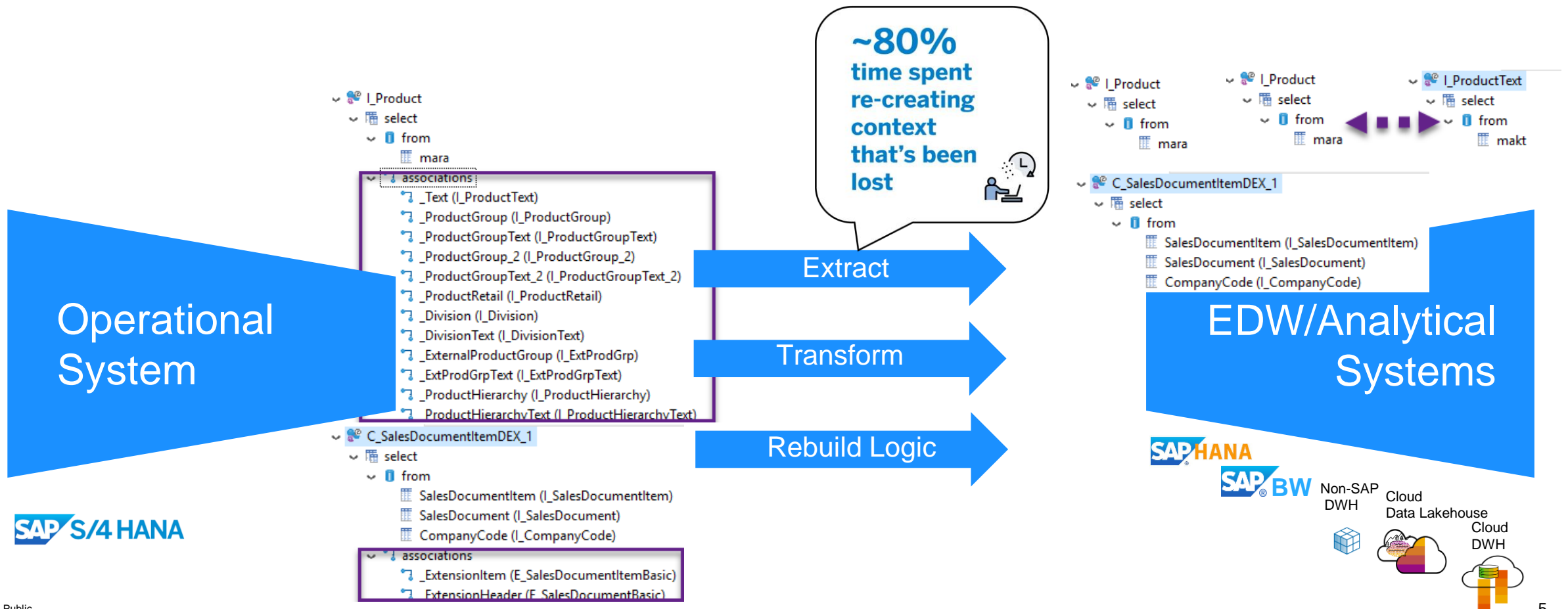
Organizations face complex and siloed data landscapes



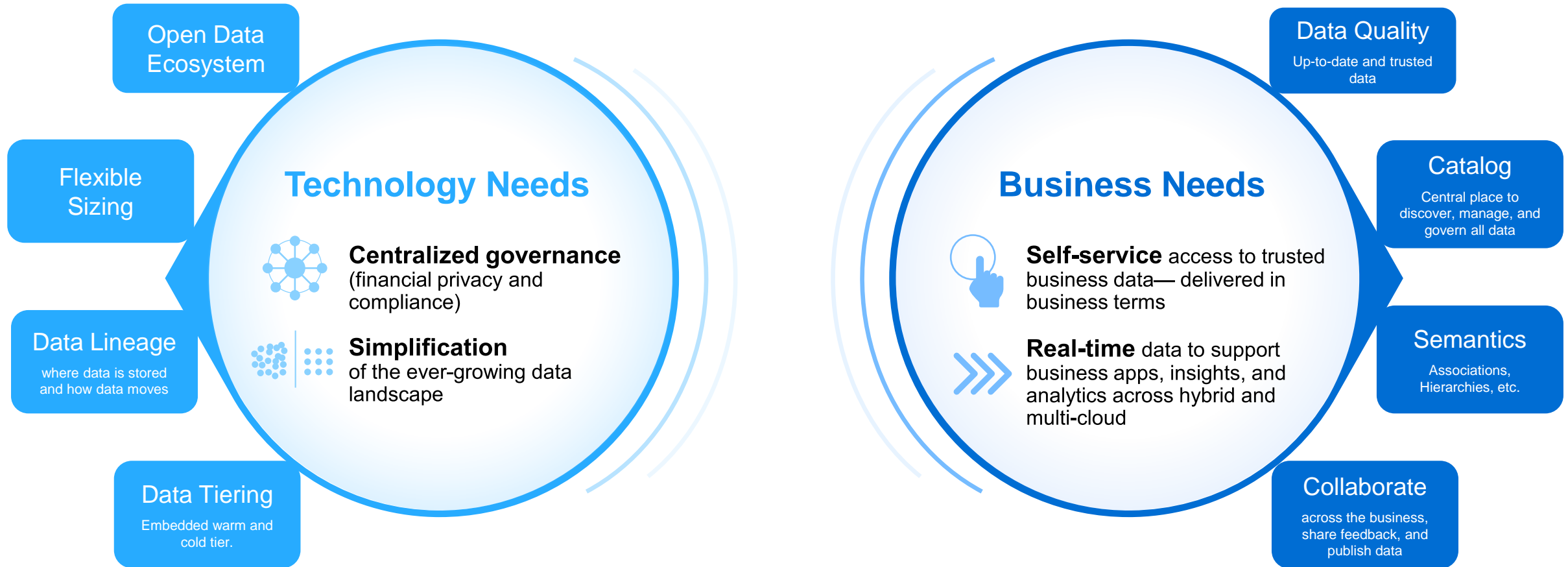
Authoritative Decisions = Data + Context/Semantic

Preserve Business Semantic/Context.

How it is done ?... too often



Universal yet opposing data needs for business and technology stakeholders



A light blue geometric shape, resembling a parallelogram with a diagonal cut, is positioned on the left side of the slide. It has a light blue fill and a thin white border.

Architecture Overview and Business Data Fabric

SAP Datasphere: An Open and Comprehensive Business Data Fabric Platform

Modeling for Everyone

Drag and drop solution allowing you to combine SAP and non-SAP sources. Move inefficient Excel workflows to the cloud SaaS solution.

Data Integration

Real-time replication and data federation from a variety of sources. Integrated with third-party tools as well.

Central Data Catalog

Improve data efficiency and data literacy with a SAP Catalog. Create a catalog of all your SAP data models and analytics.

SAP Data and Semantics Sharing

Distribute semantically enriched SAP data with SAP and third-party systems.

Data Marketplace

Enrich data projects with trusted industry data from thousands of providers with the SAP Datasphere Marketplace

BW Bridge

Leverage SAP BW data structures, transformations, customizations, and skills – quickly extending your SAP BW investments to the public cloud.

Affordable Data Storage

Leverage Datasphere storage options: in memory, HANA NSE, or Embedded HANA Data Lake.

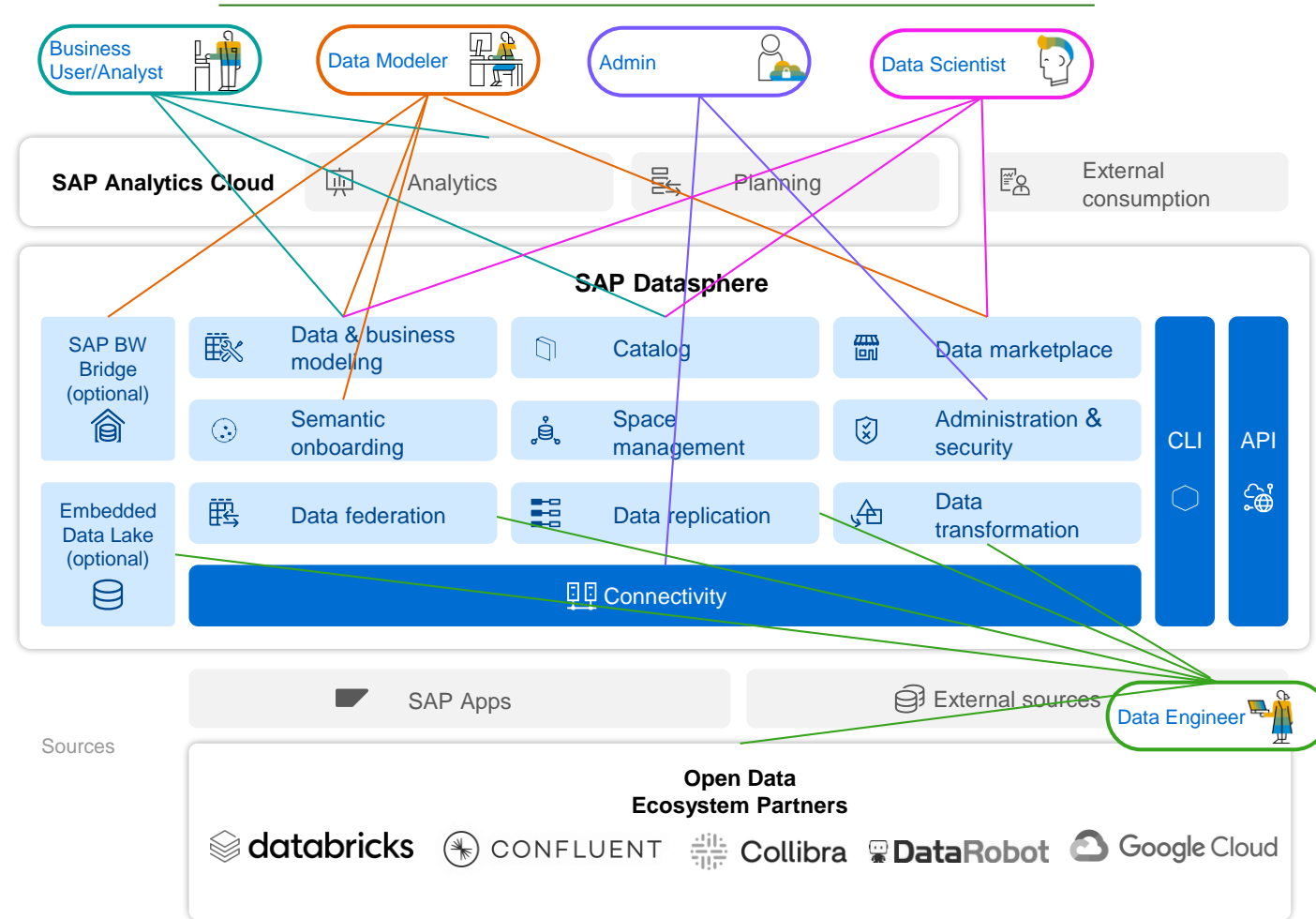
Open Data Partners

Integrated into key partners in the SAP ecosystem.

Cloud-Native

SaaS so always on the latest version. No time-consuming OS, hardware, and application upgrades. Flexible tenant configuration(FTC)

SAP Datasphere - Architecture Overview





Key Capabilities

It all starts with a Space in the SAP Datasphere

What is a Space?What are the benefits?



The screenshot displays the SAP Space Management interface. At the top, there's a navigation bar with 'SAP Space Management' and a search bar. Below the navigation bar, there are summary statistics: Spaces 8, 79 icons, 20 checkmarks, 0 fire icons, 0 lock icons, Used Disk: 6.38 GB of 256 GB, Assigned Disk: 140 GB of 256 GB, Used Memory: 429.8 MB of 128 GB, and Assigned Memory: 74.3 GB of 128 GB. The main area shows a grid of spaces, each with a name, description, status, deployment date, storage, memory, and an 'Edit' button. The spaces are: LEGAL, MASTER_DATA, SUPPLY_CHAIN, HUMAN_RESOURCES, CENTRAL_IT_SPACE, MONITORING_SPACE, MARKETING_CAMPAIGNS, and SALES_AND_OPERATIONS. A diagram on the right shows three spaces (Space A, Space B, Space C) with icons for creation, deletion, and sharing, and a green arrow indicating a flow from Space A to Space B.

Resources | Storage & RAM

Users | Only members get access

Connections | SAP & non-SAP systems

Models | Tables, views, data flows, ...

Sharing | Tables & views

Create Connections with SAP and Non-SAP Sources

Create Connection

1 Choose Connection Type

2 Configure Connection Properties

3 Enter Name and Description

Filters

Features

☐ Data Flows

26

☐ Model Import

3

☐ Remote Tables

21

☐ Replication Flows

11

Categories

☐ Cloud

26

☐ On-Premise

11

Sources

☐ Non-SAP

16

☐ Partner Tools

2

☐ SAP

14

Connection Types (32)

SAP ABAP

Microsoft Azure Data Lake Storage Gen1 (deprecated)

Microsoft Azure Data Lake Storage Gen2

Adverity

Precog

Amazon Athena

Microsoft Azure SQL Database

Google BigQuery

Cloud Data Integration

Google Cloud Storage

Generic JDBC

SAP HANA

SAP applications

SAP S/4HANA

SAP S/4HANA Cloud

SAP ECC

SAP ABAP

SAP BW/4HANA Model Transfer

SAP BW

SAP HANA Data Lake

SAP HANA, Data Lake Files

SAP SuccessFactors

SAP Fieldglass

SAP Marketing Cloud

Databases & generic connections

SAP HANA on-prem & Cloud

Oracle

Microsoft SQL Server

Generic JDBC

Generic OData

Generic SFTP

Local CSV File

Generic Cloud Data Integration

Adverity

Precog

Hyperscaler & cloud apps

Google Cloud Storage

Google BigQuery

Azure SQL Database

Azure Blob Storage

Azure Data Lake Store Gen1, Gen2

Amazon S3

Amazon Athena

Amazon Redshift

HDFS

SAP Open Connectors

Outbound Targets

SAP Datasphere

SAP HANA on-prem & Cloud

SAP HANA, Data Lake Files

Amazon S3

Azure Data Lake Store Gen2

Google Cloud Storage

Google BigQuery

Apache Kafka

Create Connection

1 Choose Connection Type

2 Configure Connection Properties

3 Enter Name and Description

SAP S/4HANA On-Premise

Connection Details

SAP Logon Connection Type: Application Server

Application Server:

System Number:

Client:

System ID:

Language:

Cloud Connector

Use Cloud Connector: false

Credentials (User Name and Password)

User Name:

Password:

Features

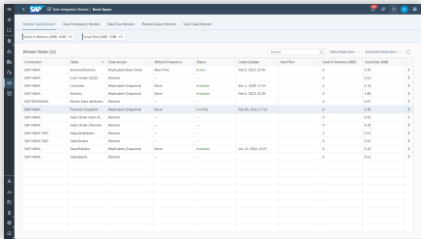
Remote Tables: Disabled

Choose Data Federation and Data Replication Options



Remote tables

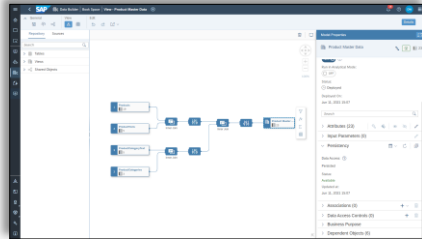
Virtual Access



Remote table federation

- Leave data in the source system and access remotely in real-time when needed
- No upfront data movement
- Federation is supported across various sources and hyperscalers

Replication



Remote table replication

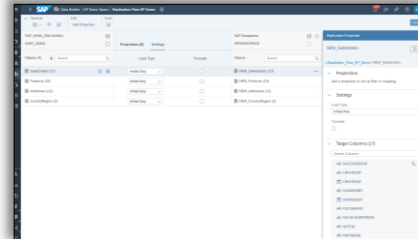
- Real-time replication or snapshots using single entities
- Schedule via task chains

View persistence

- Materialize view output results in a stable persistence
- Schedule via task chains

Cloud native data integration

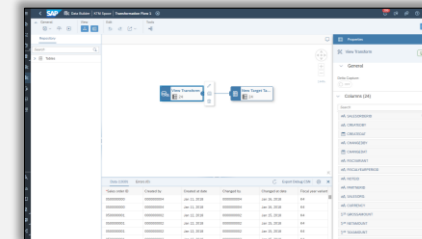
Replication flow



Mass data replication

- Data replication with multiple entities from a variety of sources
- Flexible targets to Datasphere and outbound target systems
- Support initial and delta replications from various sources

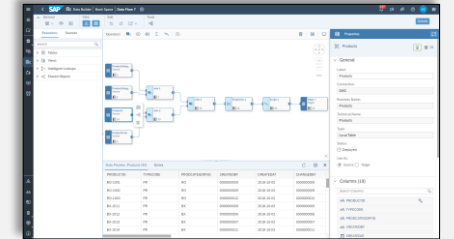
Transformation flow



Cloud-based data transformations

- Load data from one or more source tables and apply transformations (e.g. SQL, field-based)
- Store output results in a local target table
- Supports to process delta changes

Data flow



Batch loads & transformations

- Combine structured and semi-structured data while defining ETL processes
- Advanced transformation capabilities leveraging Python 3
- Schedule via task chains

Extract, Load, and Transform (ELT) using Replication + Transformation Flow



Extract

Load

Transform

Outbound

SAP Datasphere

Task Chain

Local table

Staging

Delta[†]

Operation and
time stamp/
sequence

Transformation

SQL

Field-based

Custom logic*

Local table

Target

Delta*[†]

Operation and
time stamp/
sequence

SAP Datasphere

SAP HANA
Cloud and on-premise

SAP HANA data lake files

Amazon Simple Storage
Service (S3)

Google Cloud Storage + Big
Query

MS Azure Data Lake Storage
Gen2

Apache Kafka

Replication flow

Local table

Transformation flow

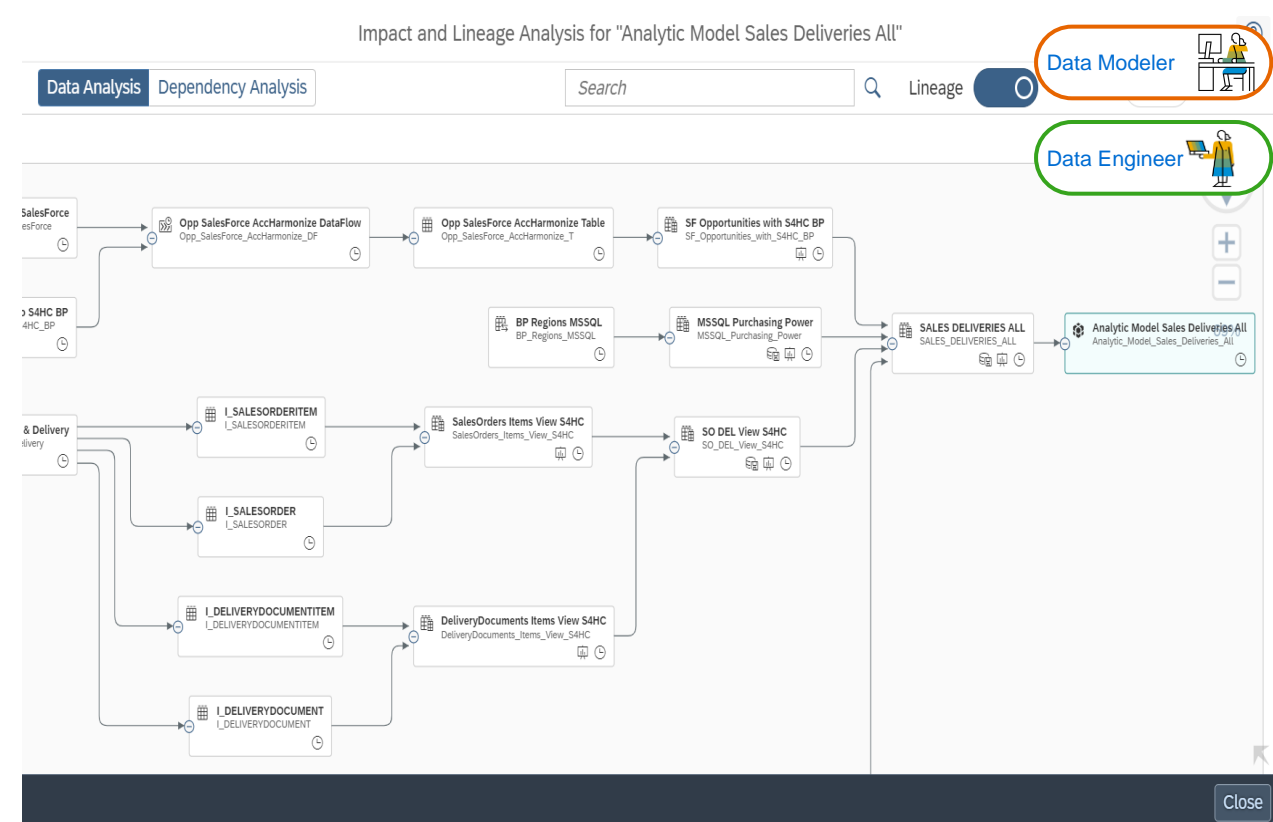
Local table

Replication flow

Impact and Lineage Analysis Diagram

Helps you to understand the lineage of a selected object, along with its impacts

- Impact and data lineage diagrams are available from various editors
- Diagrams contain information about the source of the data, transformations, associations, data access controls, and affected objects, incl. shared and unauthorized objects:
 - Lineage** (displayed to the left of the object) shows objects that are used as sources and allows to trace errors back to the root cause
 - Impact** (displayed to the right of the object) shows objects that use the object as a source and allows us to understand the impact of changes on dependent objects
 - The **data analysis** diagram focuses on data movements and transformations from source to destination across spaces
 - The **dependency analysis** diagram additionally displays objects connected through associations and data access controls



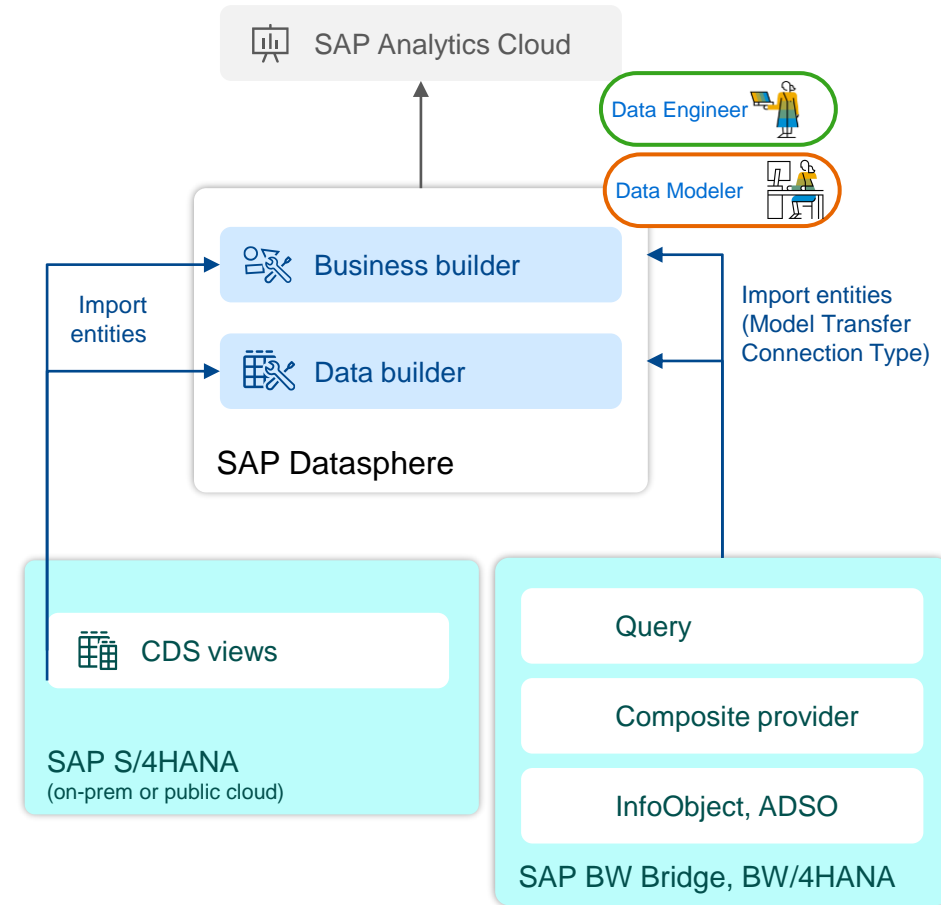
Load Business Semantics Using Import Entities

SAP S/4HANA connections

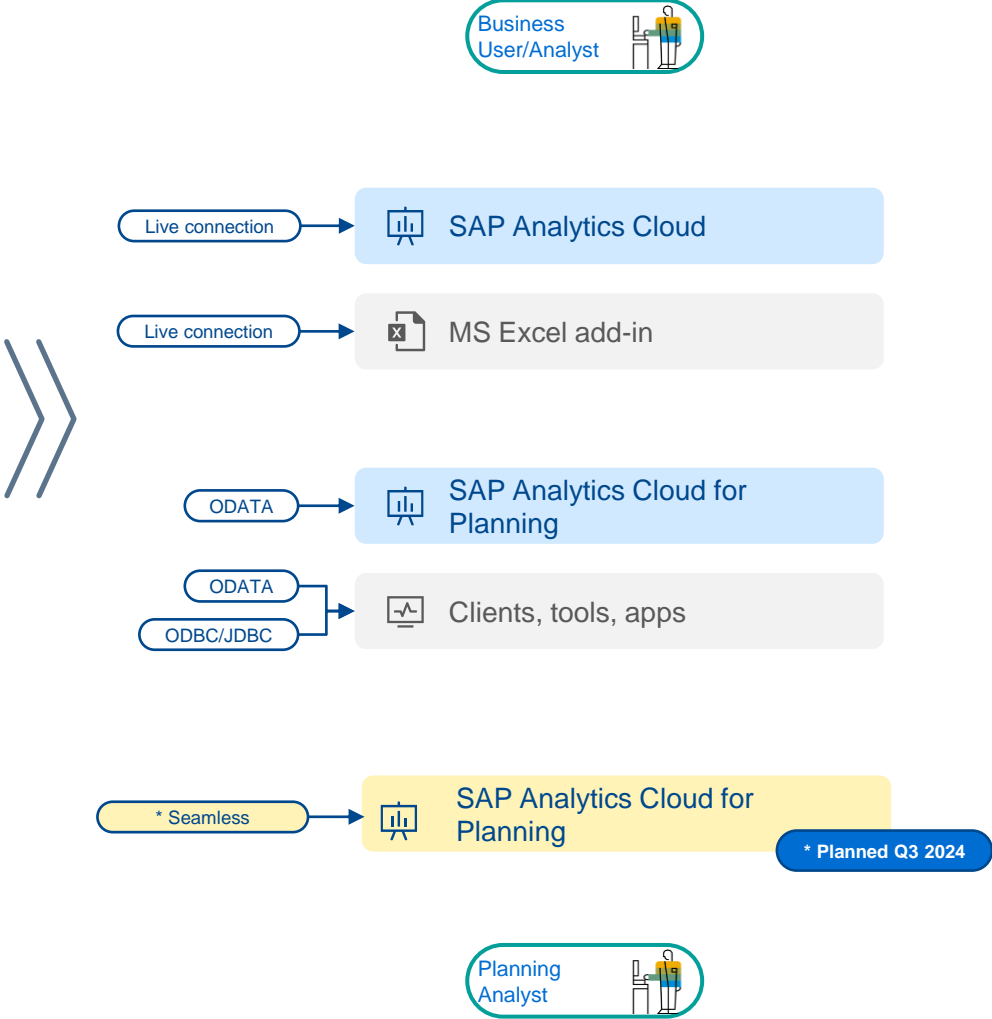
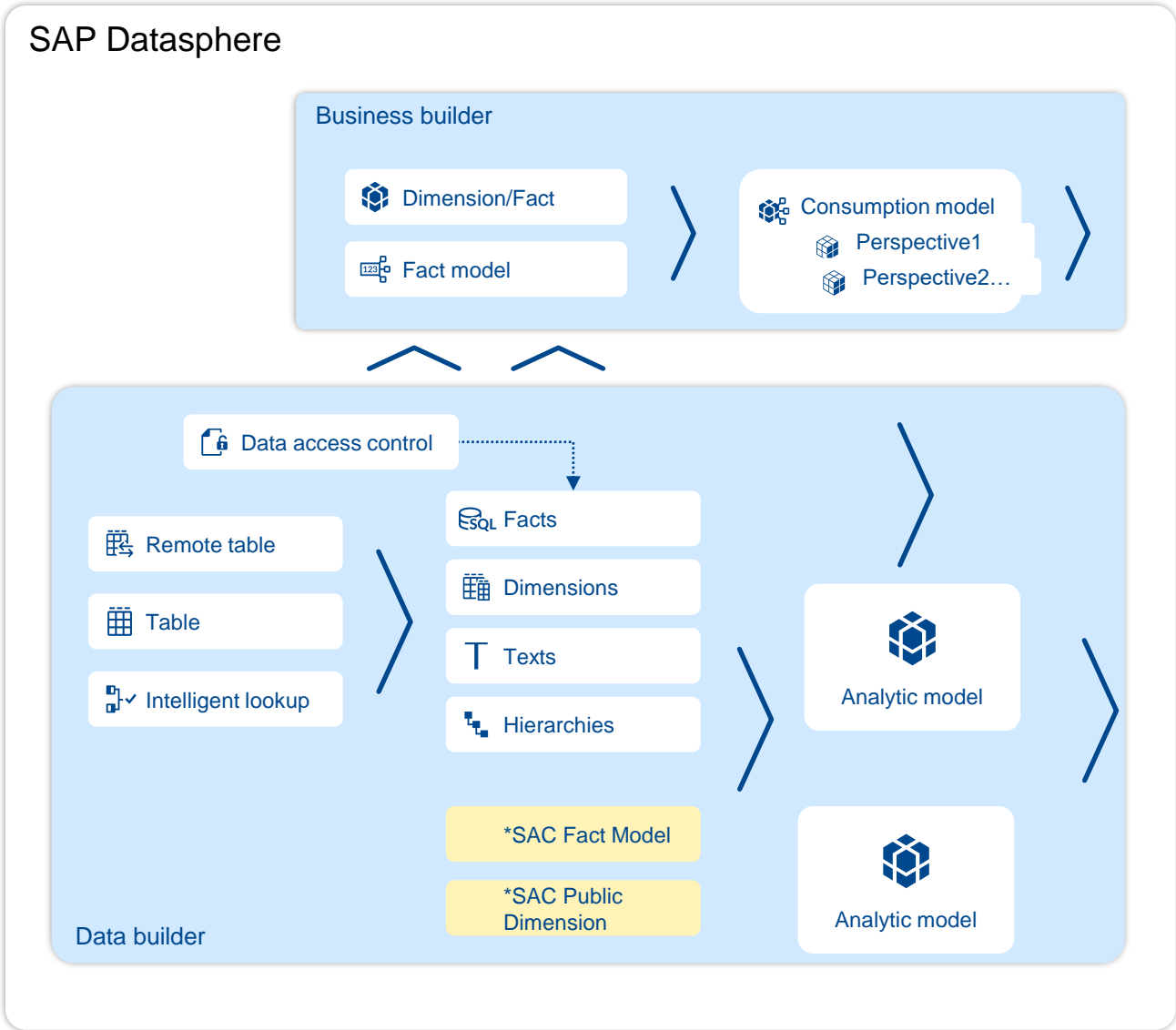
- Convert the SAP S/4HANA semantics to SAP Datasphere data and business builder entities using the wizard
- Relevant SAP notes: [3081998](#), [3283282](#)

SAP BW/4HANA and SAP BW Bridge connections

- Provide semantics to SAP Datasphere and Build new models on top of them or enhance them.
- Transfer BW query as a native entity (KPI, analytic model)
- Supports the import of BW analysis authorizations via data access controls
- More information about supported features in SAP note [2932647](#)



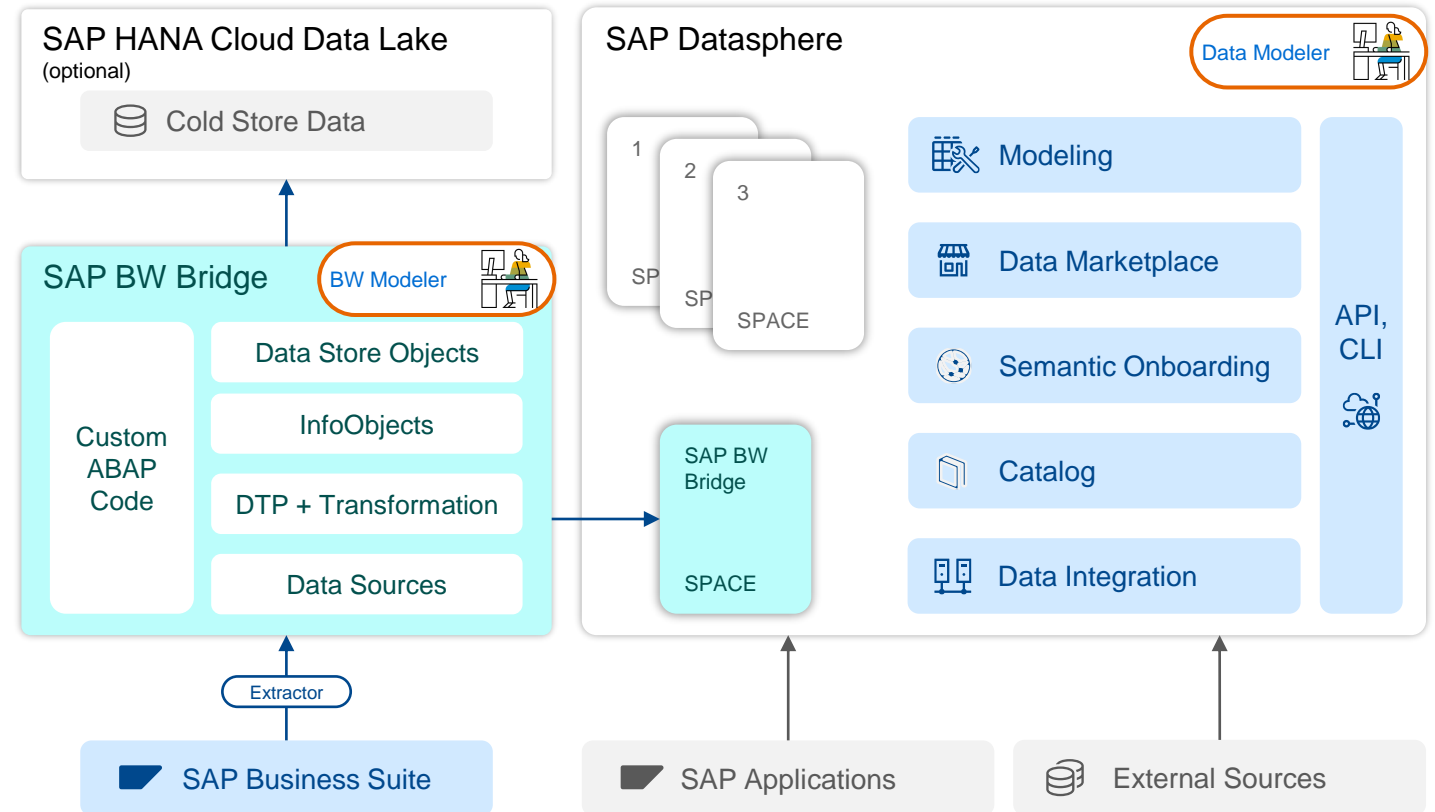
Consumption using SAP Analytic Cloud and Other tools.



SAP Datasphere, SAP BW Bridge

SAP BW Bridge provides a path to the public cloud for SAP BW NetWeaver and SAP BW/4HANA customers

- Get SAP BW capabilities directly in SAP Datasphere:
 - Proven SAP integration technology and Business Contents.
 - Staging layers of SAP BW for managing data loading with partitioning, monitoring, error handling
- Benefits of SAP BW bridge
 - Leverage SAP BW data structures, transformations, customizations, and skills – quickly extending your SAP BW investments to the public cloud
 - Integrate with on-prem SAP ECC data with familiar connectivity & semantic flexibility – retaining instant access while expanding your analytics depth
 - Empower your business to rapidly innovate on SAP BW data with an open, unified data & analytics cloud service



A light blue geometric shape, resembling a parallelogram with a diagonal cut, serves as a background for the text.

Quick Wins and Use cases

Preserve Business Semantic/Context, Using Import Entities from SAP S/4HANA, BW/4HANA, BW Bridge to SAP Datasphere

Import S/4 Data Models into SAP Datasphere

SAP S/4 HANA Cloud

SAP S/4 HANA On Premise

SAP BW/4HANA

SAP BW Bridge

Import Entities

1. Select the I_Product CDS view

4. Select Entities

I_Product

Filter By

Application Component

Modeling Pattern

Results (2,428)

ID

Label

Software Component

☐ YYL_I_Product

I_Product

LOCAL

☒ I_Product

Product

SAPSCORE

☐ YYL_I_PRODUCT

I_Product

LOCAL

☐ SEPMRA_C_ALP_Product

Product

SAP_BASIS

☐ I_TrdClassctrProduct

Product

SAPSCORE

☐ SEPMRA_C_SH_Product

Product

SAP_BASIS

☐ A_EnmntWasteTranspDocMaltP

Products

SAPSCORE

☐ YYL_PRODUCTS_BONUS_CALCULAT

Products

LOCAL

☐ SEPMRA_C_ALP_ProductVH

Product

SAP_BASIS

☐ C_MKT_MktgChntrPluginProductVH

Product

SAPSCORE

☐ C_TrdClassctrProduct

Product

SAPSCORE

Import Entities

2.Import and Deploy

5. Review Entities

Selected Entities

Entity

Modeling Pattern

I_Product

Product

Dependent Entities of I_Product

Handling Unit Type - Text

Remote.EAY_I_EWM_HandlingUnitTy...

Already imported

Material Handling - Text

Remote.EAY_I_EWM_MaterialHandli...

Already imported

Quality Inspection Group - Text

Remote.EAY_I_EWM_QualityInspecti...

Already imported

Serial Number Profile - Text

Remote.EAY_I_EWM_SerialNumberP...

Already imported

Warehouse Product Group - Text

Remote.EAY_I_EWM_WarehouseMat...

Already imported

Warehouse Storage Condition - Text

Remote.EAY_I_EWM_WhseStorageC...

Already imported

External Product Group - Text

Remote.EAY_I_ExtProdGrpText

Already imported

International Article Number Cat - Text

Remote.EAY_I_IntnlArtnrmbcatst

Already imported

Item Category Group - Text

Remote.EAY_I_ItemCategoryGroupText

Already imported

Text View - Adjustment Profile

Remote.EAY_I_ProdEWMAdjmtProfil...

Already imported

Product

Remote.EAY_I_Product

Already imported

Product Category Type - Text

Remote.EAY_I_ProductCategoryText

Already imported

Product Group - Text

Remote.EAY_I_ProductGroupText_2

Already imported

SAP Data Builder DEMO_19007 Remote Table - Product

Product remote table

Product

General

Remote

Attributes (144)

Filters (0)

Associations (41)

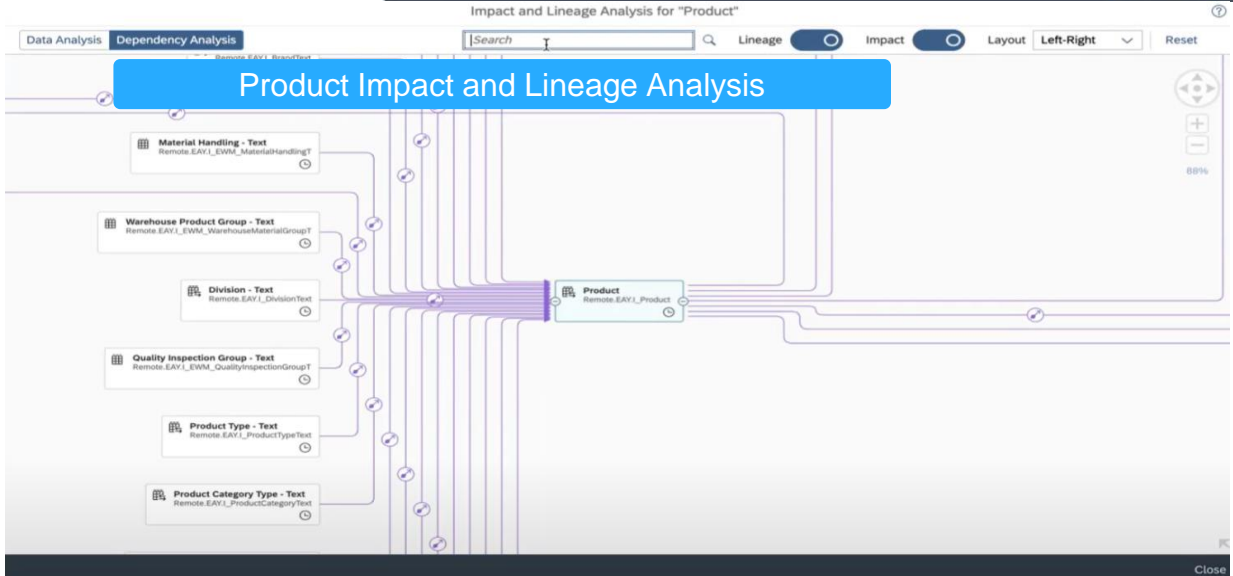
Business Purpose

Table Services

Dependent Objects (?)

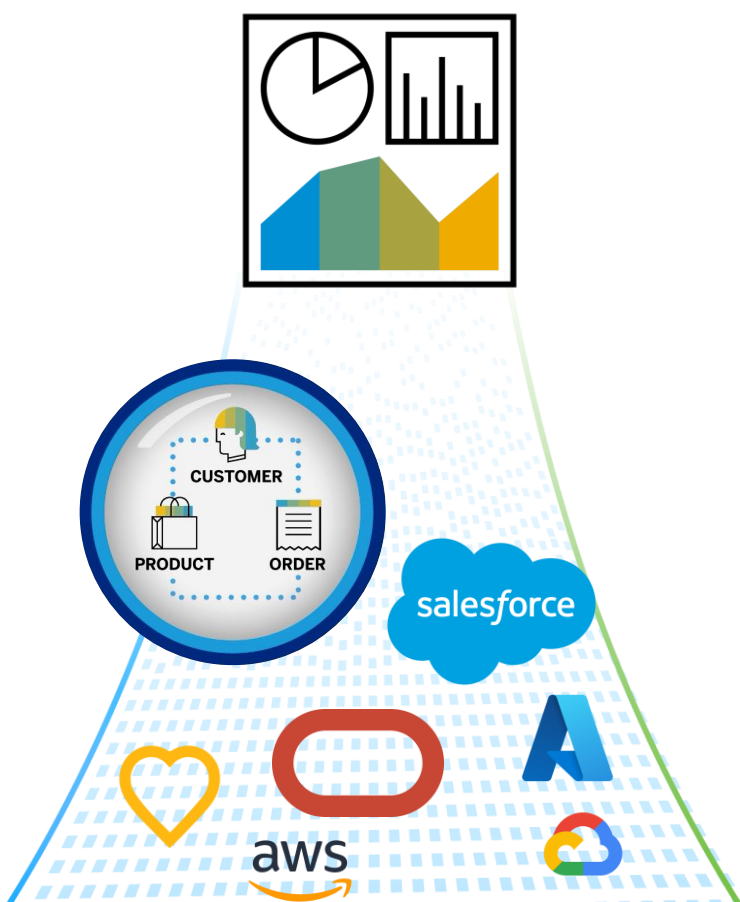
Associations (41)

Business Name	Technical Name	Type	Target Entity	Mappings
<input type="checkbox"/>		Association	Product	Cross-plant CP = Product
<input type="checkbox"/>		Association	Text View - Adjustment Profile	AdjustmentProfile = AdjustmentProfile
<input type="checkbox"/>		Association	Assortment List Type - Text	AssortmentListType = AssortmentListType
<input type="checkbox"/>		Association	Unit of Measure	BaseUnit = UnitOfMeasure
<input type="checkbox"/>		Association	Unit of Measure Text	BaseUnit = UnitOfMeasure
<input type="checkbox"/>		Text Association	Brand - Text	Brand = Brand
<input type="checkbox"/>		Association	Brazil ANP Code - Text	ANPCode = BR_ANPCode
<input type="checkbox"/>		Association	Chemical Compliance Relevance	IsChemicalComplianceRelevant = IsChemicalComplianceRelevant
<input type="checkbox"/>		Association	Unit of Measure	ContentUnit = UnitOfMeasure
<input type="checkbox"/>		Association	Unit of Measure Text	ContentUnit = UnitOfMeasure

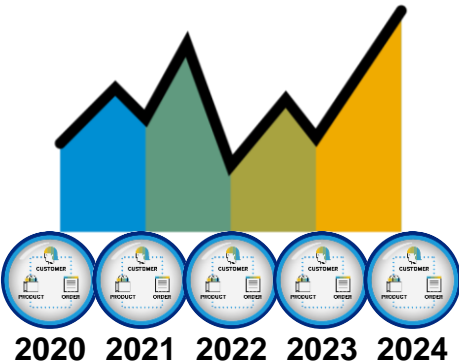


Use Cases of Using Import Entities Feature

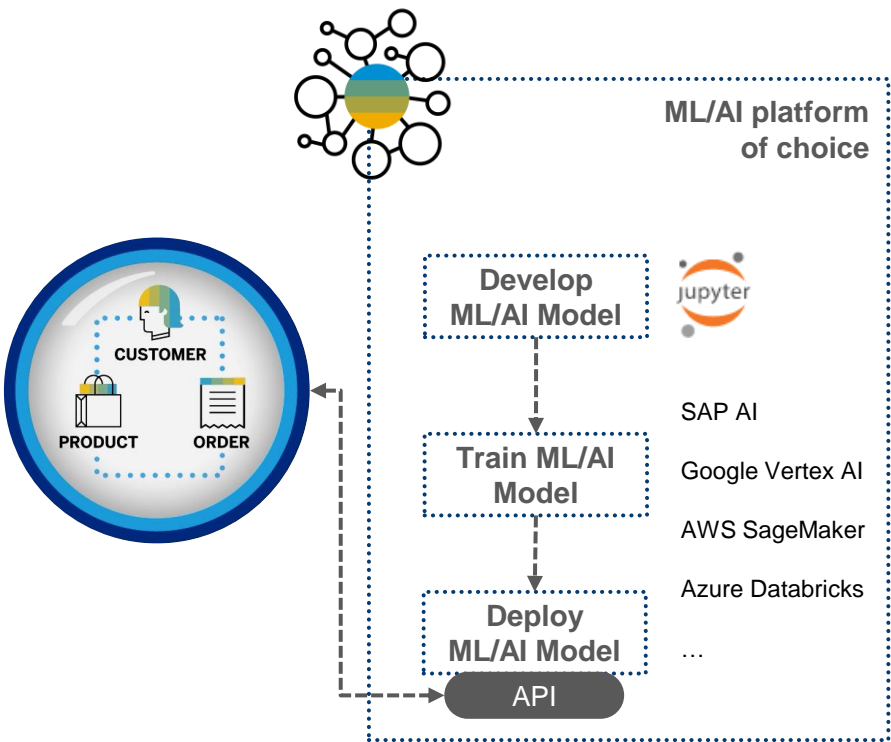
Integrate with Non-SAP Data



Strategic/Historical Reporting



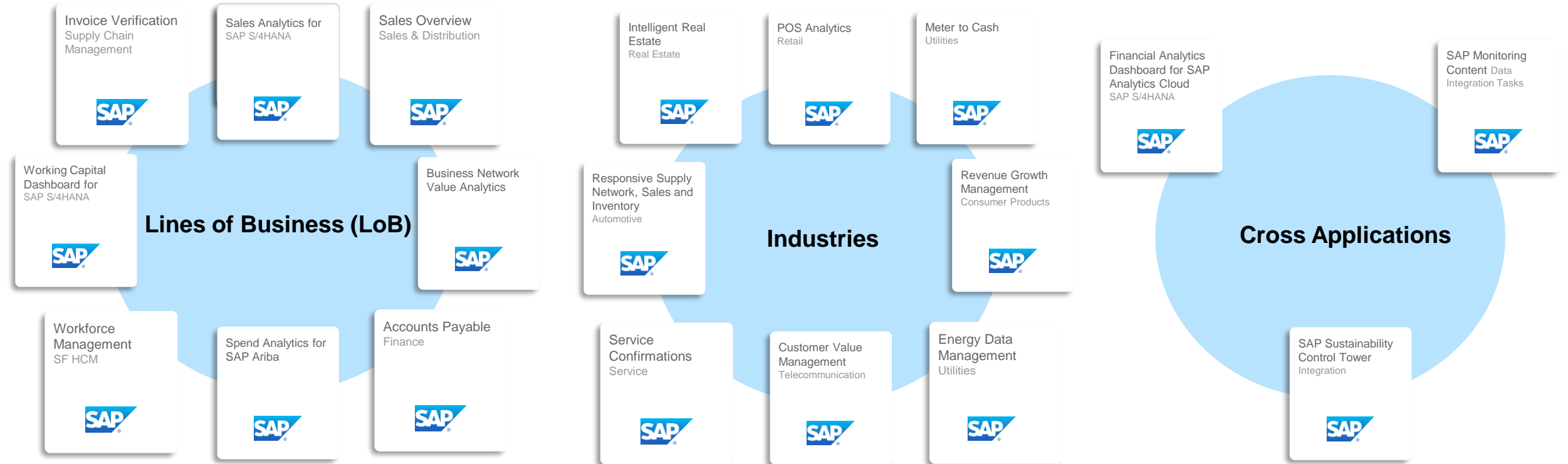
Leverage Hyperscaler Capabilities



Quick Start using Pre-Built SAP Business Contents

Continuously growing number of content packages for SAP Datasphere and SAP BW Bridge

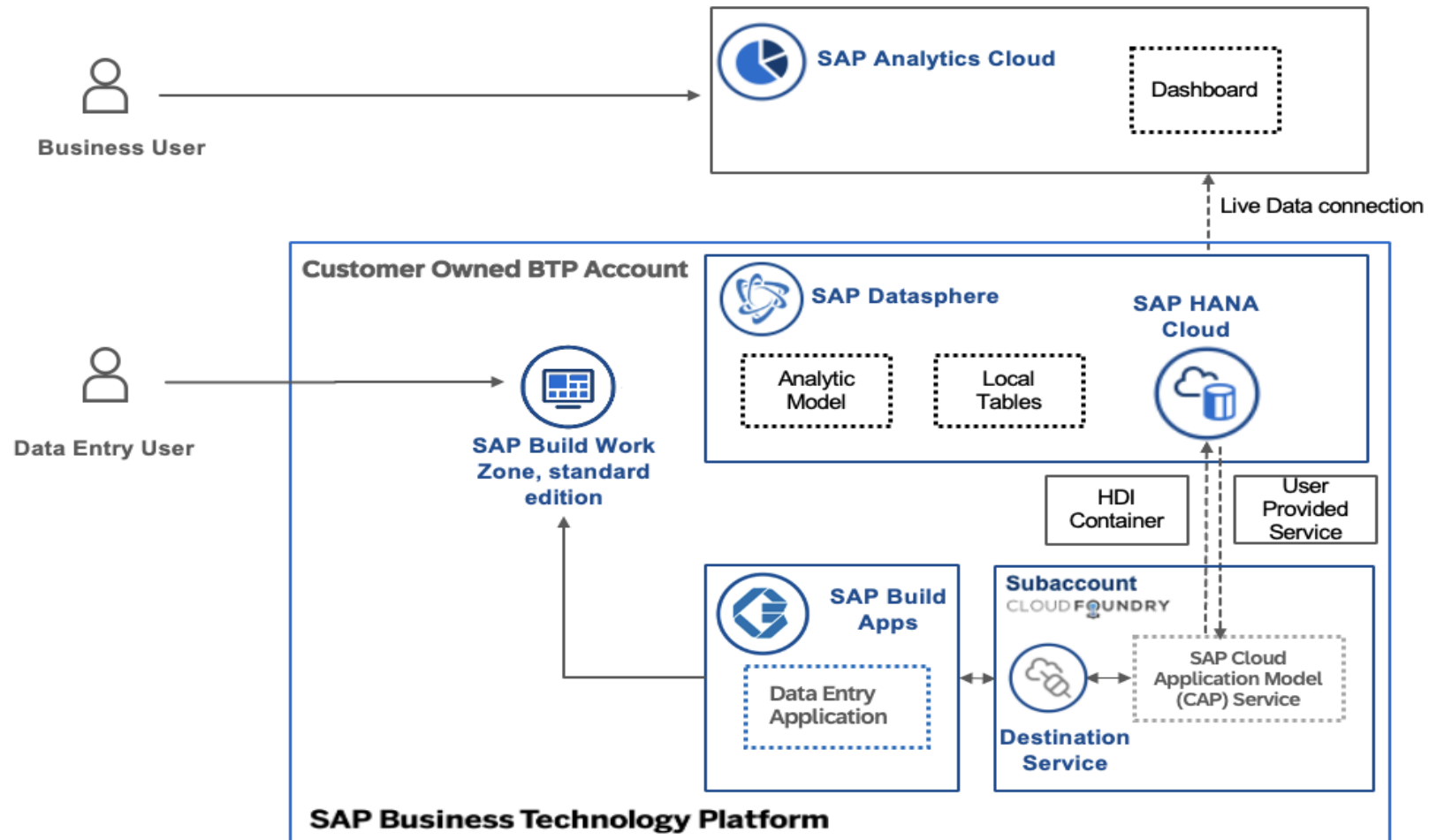
- 250+ Content packages built by SAP and Partners
- 31 Content Packages with SAP BW Bridge (11,000+ reusable objects)
- SAP S/4HANA Content Generation (1,000+ Fiori apps ready for import)



Improve Business Decisions and Process Optimizations by **Analyzing Business Data and End-Users Input Data Directly into SAP Datasphere.**

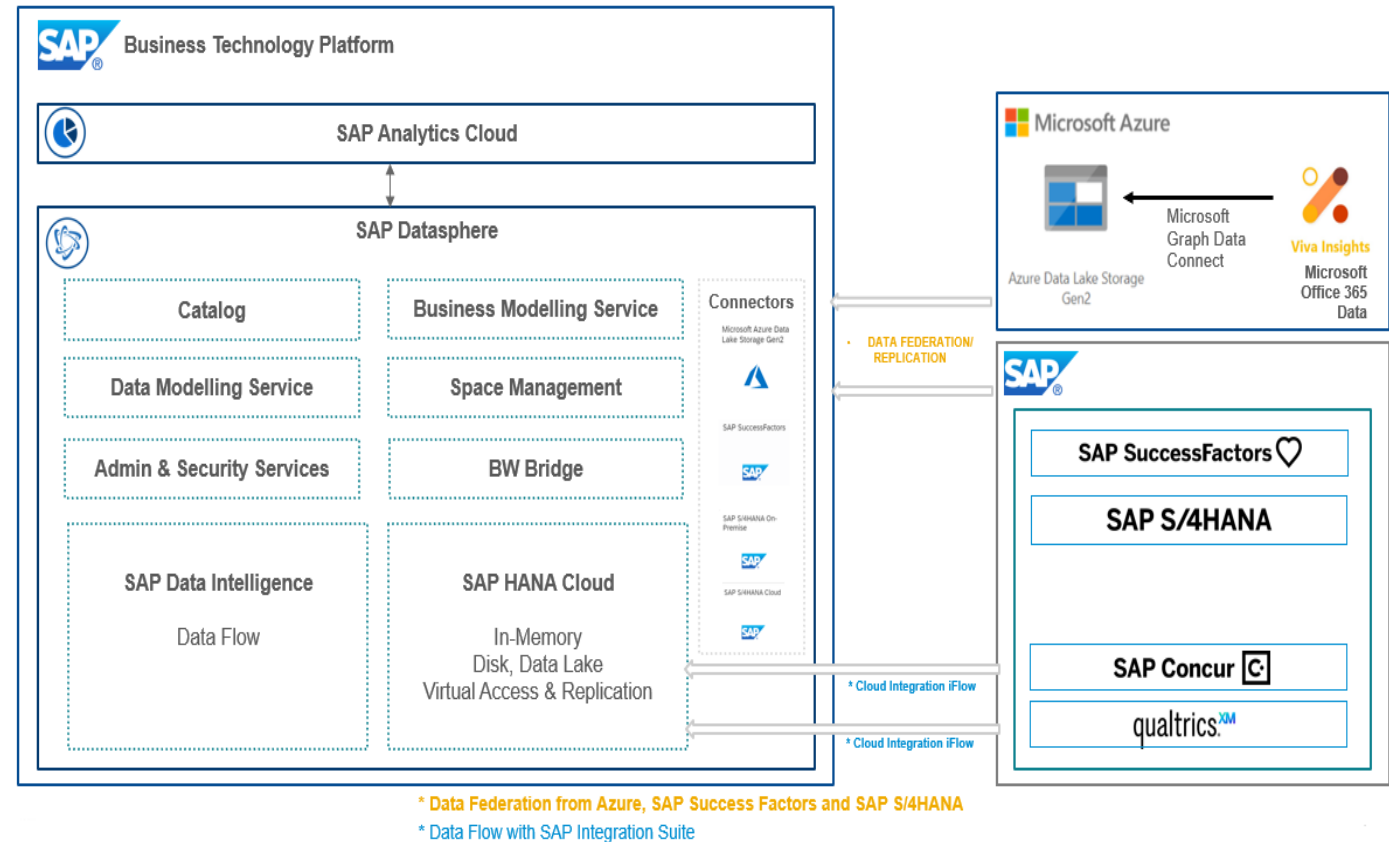
Challenge: Analyze business data from backend systems in combination with end-user data originating from customer-specific business processes.

1. Build an end-user data entry app using SAP Build Apps.
2. Implement a simple service in SAP Business Technology Platform (BTP) to connect the SAP Build Apps application with SAP Datasphere.
3. Data modeling and Analysis within SAP Datasphere.
4. Design a comprehensive dashboard using SAP Analytics Cloud



Data-driven Employee Talent Insights with SAP Datasphere & SAP Analytics Cloud

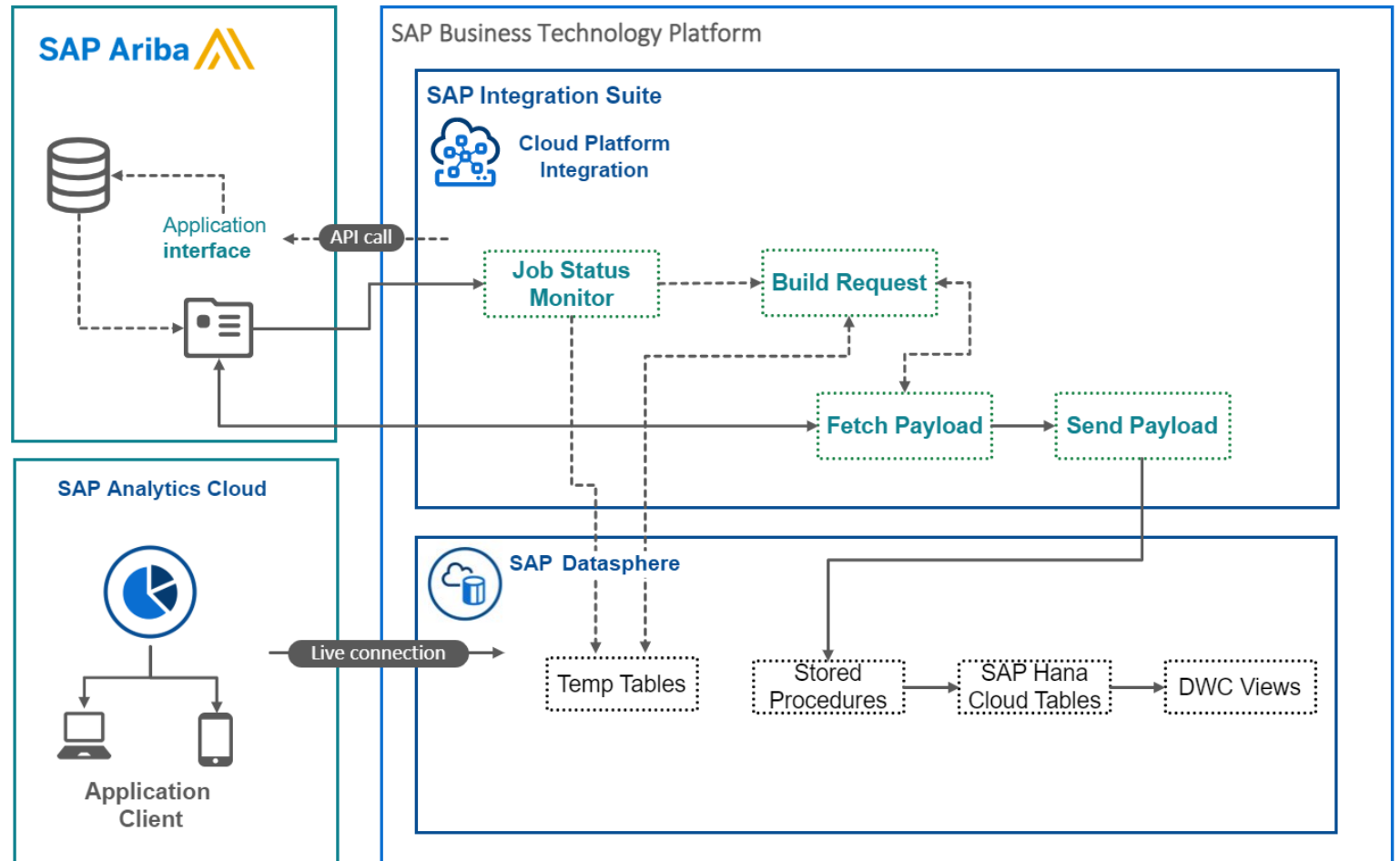
- Use case 1: Integration of SuccessFactors and Microsoft Viva Insights combine to provide a holistic view of employee productivity, well-being, and the impact of pay parity and inclusivity.
- Use Case 2: Overall Employee Sentiment Analysis Based on the Qualtrics Data
- Use Case 3: Professional Skill Development while Monitoring Training Expenses Based SAP SuccessFactors and SAP Concur Data.



Extract your SAP Ariba Spend Analysis Data using SAP Integration Suite and Load into SAP Datasphere.

Challenge: SAP Ariba offers an Analytical API for Spend Analysis data, due to its response format SAP Datasphere Business content requires additional orchestration

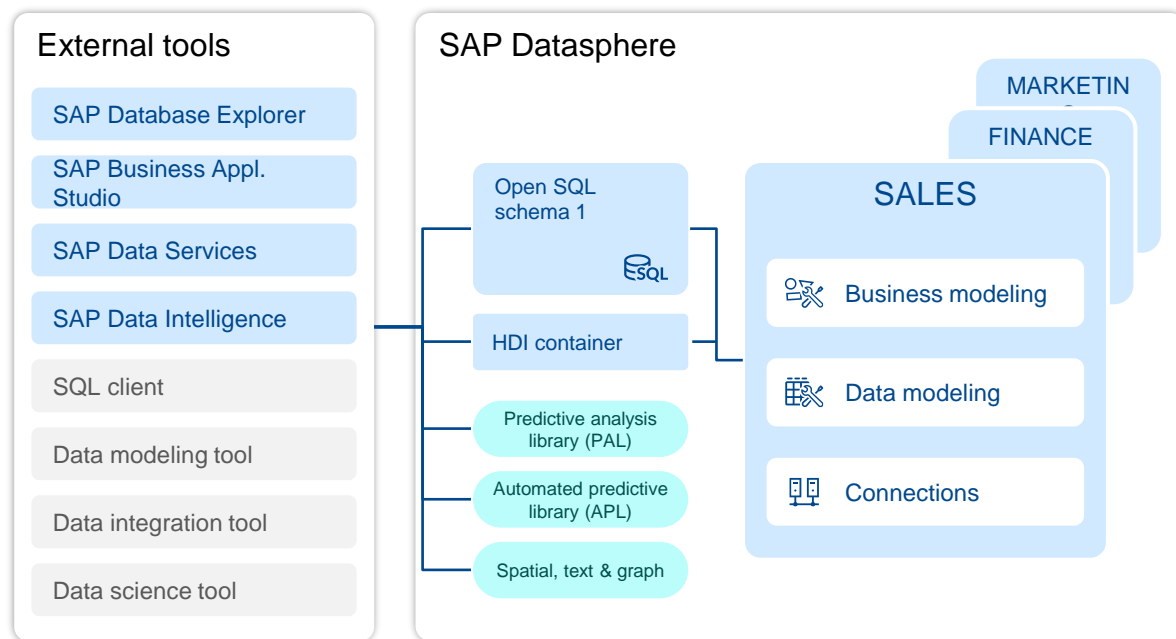
1. Connect SAP Integration Suite to Ariba and Create integration flow based on the Ariba API.
2. Download the business content then create the tables using scripts and Deploy the contents.
3. Set up the SAP Datasphere and SAC connection.
4. Using SAP Integration Suite send payload into SAP Datasphere Underneath HANA cloud tables.



Unlock Business Value Using Embedded ML and SAP FedML

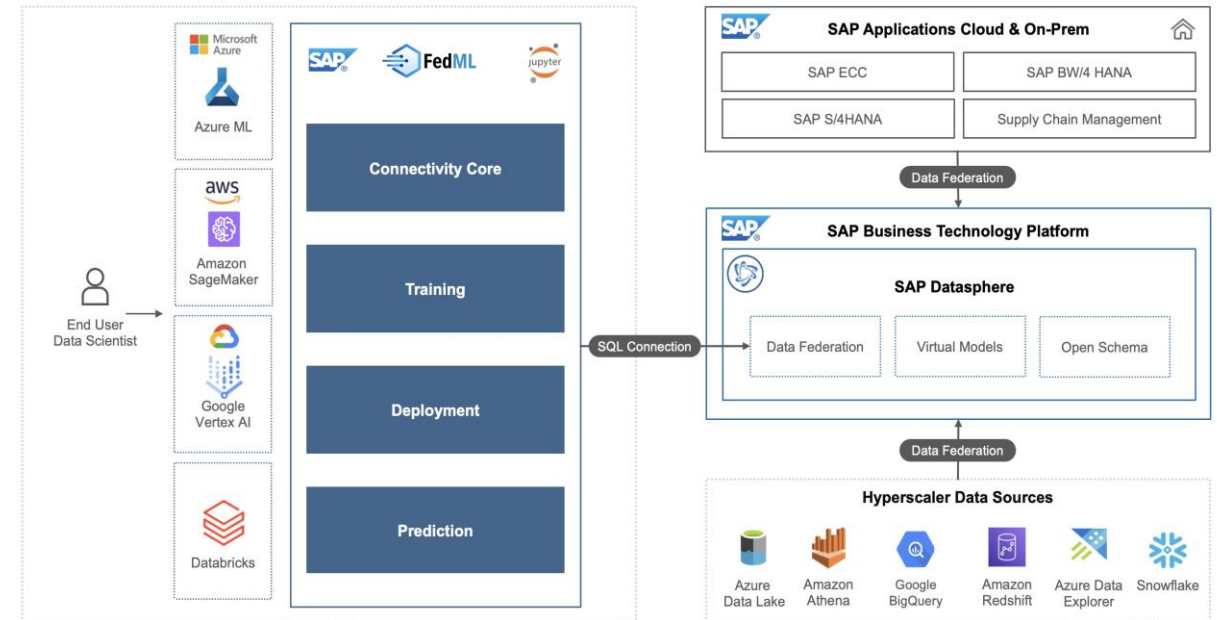
Leveraging SAP HANA Cloud Embedded ML capabilities

- Python or R environment to trigger calculations in SAP Datasphere
- Train ML model based on persisted and managed data in HDI container or open SQL schema and Store ML Prediction result in table in HDI container or open SQL schema



SAP Datasphere and ML apps on Hyperscalers

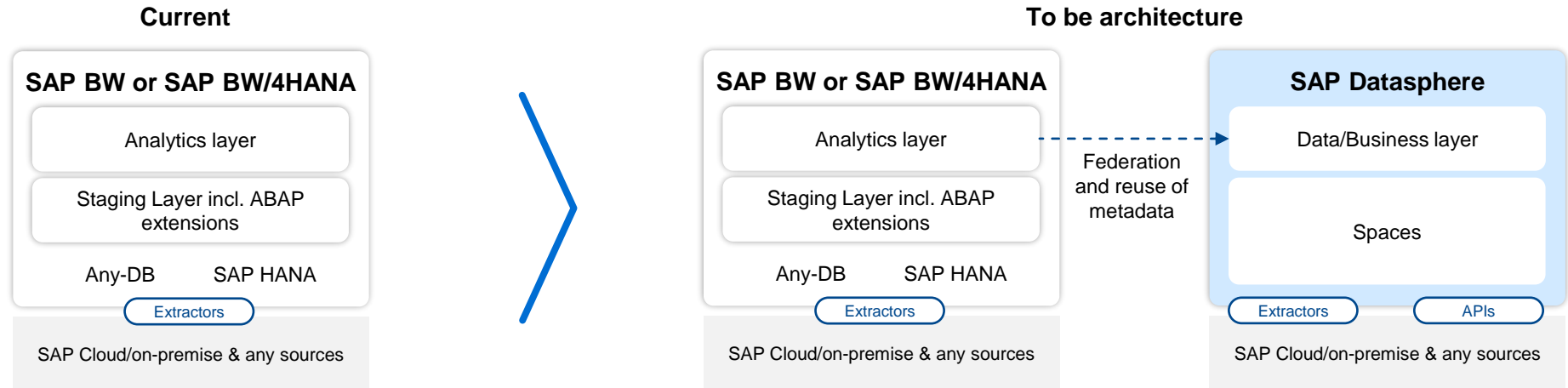
- Challenge: Heterogeneous Data Replication for Advanced Analytics and ML.
- Data federation in SAP Datasphere to combine SAP business data from SAP sources, popular hyperscaler, and SaaS platforms. SAP FedML (Federated Machine Learning) Python library used.



Simplify the Current SAP BW or BW/4HANA Data Landscape With SAP BW Bridge or (and) Hybrid Integration with SAP Datasphere.

Hybrid

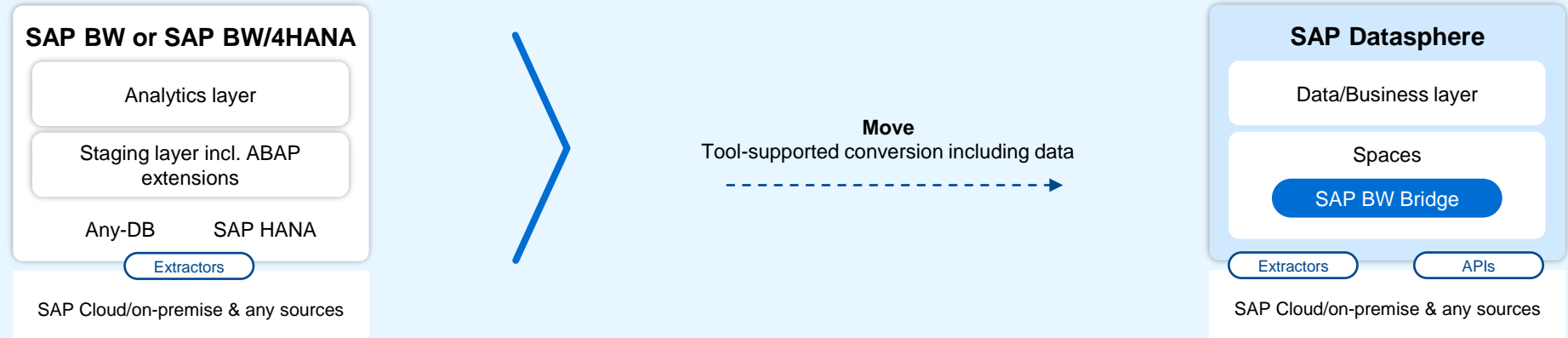
Combining SAP BW or SAP BW/4HANA with SAP Datasphere



Move from hybrid to SAP Datasphere with SAP BW bridge

SAP BW bridge

Replace parts of SAP BW or SAP BW/4HANA with SAP Datasphere



Unleash the Power of Data: Hands-on SAP Datasphere Experience.

What you will experience:

Data Modeling:

- Learn to transform raw data into a structured data model using Data Builder.
- Gain practical knowledge on defining entities, attributes, and relationships and the Analytic consumption model.

Bring your Data to Life:

- Use your newly created SAP Datasphere model to power a live-connected story in SAP Analytics Cloud

This event is perfect for:

- 1.Data modeler
- 2.Business analysts/Users
- 3.Data architects
4. **Anyone interested in leveraging data for better decision-making.**

Location: Track1

Timings: Option1: 01:00 PM to 02:00 PM

Option2: 02:00 PM to 03:00 PM



SAP Analytics Cloud



Analytics



External
consumption

SAP Datasphere

SAP BW
Bridge
(optional)



Embedded
Data Lake
(optional)



Data & business
modeling



Catalog



Data marketplace



Semantic onboarding



Space management



Administration &
security



Data federation



Data replication



Data transformation



Connectivity

Thank you.

Contact information:

Jeetendra (Jeet) Kapase
jeetendra.kapase@sap.com

