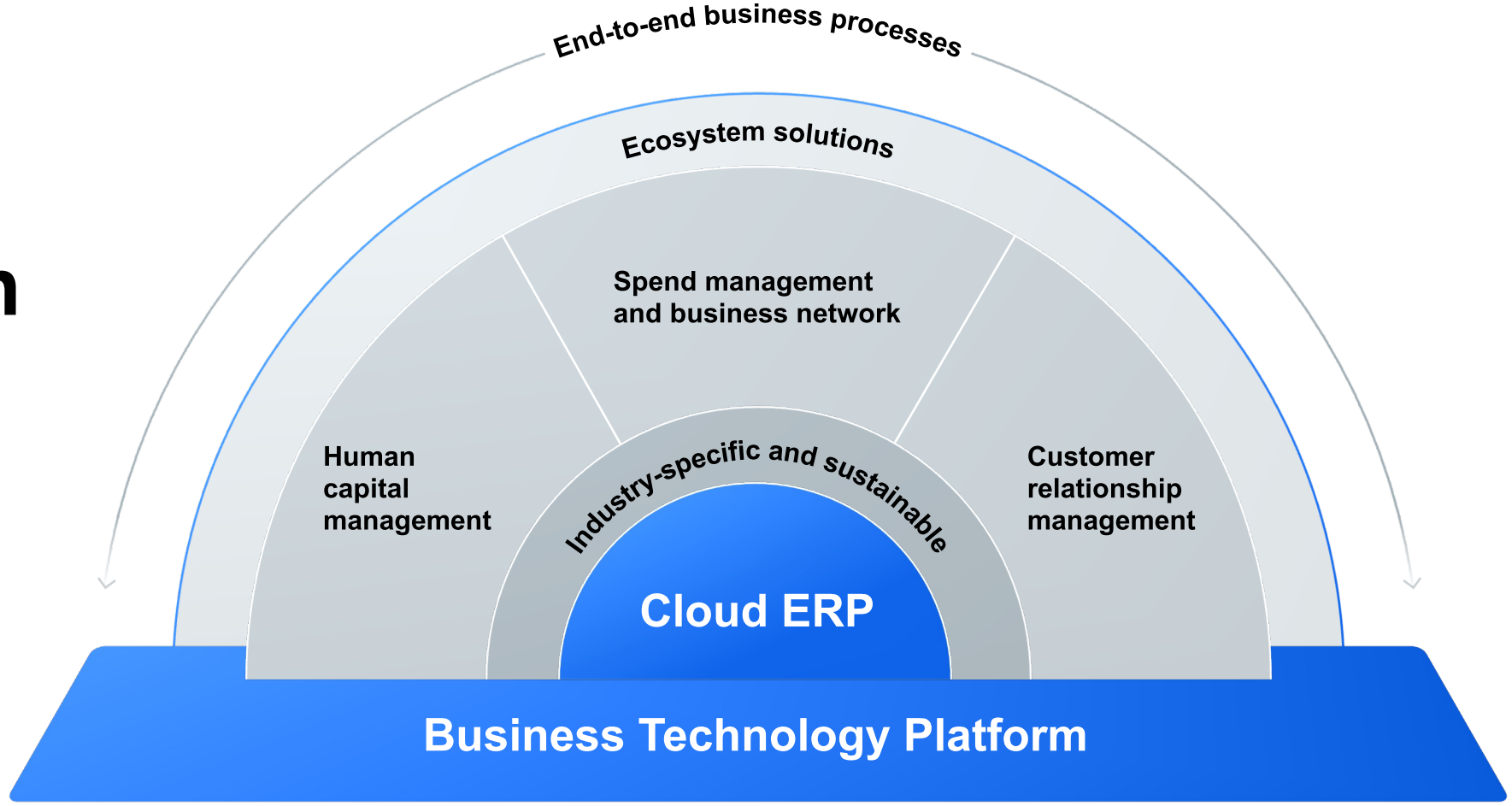
SAP BTP Innovation Day

SAP Datasphere Strategy in the context of BTP

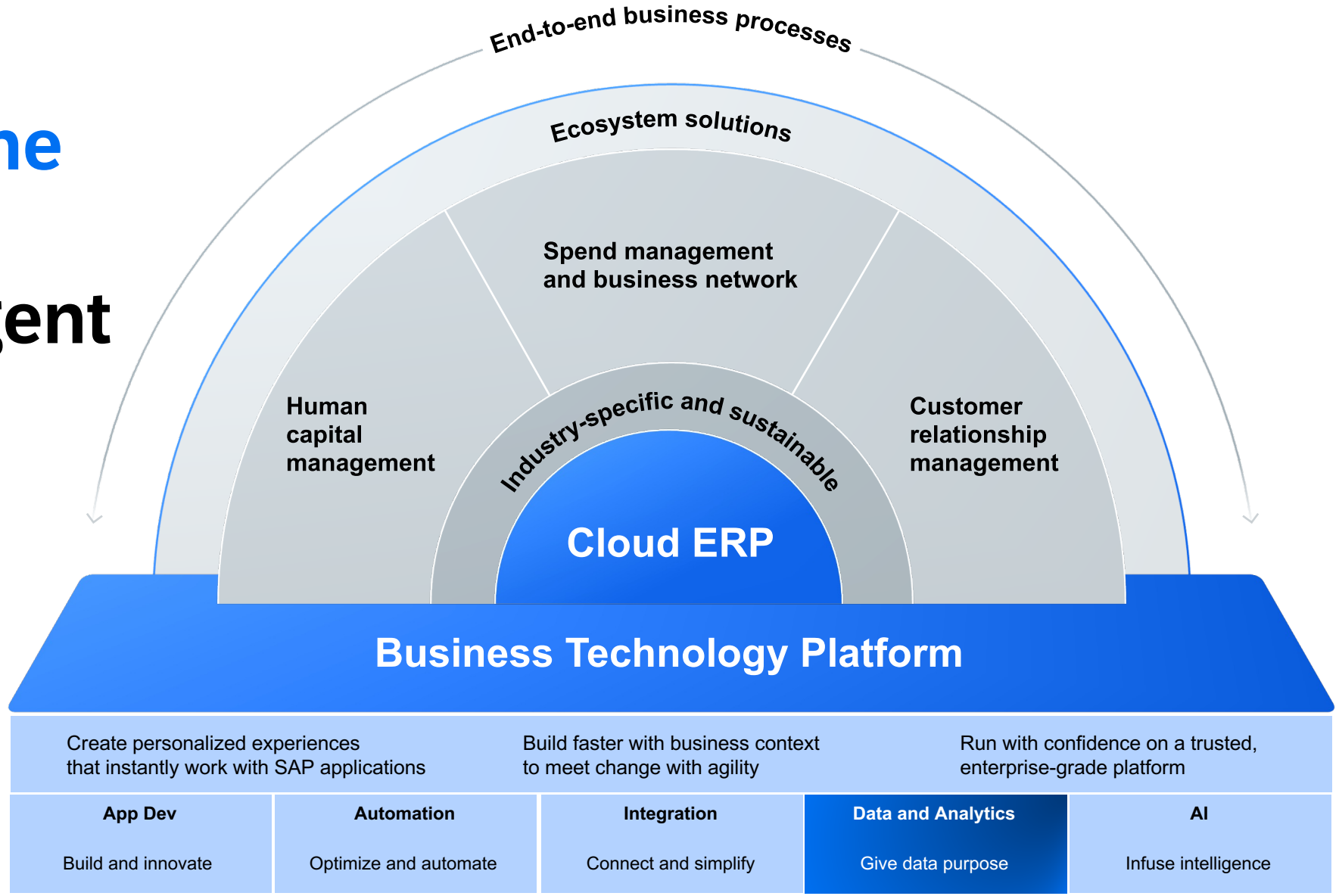
Iver dan de Zand, CTO SAP BTP EMEA

October, 2023

Enable every enterprise to become an intelligent, sustainable enterprise



SAP BTP is the foundation of the Intelligent Sustainable Enterprise



Data-driven
decision taking

SAP Data & Analytics

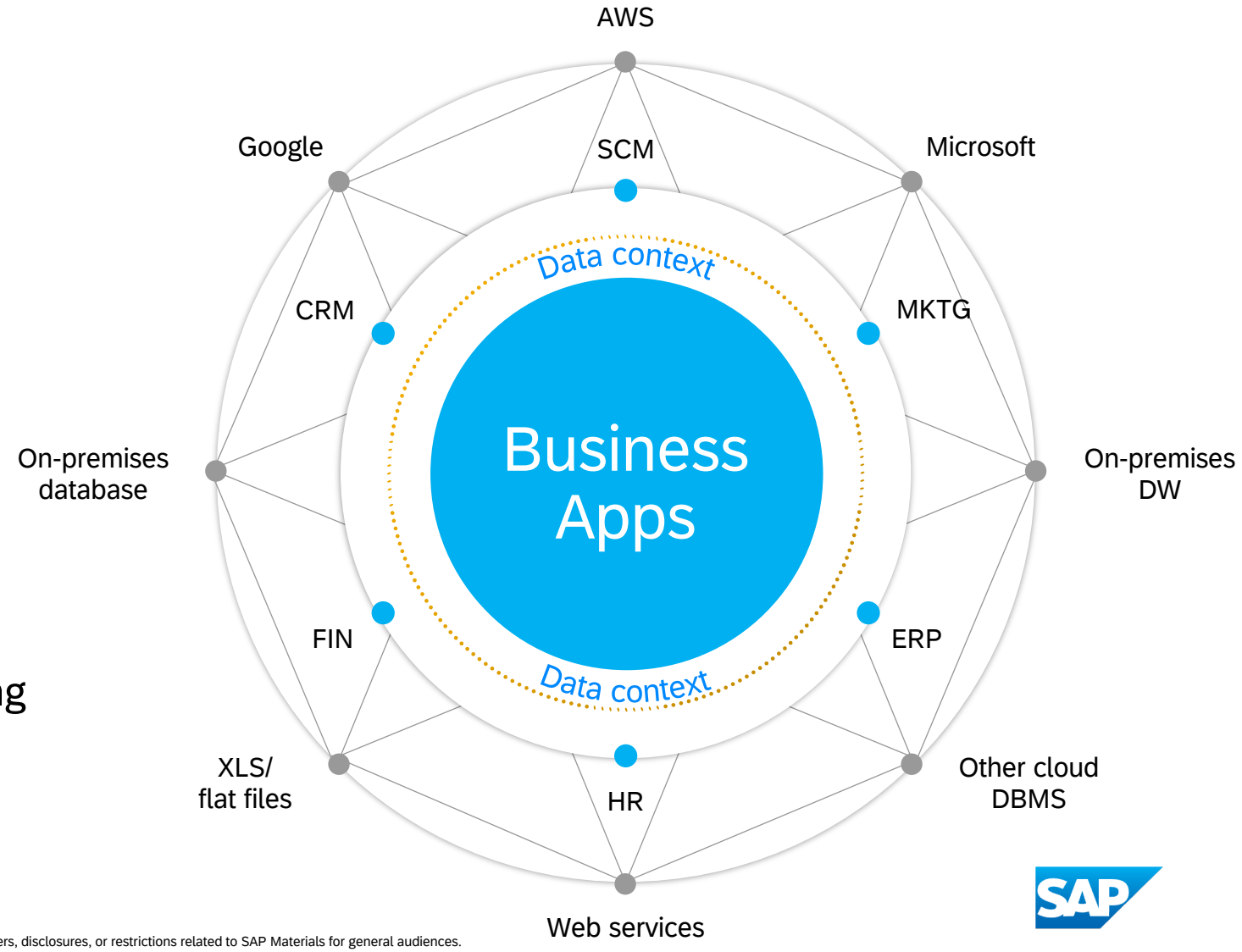
Data needs context for better business decision-making

Innovation has happened in silos

Data, especially metadata, has been removed from its context

There's been a fundamental error - focusing solely on technology rather than the data

(Multi)-cloud brings opportunities and challenges



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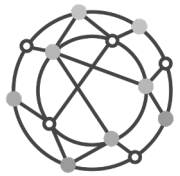
SAP Data & Analytics: SAP Datasphere

Unleash the power of your business data

Access authoritative data for trusted insights



Enrich all your data projects with every data ecosystem

Simplify your data landscape No matter where your data resides

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SAP Datasphere: Use Cases

Self-service Insights & Modeling on S/4HANA and other Eco systems

Seamless **interoperability** between Datasphere and key Hyperscalers

Modernization of SAP BW with extended functionality and innovative use cases

Consolidate Operational & Business Planning with SAP Datasphere

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Integrated Data & Analytics Portfolio to realize our vision

Planning & Analytics

Extended Planning and Analytics

Provides an optimized, vertically integrated consumption layer for customers, LoBs, partners

SAP Analytics Cloud

Data Mgmt. & Data Warehouse

Business Data Fabric

Harmonizes access to SAP data (incl. business context) with the ability to feed in external data

SAP Datasphere

Operational Databases

Intelligent Data Applications

Build apps leveraging analytical capabilities (ML, graph, spatial) of data tier combining historical & real-time data Supported by BTP Services (e.g. pro / no-code app, development tools)

SAP HANA Cloud

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SAP Analytics Cloud and SAP Datasphere key takeaways.

State of the Art Frontend

Consolidated, powerful and efficient frontend components, integrated anywhere

eXtended Planning & Analytics

Create powerful planning solutions and augment BI use cases with simulation

Artificial Intelligence

Augment analytics workflows with AI as an integral part of our offering

Tightly Integrated & Semantically Enriched

Strengthening the seamless interplay of our solutions and leveraging existing semantics

End-to-End

Matching with existing enterprise landscapes and covering key data use cases

Flexible & Open

Embedded into an ecosystem and enabling partner solutions

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This is the current state of planning and may be changed by SAP at any time.

SAP BTP Innovation Day

SAP Datasphere – Capabilities

Mikal Netteberg & Chris Pritchard, BTP Center of Excellence
October, 2023

SAP Datasphere is the foundation for a business data fabric architecture

Data consumers

Planning and analytics | Intelligent data apps | Data science

SAP Datasphere running SAP BTP

Discovery, consumption, sharing & self-service
space, data product, marketplace

Governance
cataloging, metadata management, lineage, privacy, quality

Business semantics
semantic onboarding, entity import, business content

Modelling
relational & rich analytic models, lifecycle management, authorizations

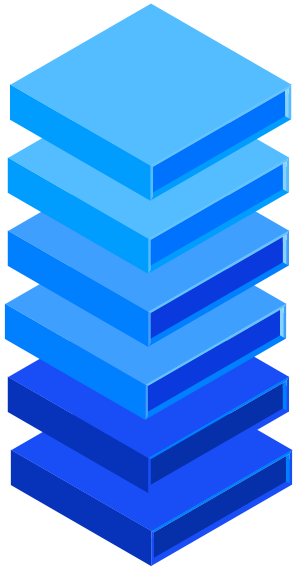
Data integration & preparation
real-time replication & federation, transformation, scheduling, monitoring

SAP and non-SAP data

Applications | **On-premises Data Warehouses** | **Cloud Data Warehouses and Lakehouses** | **Relational Databases** | **Unstructured/ Semi-structured Data**

Together with our open data partners

SAP Datasphere embracing openness



databricks

Databricks delivers a Data Lakehouse platform, based on Apache Spark, and Delta Lake that brings reliability to data lakes for machine learning and other data science use cases.

CONFLUENT

Confluent delivers the leading cloud-native service for connecting and processing real-time data with a fully-managed Apache Kafka environment.

Collibra

Collibra delivers the best-of-breed data intelligence cloud platform that tightly integrates data catalog, governance, lineage, quality, and privacy capabilities.

DataRobot

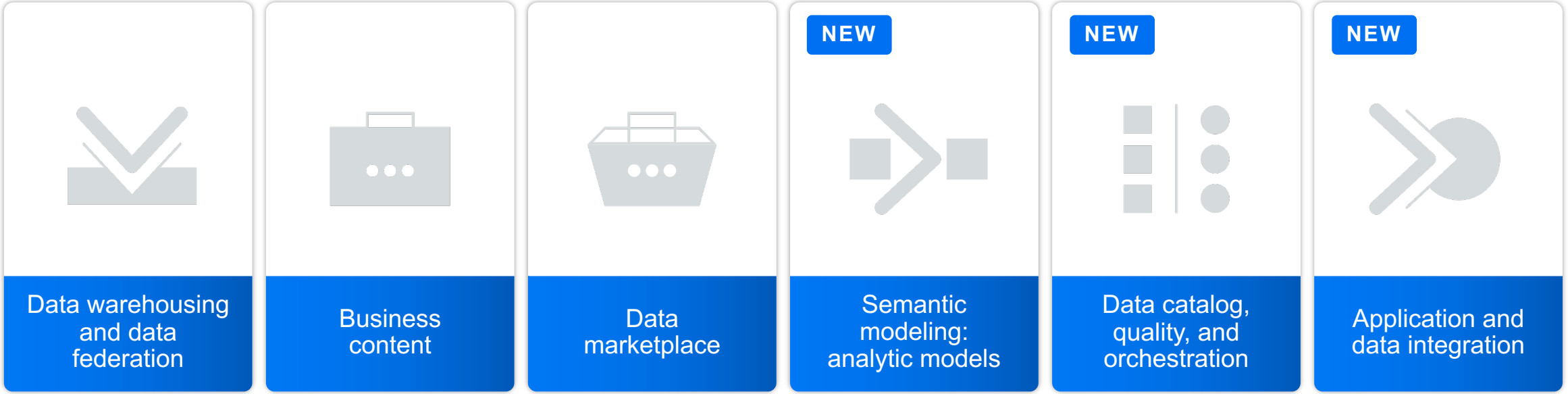
DataRobot empowers organizations to leverage augmented intelligence with automated machine learning.

Google Cloud

Extend SAP data models to Google Big Query or bring Google Big Query insights directly into SAP processes with the ability to gain new analytics and AI insights from unified data.

Evolving SAP Data Warehouse Cloud towards a business data fabric

Key features of SAP Datasphere



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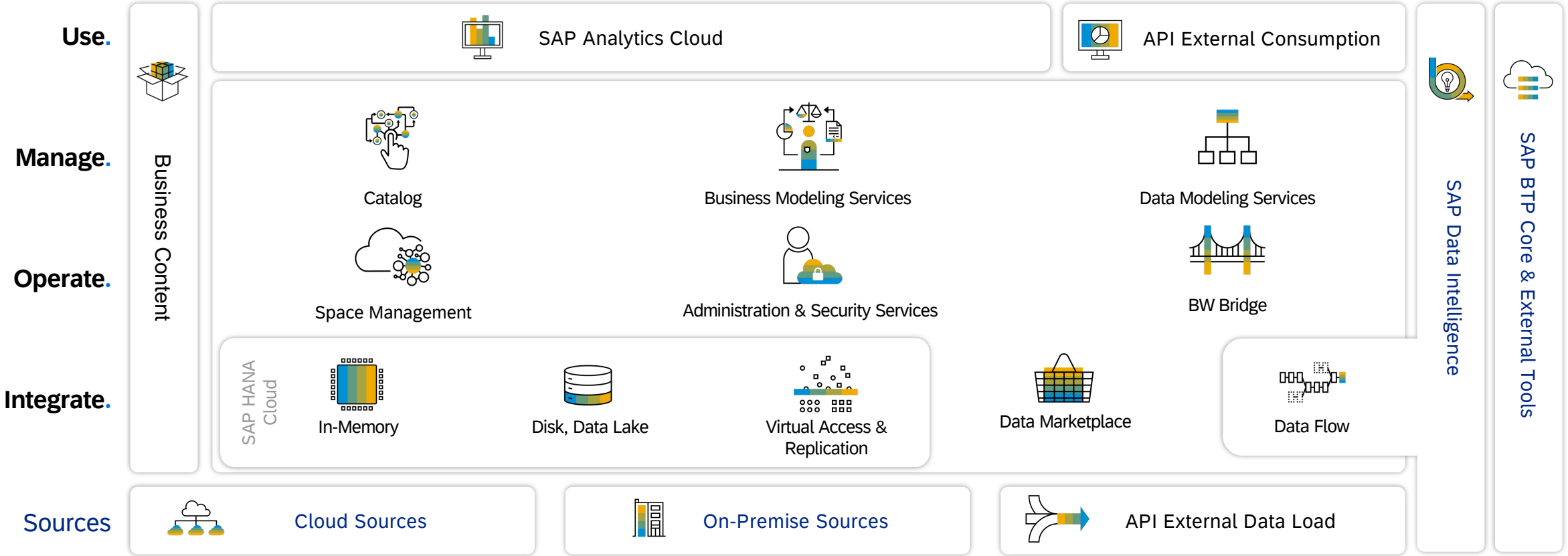
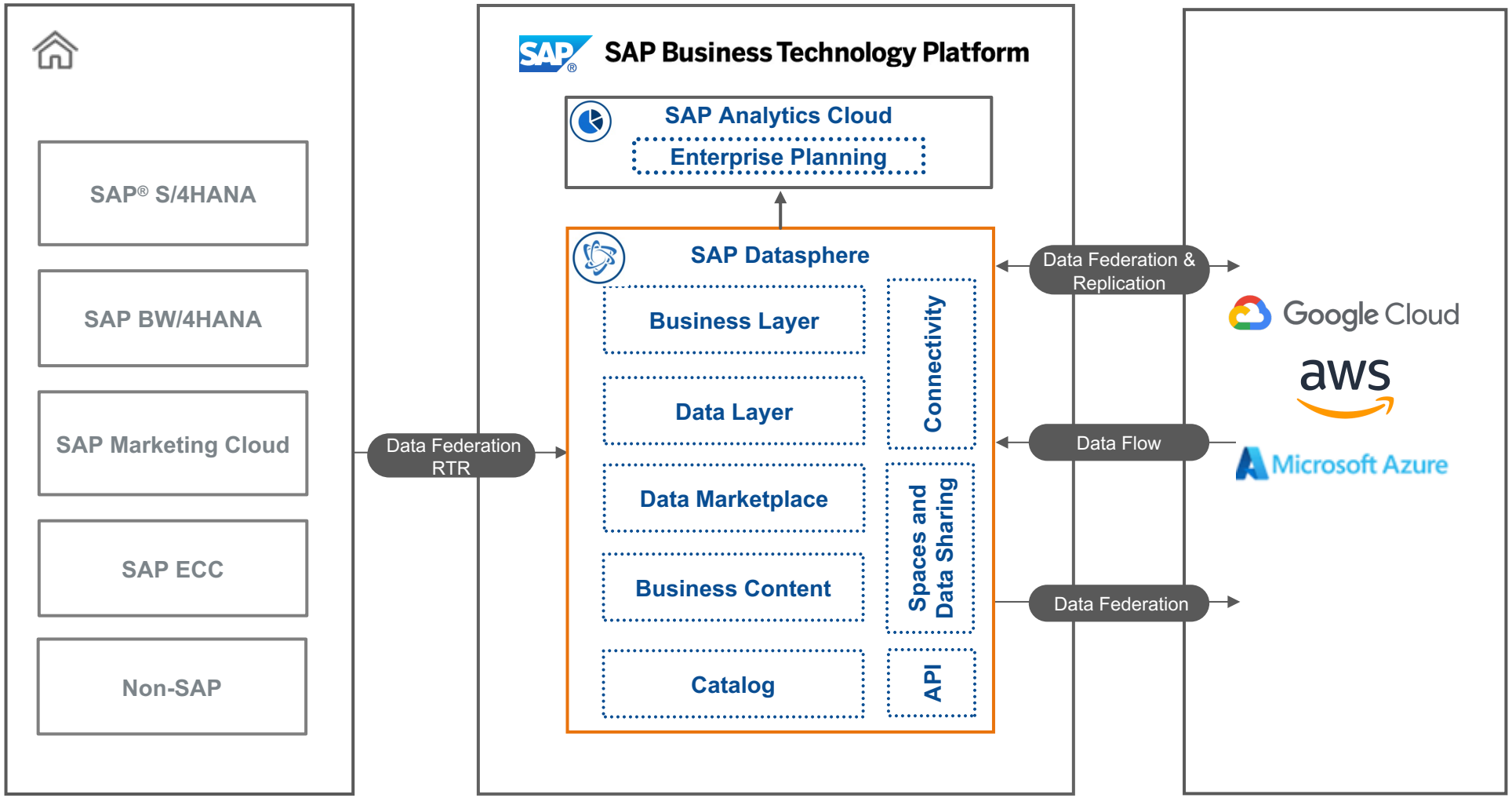
SAP Datasphere

A Common Data Foundation for Trusted Enterprise-Wide Data



Provide your users an end-to-end view of their data landscape that is trusted, secure, and actionable

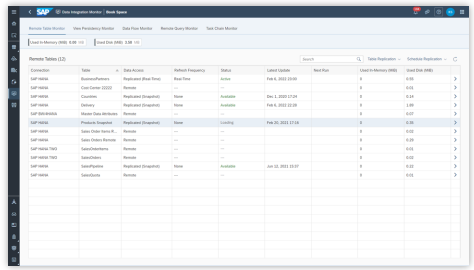
Reference Architectures...



Integrate...

Integrate. Open for Virtual Access and Persistence

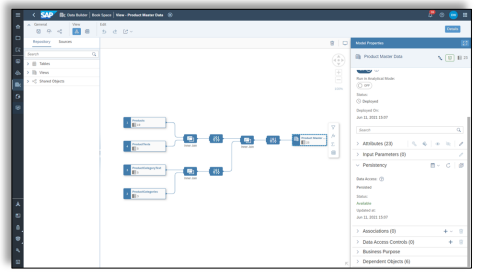
Virtual Access



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

Persistence



Remote table replication

- Real-time replication or snapshots using single entities

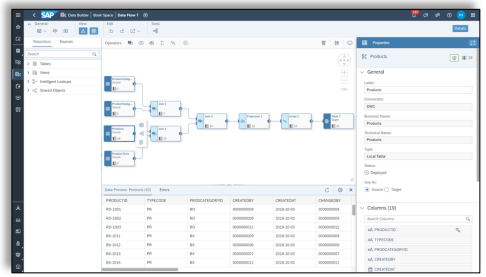
Replication flow

- Replication with multiple entities and flexible targets

View Persistence

- Materialize view output results in a stable persistence

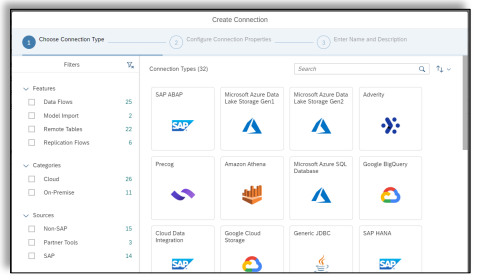
Data Flow



Batch loads & transformations

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

External Tools



Integrate with all data sources

Allow external data movement tools like SAP Data Services, SAP Data Intelligence, SAP OpenConnectors, SnapLogic, Precog, Adverity, etc. to bring data into the system using SQL interfaces and the open SQL schema

Integrate. Data Sources Overview

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

Hyperscaler & Cloud Apps

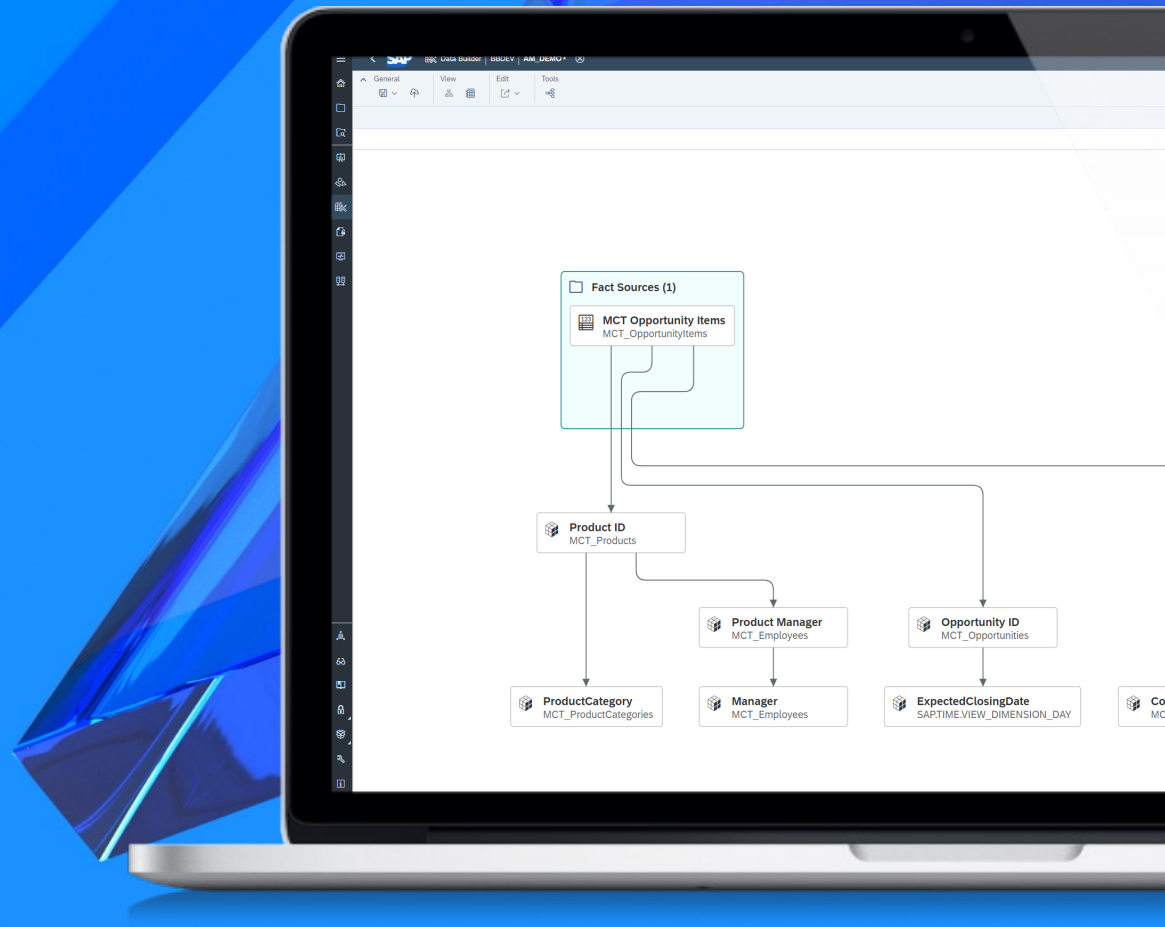
- Google Cloud Storage
- Google BigQuery
- Azure SQL Database
- Azure Blob Storage
- Azure Data Lake Store Gen1
- Azure Data Lake Store Gen2
- Amazon S3
- Amazon Athena
- Amazon Redshift
- HDFS
- **SAP Open Connectors**

External Tool Support

- SAP Data Intelligence*
- SAP Data Services*
- SAP HANA Smart Data Integration*
- SAP Landscape Transformation*
- Adverity
- APOS*
- Datazeit*
- Informatica*
- Precog
- Snaplogic*

SAP Help: Connection Overview

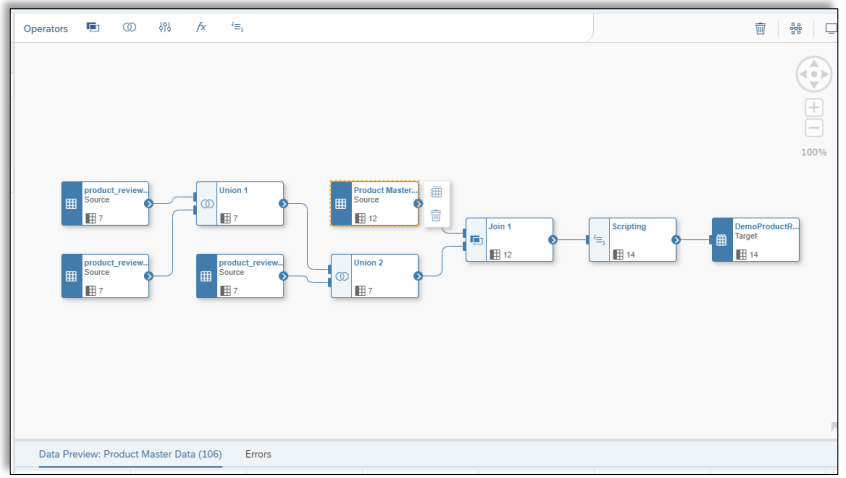
Demo...


Fact Sources (1)
MCT Opportunity Items
MCT_OpportunityItems
Product ID
MCT_Products
Product Manager
MCT_Employees
Opportunity ID
MCT_Opportunities
ProductCategory
MCT_ProductCategories
Manager
MCT_Employees
ExpectedClosingDate
SAP.TIME.VIEW_DIMENSION_DAY

Integrate. Data Flow – Transformation Capabilities

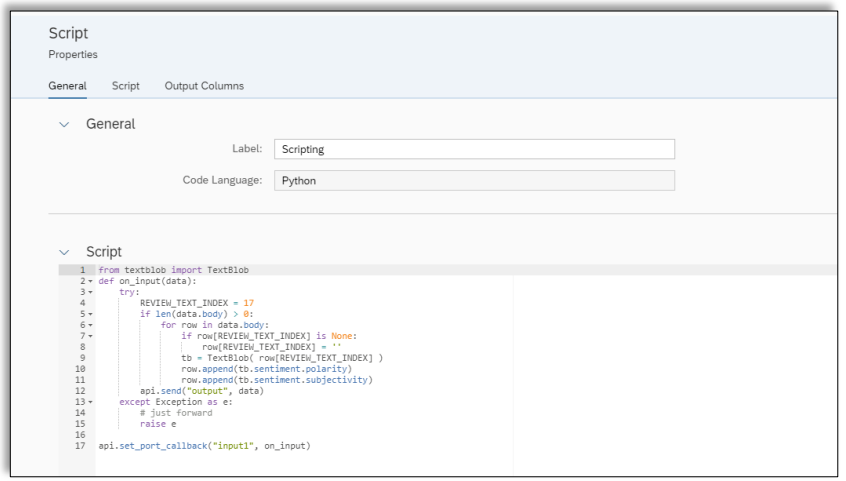
Standard Transformations

- Combine data sets with no code operators for Projection, Aggregation, Join, Filter, Union, Add Table
- Data source can be tables, ABAP CDS views, OData, remote files (JSON/JSONL, CSV, ORC, EXCEL, or PARQUET)
- Target mode: Append/Upsert, Truncate, Delete



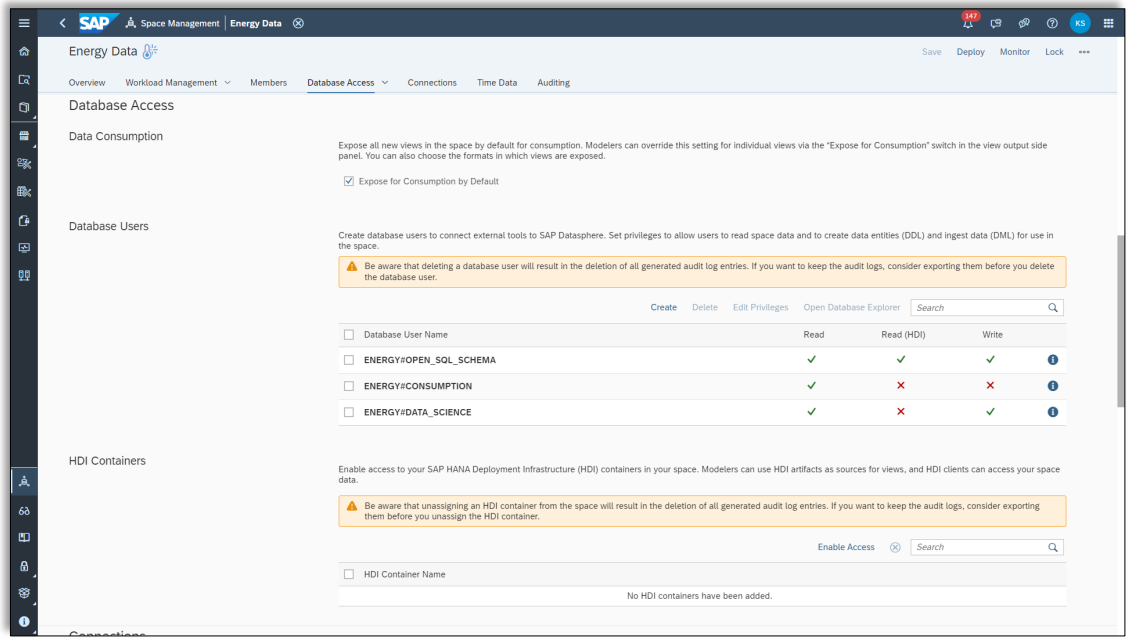
Scripting

- Advanced transformation requirements like extraction of text
- Embedded scripting editor in Data Flow Modeler
- Support of standard Python 3 scripting language



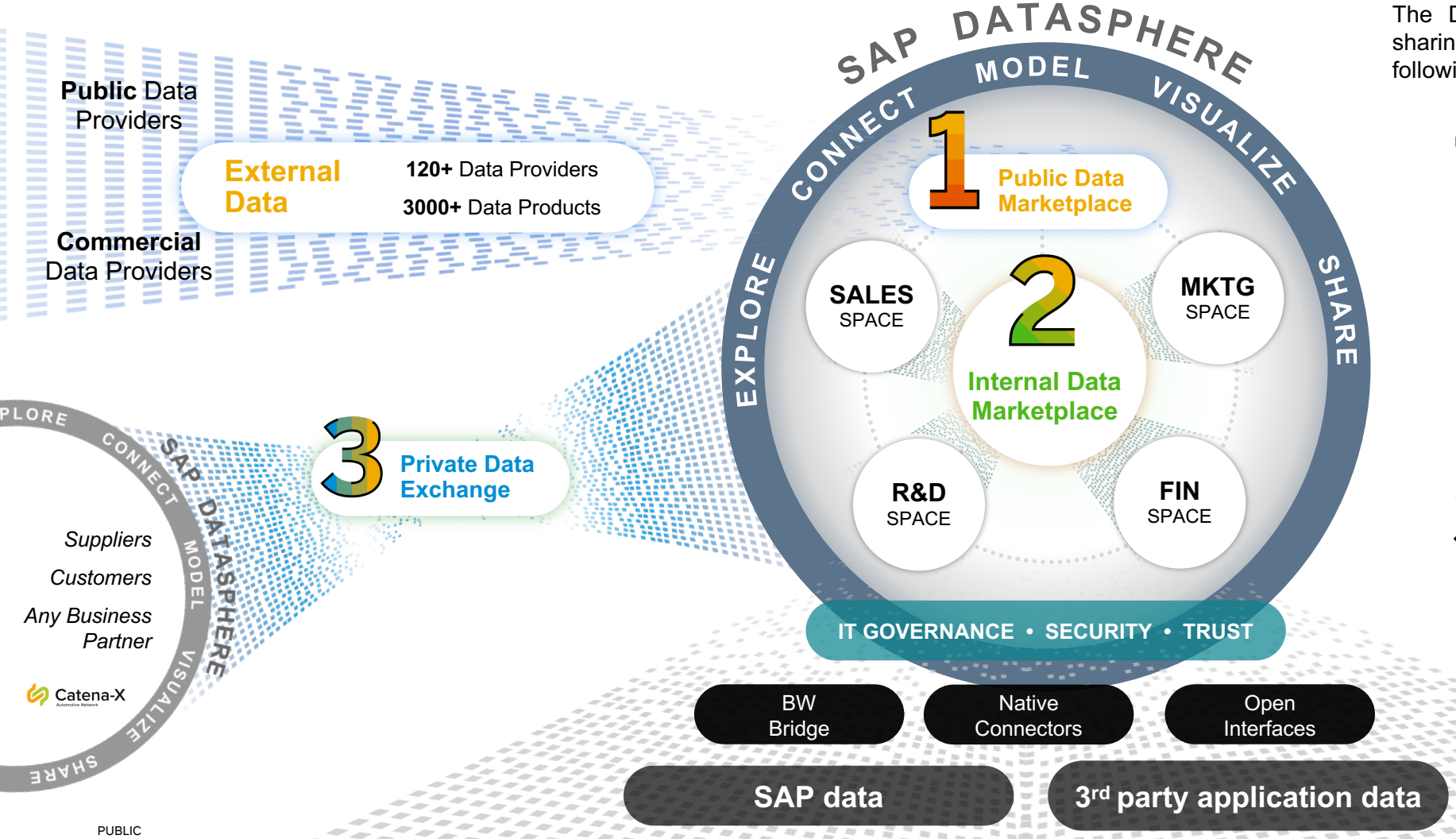
Integrate. Open SQL Schema for Data Integration via SQL API

- Enabling external tools access to create artifacts and to write data to an Open SQL Schema of a Space
- Provide SQL endpoint to dedicated database schema
- Connect via an external data integration tool or SQL client
- Usage of SAP HANA SQL capability (DDL & DML)
  - Create views, tables
  - Define & execute stored procedures
  - Leverage Data Anonymization and Data Masking
  - Automated Predictive Library (APL) and Predictive Analysis Library (PAL), if enabled in Space
- Consume data models from your space in the Open SQL Schema
- Start SAP Database Explorer from Space Management



Integrate. Data Marketplace

Access to external & internal data in clicks for better, faster & more scalable data collaboration



The Data Marketplace technology provides data sharing capabilities and processes to conduct the following use cases:

1 Public Data Marketplace

Discover & connect external data products for instant usage in your space for harmonization with other (internal) data artifacts.

2 Internal* Data Marketplace

Productize internal data assets for more scalable self-service and more effective adoption.

3 Private Data Exchange

Exchange data with suppliers, customers and other business partners in private environment within or between tenants.

* According to the Roadmap

Innovation Journeys for SAP BW Customers

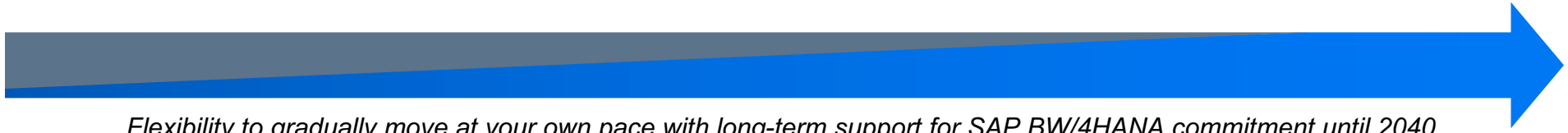
We recommend moving your SAP BW landscape in three steps

SAP BW/4HANA

Safeguard investments by retaining mature and complex on-premises systems or move to the private cloud – in support of the "RISE with SAP" strategy.

SAP Datasphere

Innovate with SAP's strategic target solution for all data warehousing use cases, in line with our data-to-value portfolio strategy.



Flexibility to gradually move at your own pace with long-term support for SAP BW/4HANA commitment until 2040.

1

Innovate with new use cases within SAP Datasphere

unique innovation with SAP Datasphere as the foundation for a Business Data Fabric architecture – driving agility, business empowerment, data warehousing, and accelerated time-to-value

2

Gradually Move in Alignment with your SAP S/4HANA transformation

Leverage hybrid functionality to modernize the planning and analytics stack on top of SAP BW (IBP, Add-Ons, Applications…)

3

Replace SAP BW

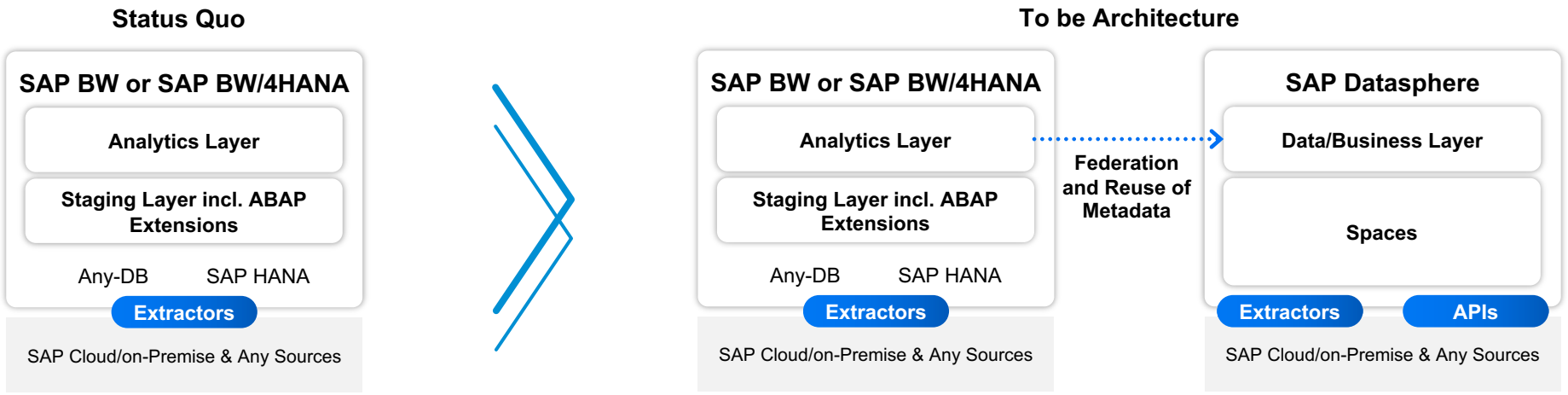
with an modernized Analytics stack on top of SAP Datasphere

SAP Datasphere

Modernize data landscape

Hybrid.

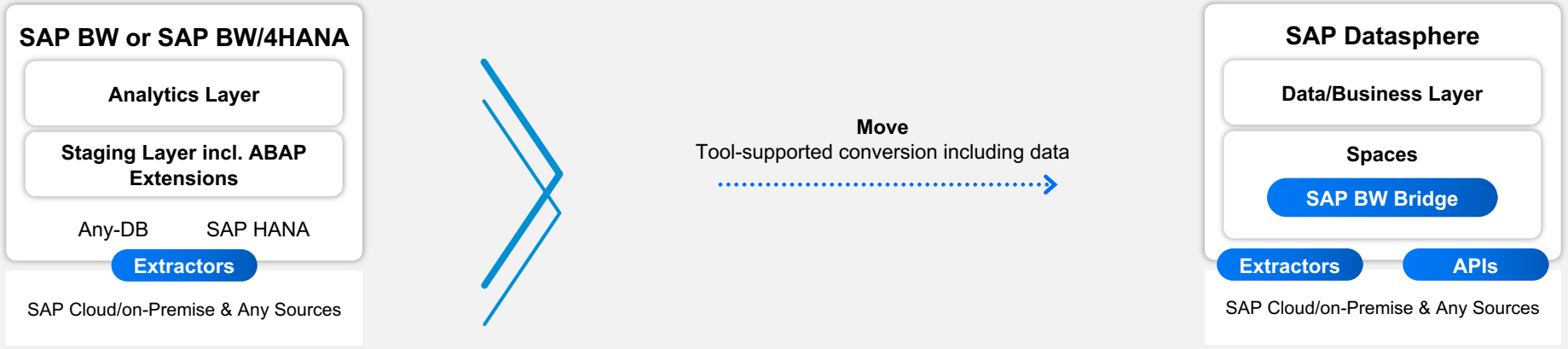
Combining SAP BW or SAP BW/4HANA with SAP Datasphere



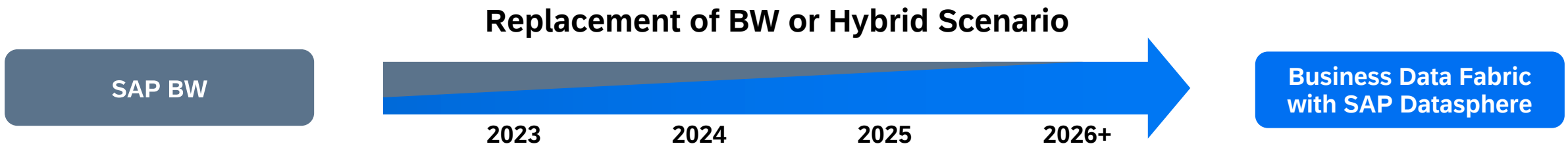
Switch/move from Hybrid to SAP Datasphere with SAP BW bridge

SAP BW bridge.

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



Modernize BW with SAP BW bridge



Partners & SAP can help with

Tool-supported migration

SAP RISE strategy full support

Free 90-day trial

System exploration tool

SAP partner network

Today, SAP Datasphere covers calculated and restricted key figures, hierarchies, time dependencies, and many other features of the BW world

Upcoming features

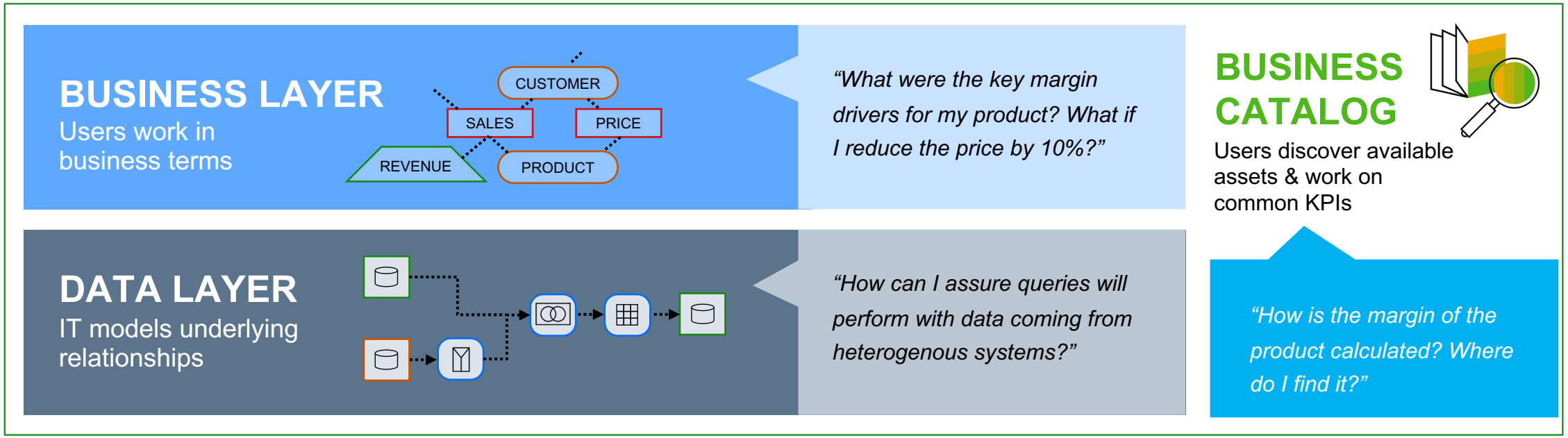
Non-Cumulative key figures, exit variables, constant selection & complex hierarchies

Remote Table with Delta for heavy data loads from SAP BW bridge

Unit Conversion support and expanded support of Input Variables from the status quo

Empowering Business Users with Analytical Modeling

Levels of modeling within SAP Datasphere



- Business entities and relationships with business language
- Model standardization and re-use for efficiency
- Independence for business users from IT

Public

SAP Datasphere Analytic Model

Multi-dimensional and semantically rich analytical modelling to answer business questions easier, faster and more efficiently

Model

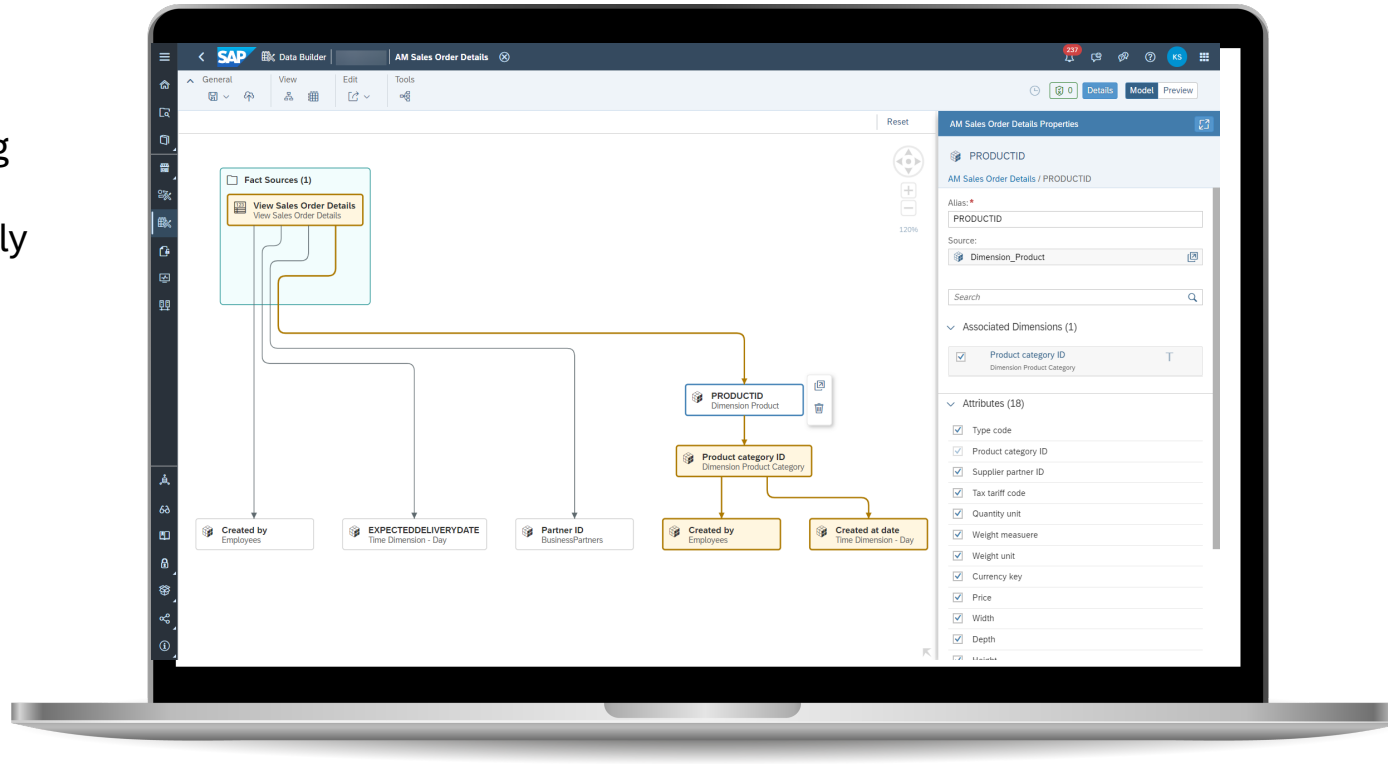
The Analytic Model allows **multi-dimensional and rich** analytical modelling with less effort to answer **business questions** easier, faster and more efficiently

Preview

The Analytic Model data offers an **analytical preview** incl. filtering, pivoting, hierarchies, etc. to analyze data directly in SAP Datasphere

Full integration with SAC

The Analytic Model in SAP Datasphere is also **seamlessly integrated** with SAP Analytics Cloud to analyze data in a hassle-free manner.



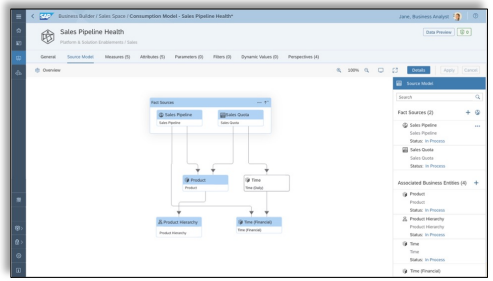
Modeling is for Everybody

Business Analyst
No Code / Low Code

Developer / Power User
Pro Code

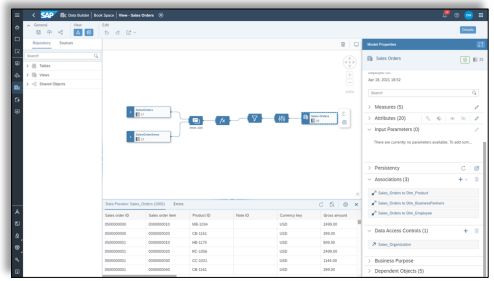
BUILT-IN EDITORS
modeling for all users

Business Modeling



- Allow for a greater degree of self-service
- Non-disruptive environment for business scenarios – independent from the data integration layer

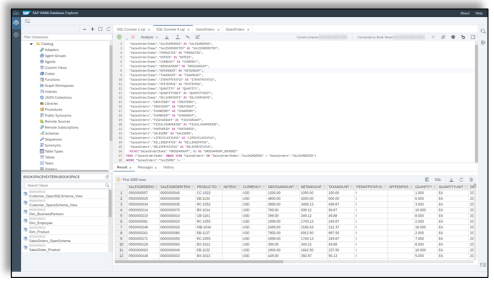
Graphical & Scripted



- Collection of no code/low code editors to support Graphical Modeling
- Model E/R-models, Tables, Views, SQL & SQL-Script Views
- Focuses on most-used modeling operators

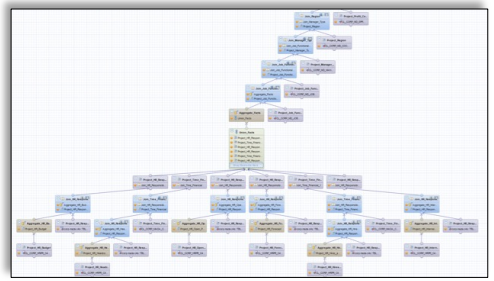
EXTERNAL EDITORS
integrated SQL Data Warehousing

Open SQL Schema



- Option to use SQL DDL & DML leveraging e.g. SQL Views, Tables, Procedures, etc.
- Leveraging existing SQL-tooling & skillset
- SAP Database Explorer

SAP HANA Deployment Infrastructure



- SAP HANA Cloud Modeling capabilities leveraging Calculation View, Flowgraph, Synonym, etc.
- Simply re-use HANA based Modeling within SAP Datasphere

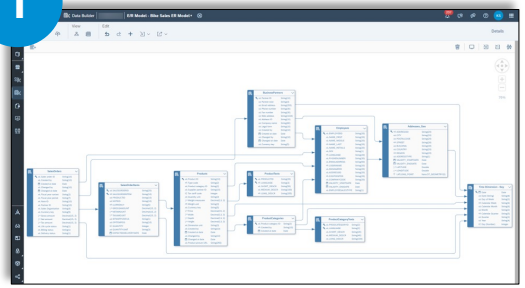
SAP Datasphere. Create Analytic Models

Developer / Power User
Pro Code

Business Analyst
No Code / Low Code

Prepare Dimensions & Facts

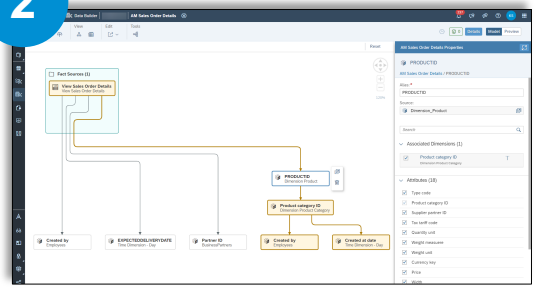
1



- Create and define your dimension and fact tables or views
- Associate them with other dimensions, text and/or hierarchy models (nested dimensions are supported)
- Enrich semantic type information
- Expose them for consumption

Build Your Analytic Model

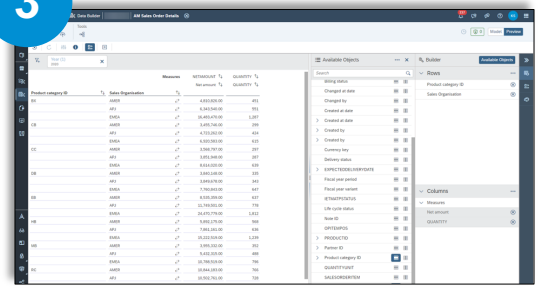
2



- Select your fact model including relevant attributes, measures and associated dimensions
- Define further drill down paths using nested dimensions
- Add calculated & restricted measures
- Use exception aggregations, variables, time-dependency and hierarchies where needed

Preview the Data

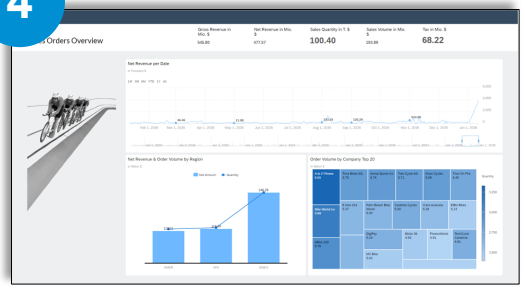
3



- Use preview to confirm correctness of the analytic model
- Apply filters, sorting, hierarchies, totals display and other features

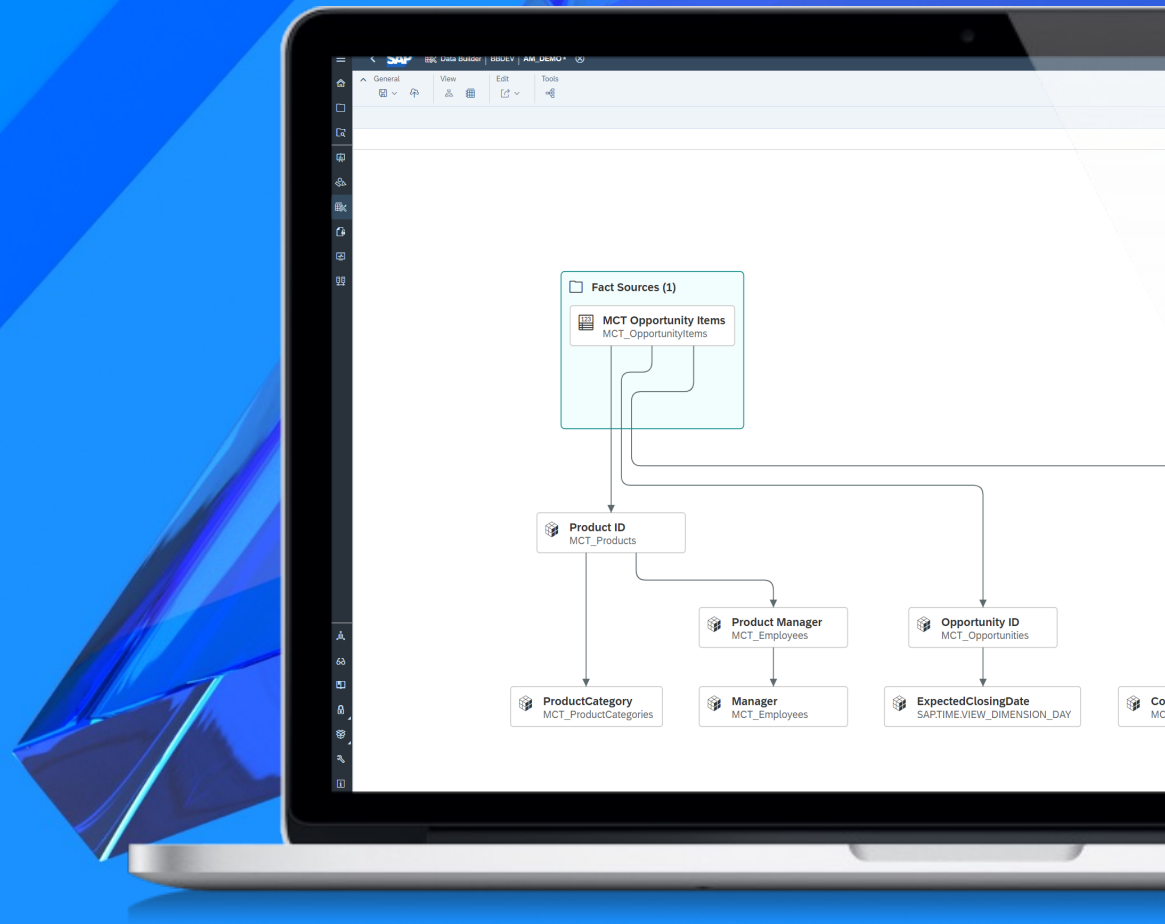
Create your Story

4

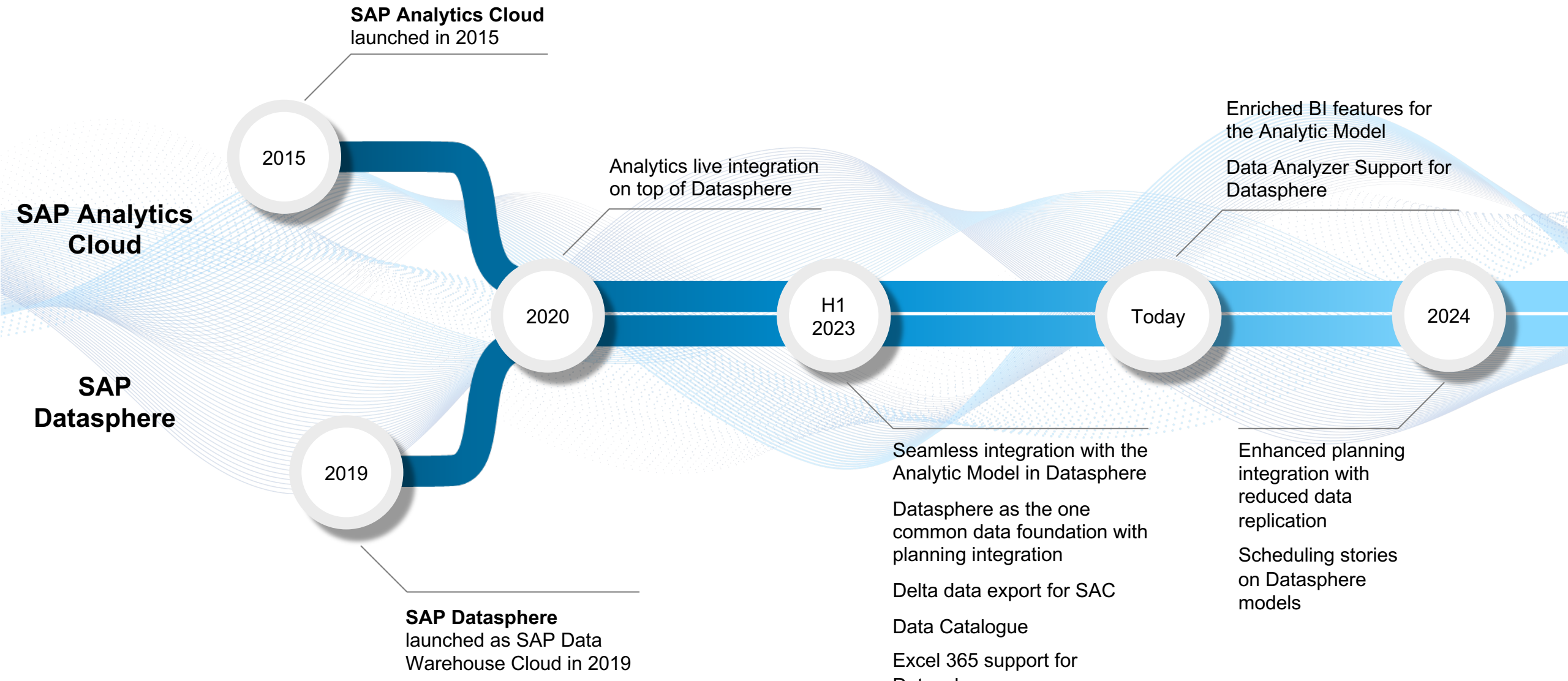


- Create a story in SAP Analytics Cloud based on the analytical view or
- Build new data models on top to integrate different data sources or associate master data views

Demo


Fact Sources (1)
MCT Opportunity Items
MCT_OpportunityItems
Product ID
MCT_Products
Product Manager
MCT_Employees
Opportunity ID
MCT_Opportunities
ProductCategory
MCT_ProductCategories
Manager
MCT_Employees
ExpectedClosingDate
SAP.TIME.VIEW_DIMENSION_DAY

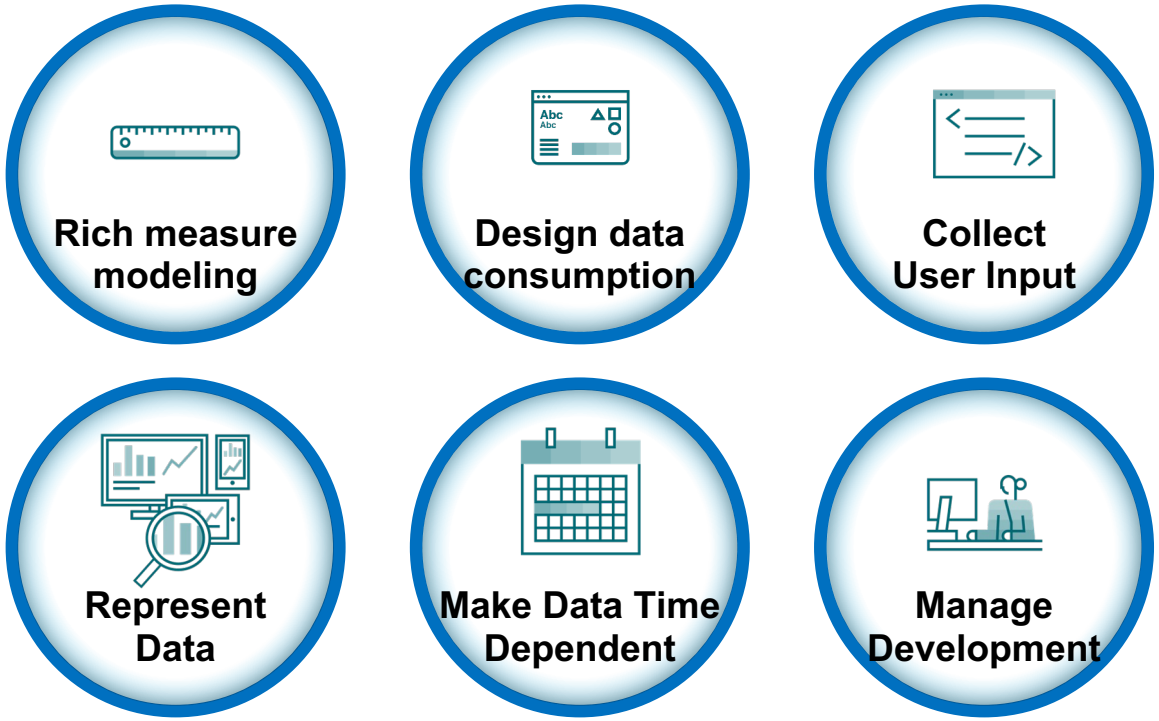
SAP Analytics Cloud and SAP Datasphere integration journey.

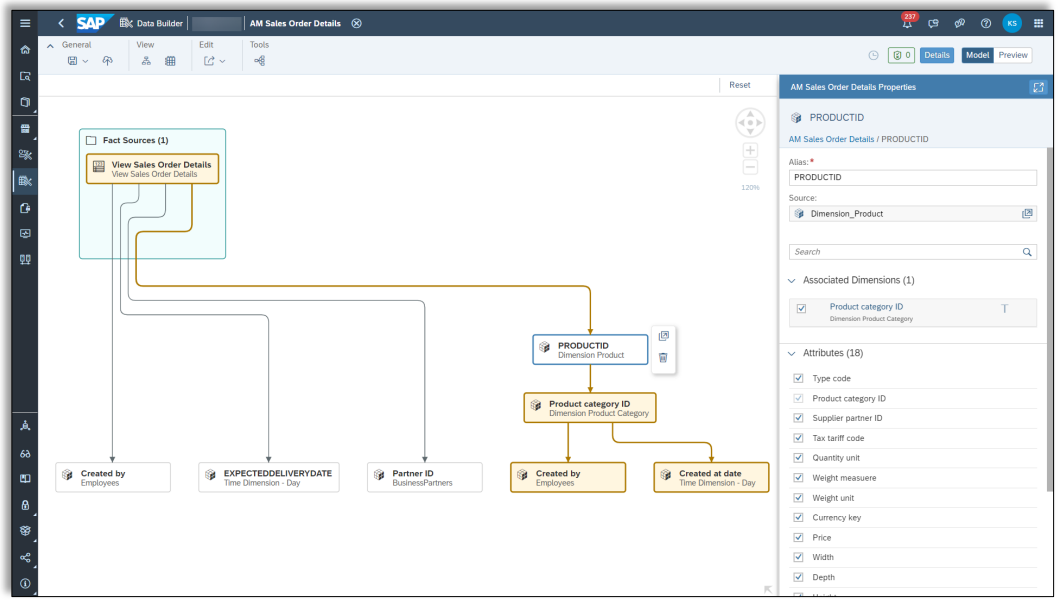


This is the current state of planning and may be changed by SAP at any time.

The Analytic Model becomes the analytical consumption artefact for all channels

allowing multi-dimensional and semantically rich analytical modelling to answer business questions easier, faster and more efficiently





Public

Space Management

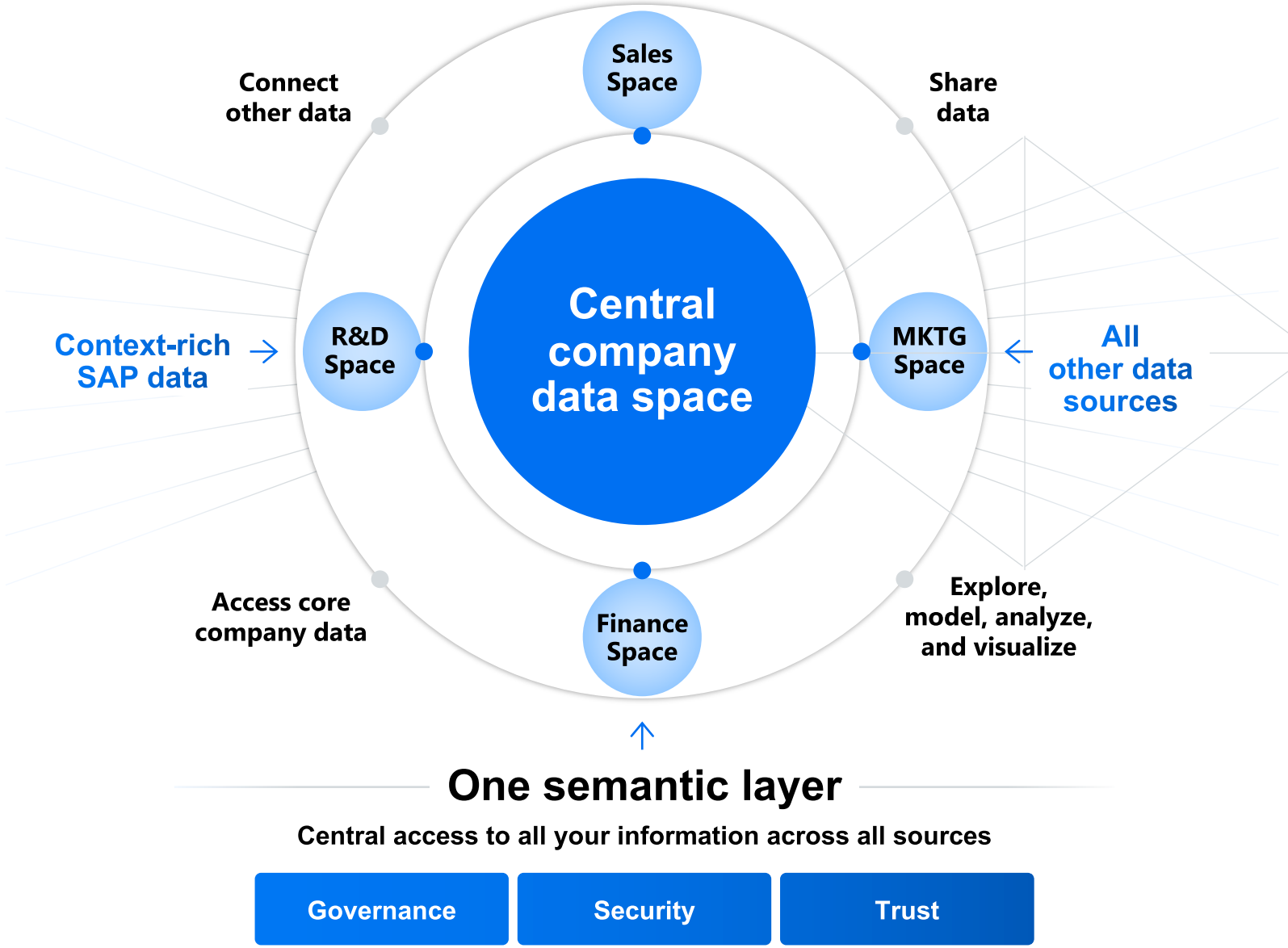
Simplify the data landscape

Enable self-service data access

Provide user-friendly access to data products that organize and manage data for different lines of business with SAP Datasphere Spaces

Implement powerful data preparation with complex transformations

Access data via SAP and non-SAP tools and open interfaces



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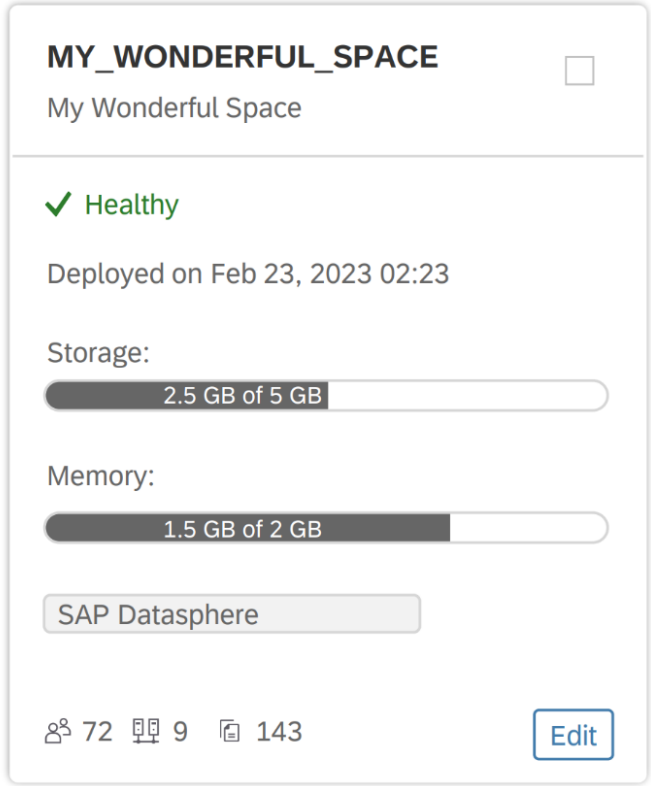
It all starts with a Space in SAP Datasphere

What is a Space?

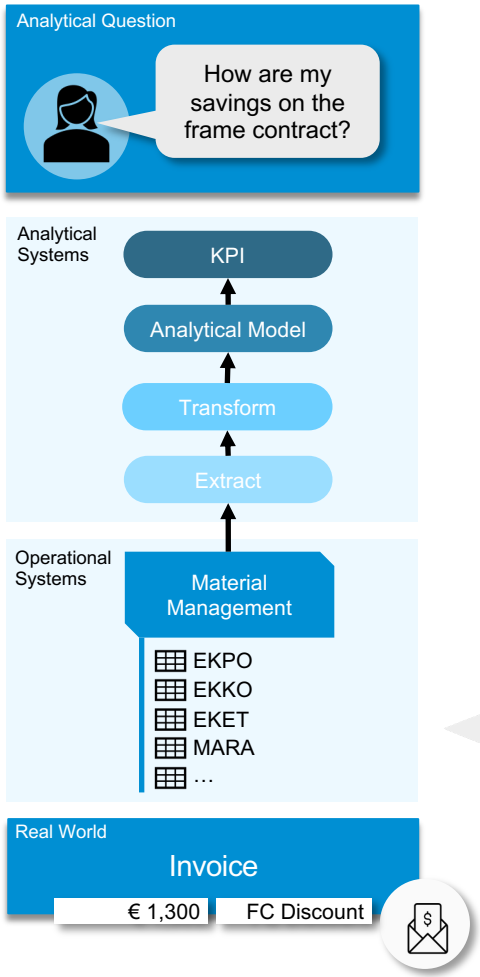
A space is a secure area created by an Administrator, in which members can acquire, prepare, and model data.



- **Resources** (Storage & RAM)
- **Users** (Only Members get access)
- **Connections** (SAP & non-SAP Systems)
- **Models** (Tables, Views, Data Flows, …)
- **Sharing** (Tables & Views)

Public

SAP Datasphere. Business Content Overview

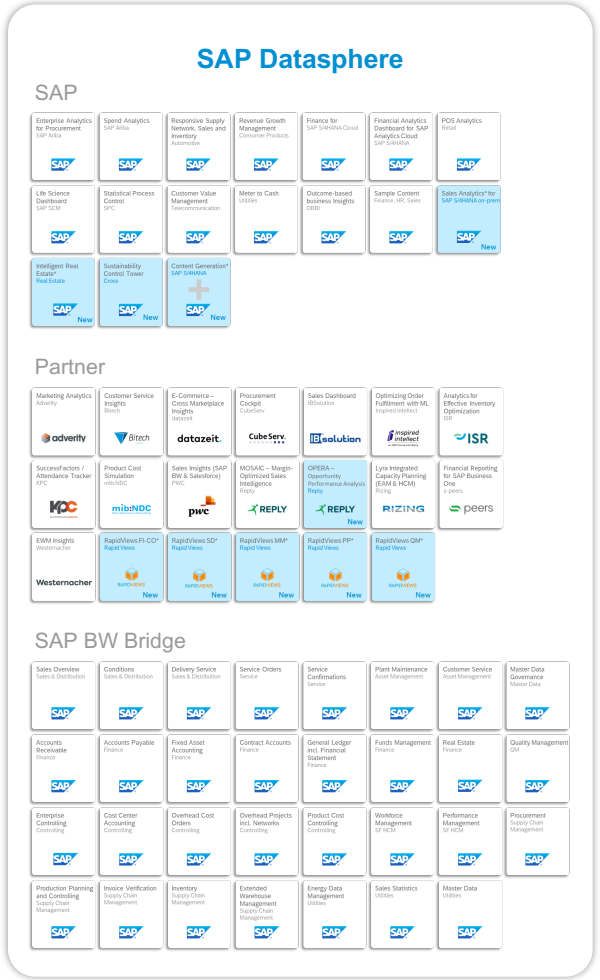


Business Content Collection

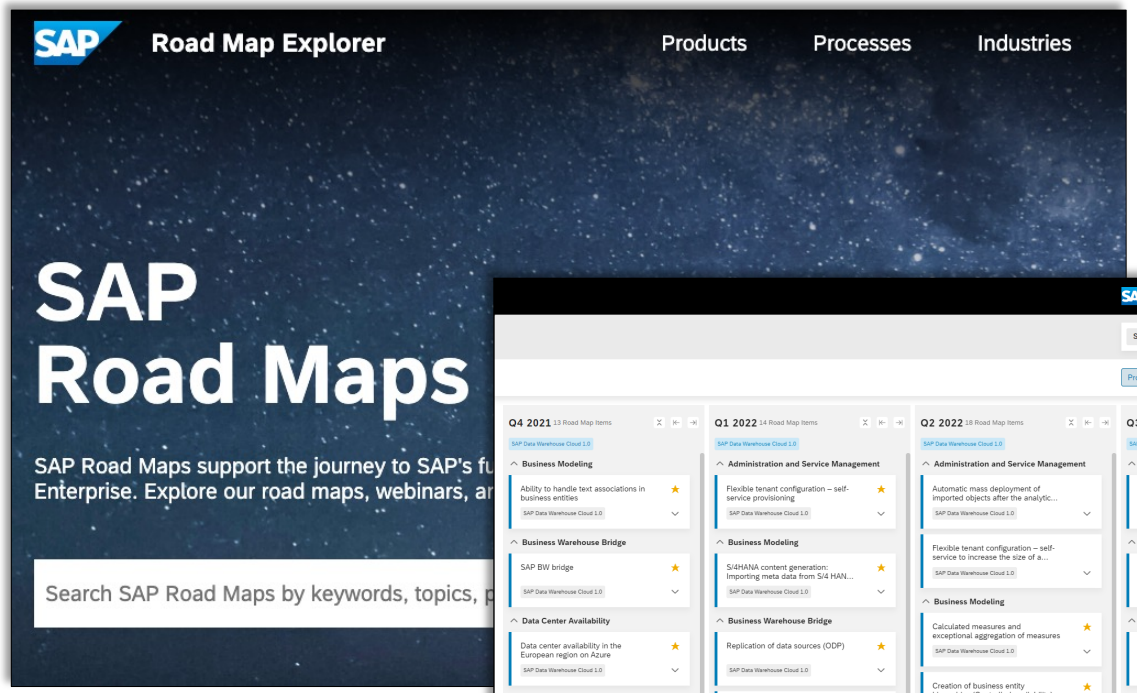
Leverage SAP's business expertise and knowledge from our ecosystem of partners with pre-built data models, semantic views of SAP application data, and transformation logic.

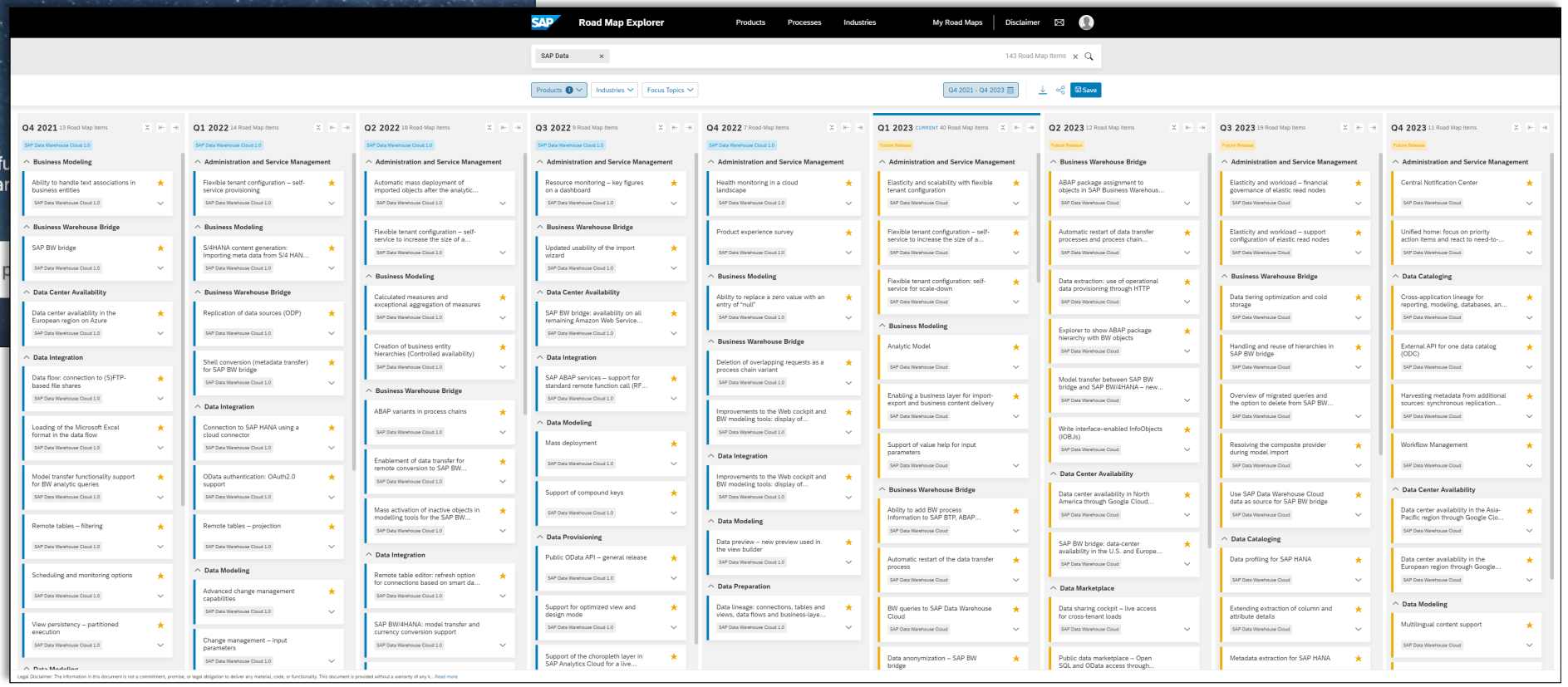
Continuously growing number of content packages

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



SAP Datasphere. SAP Road Map Explorer





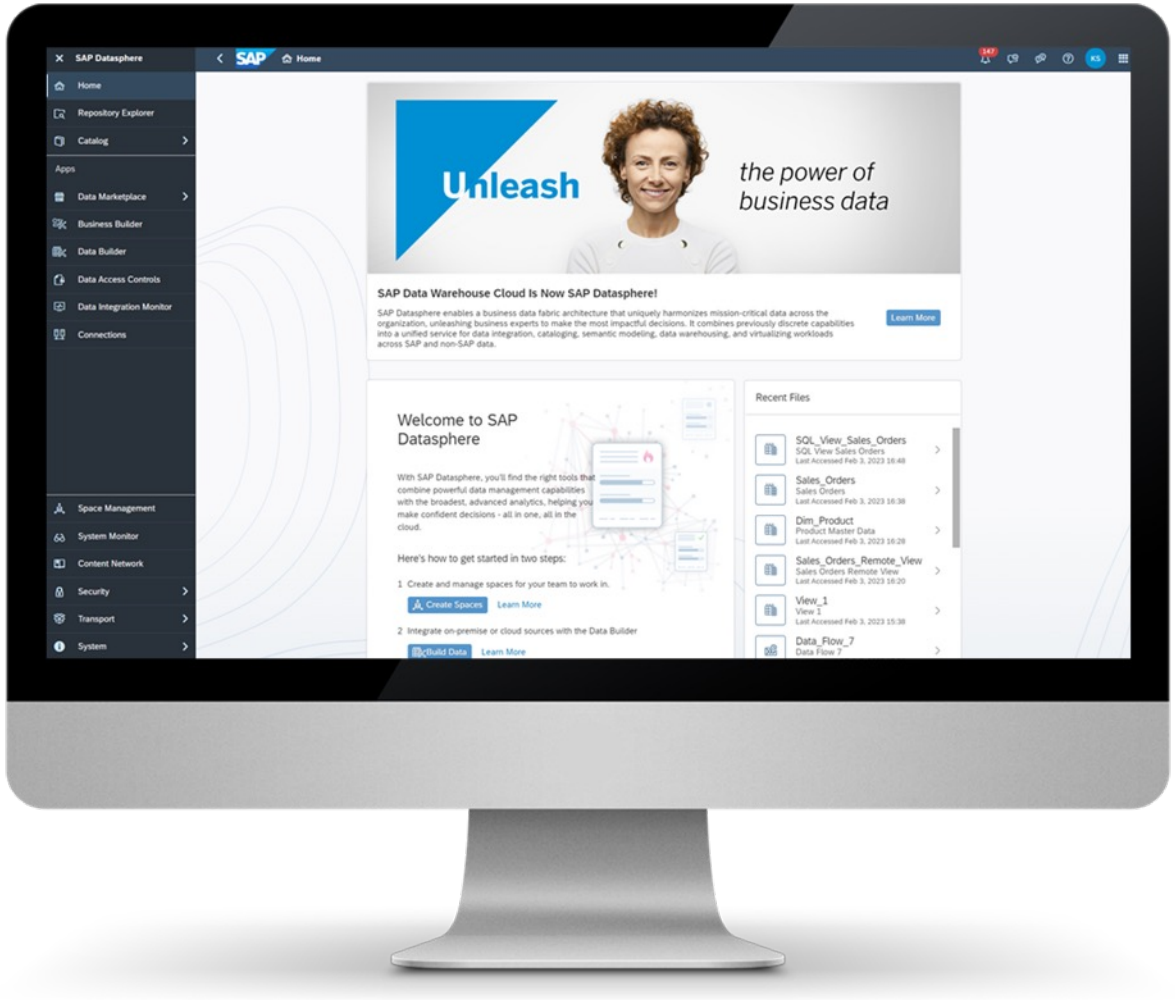
Check the latest information on the
SAP ROAD MAP EXPLORER

Start your data and analytics journey with SAP Datasphere

Take a tour with the Guided Experience

Learn more on SAP.com

Join the conversation in the SAP Community



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Q & A

Your Feedbacks are Valuable!!