SAP Datasphere

Unleash the power of business data

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Principal Solution Advisor

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INTERNAL – SAP and Customer Only

AGENDA

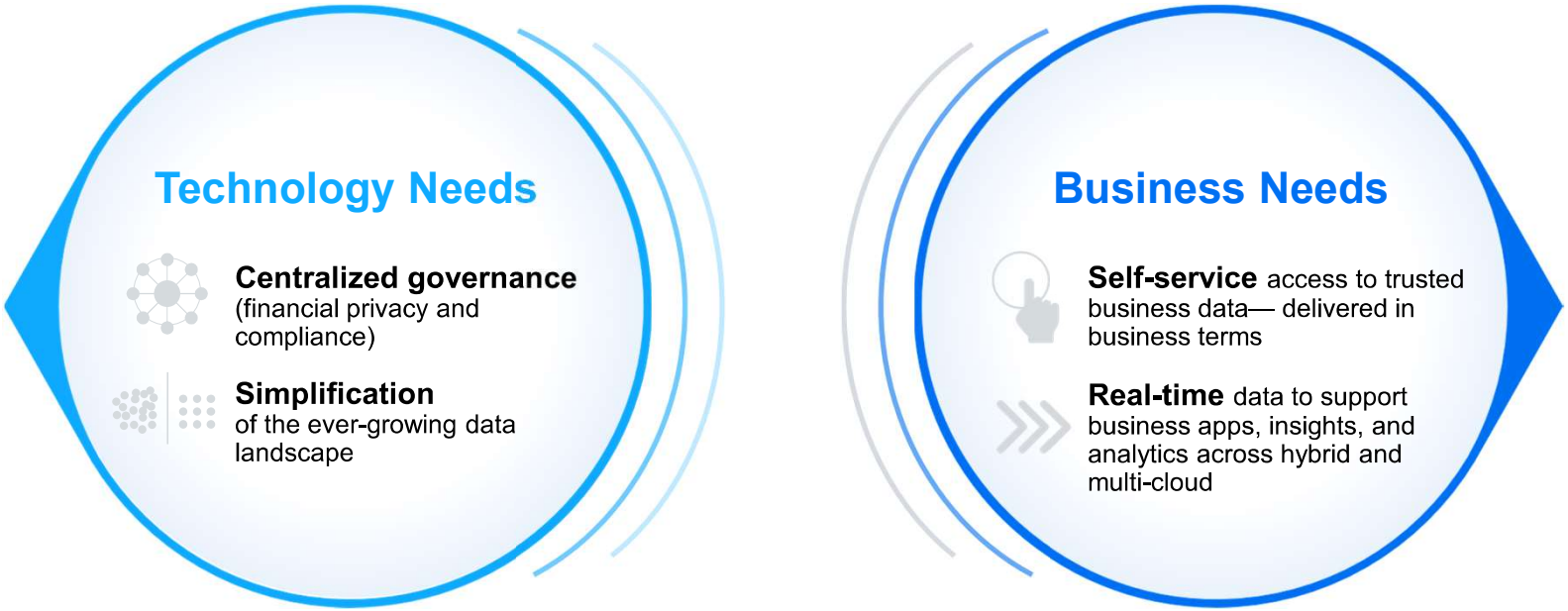
01 Data & Analytics Challenges

02 SAP Datasphere

03 Business Value

04 Q&A

Universal yet opposing data needs for business and technology stakeholders



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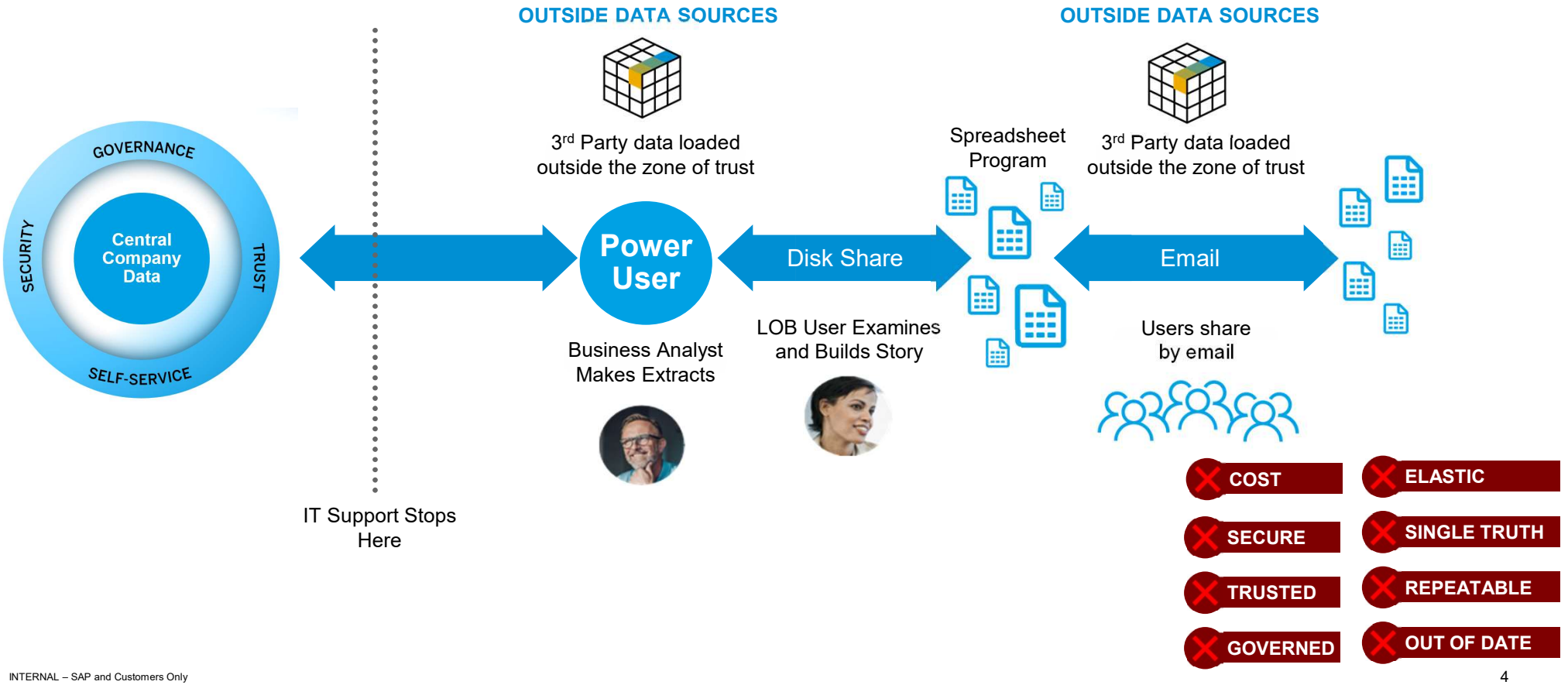
The Problem with ”Just give me the data”



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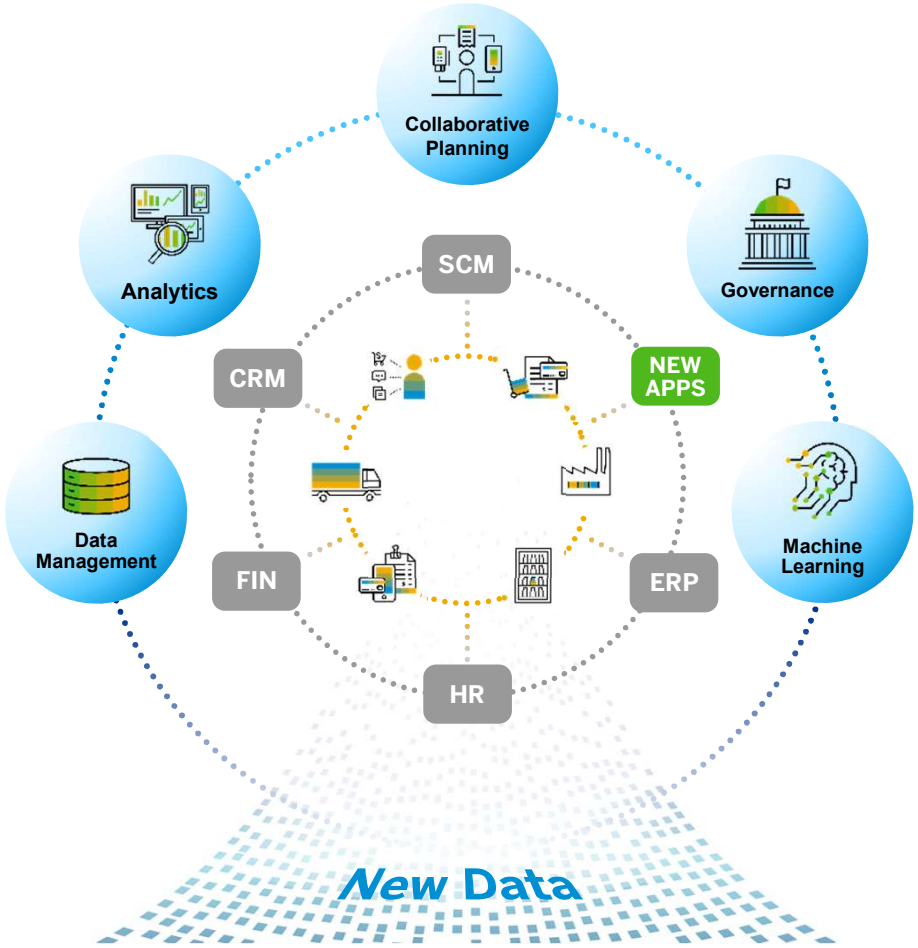
The Solution: Business Data Fabric



Bring new data into the context-rich environment of existing systems

Retain the full business perspective of SAP data – up to date and authoritative

Enable **collaborative insights** and planning across the enterprise

- ELASTIC
- SECURE
- SINGLE TRUTH
- TRUSTED
- REPEATABLE
- GOVERNED
- REAL-TIME

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SAP Datasphere is the foundation for a business data fabric architecture

Data consumers

Planning and analytics | **Intelligent data apps** | **Data science**

SAP Datasphere running in SAP BTP

Security

Access control

Availability

Self-service data access | Virtual data products

Data discovery | Business content, data marketplace, recommendations

Orchestration | Data transformation and data ops

Processing and persistency | Warehousing, business semantics (analytic/relational models), knowledge graph

Data governance | Metadata management, catalog, lineage, privacy, quality

Data ingestion | Data replication, data federation, real-time data, application integration

SAP and non-SAP data

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

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Unleash the power of business data with SAP Datasphere

Access authoritative data

Deliver business data in its business context

Make it effortless to model your business

Ensure governance throughout the data lifecycle

Enrich all data projects

Virtually access or physically store data from anywhere

Leverage trusted data partners and securely share data across the organization

Integrate with industry-leading data and AI platforms to capitalize on data investments

Simplify the data landscape

Innovate across hybrid architectures leveraging existing SAP models

Enable self-service data access

Leverage existing SAP BW models and transformations to innovate in the cloud

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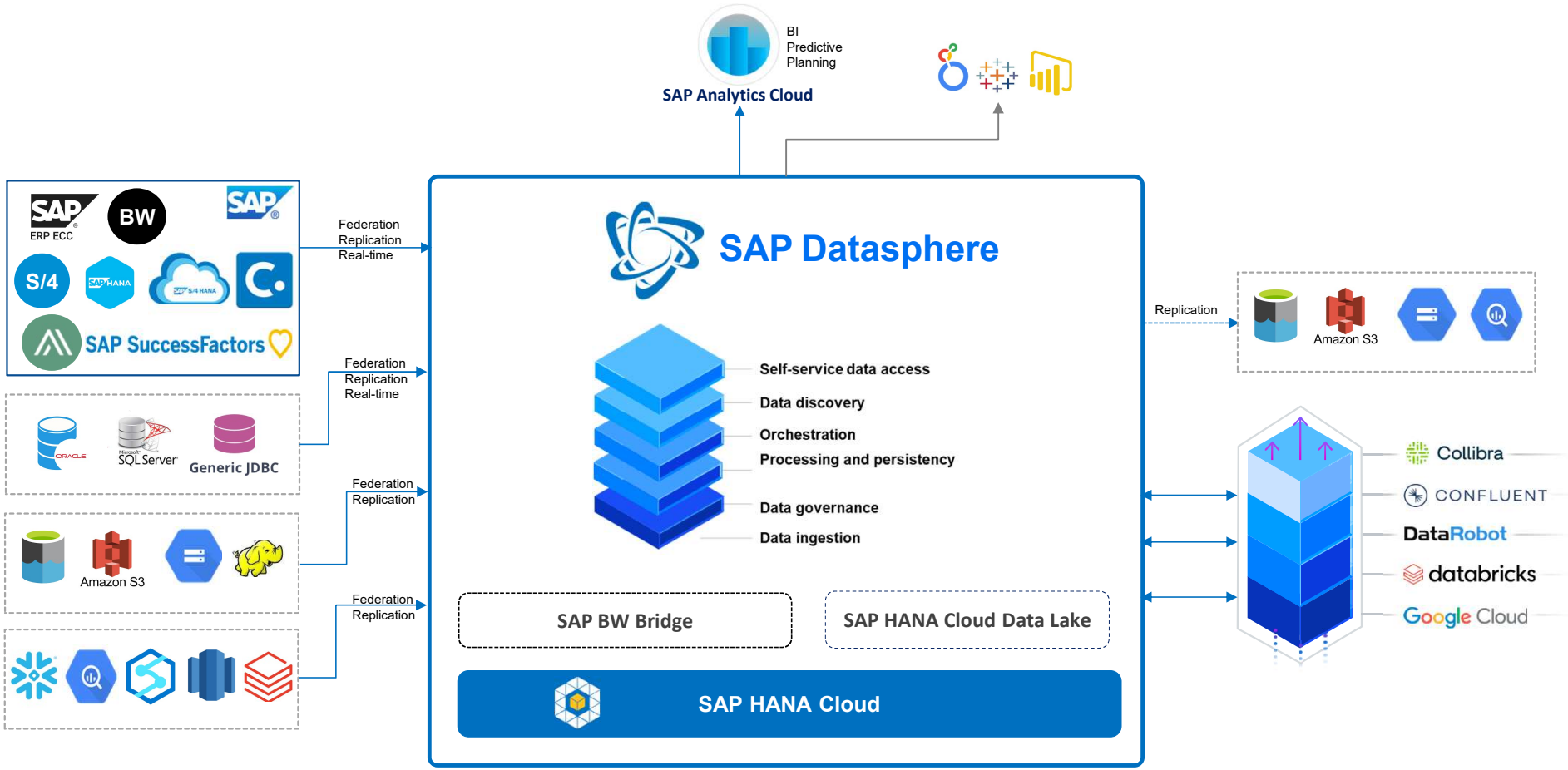
SAP Reference Architecture



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AGENDA

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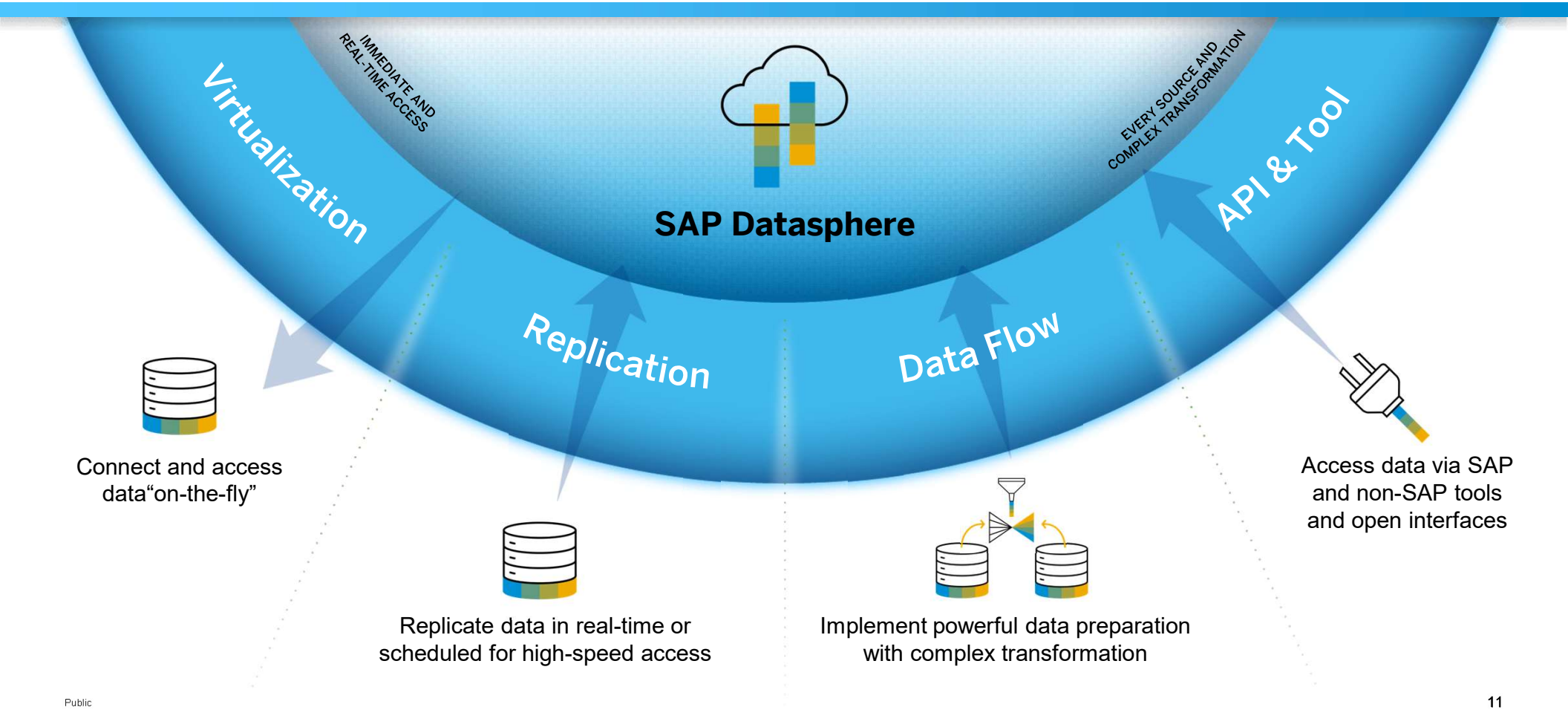
Connect and collect data flexibly – catering to all styles of data integration



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*

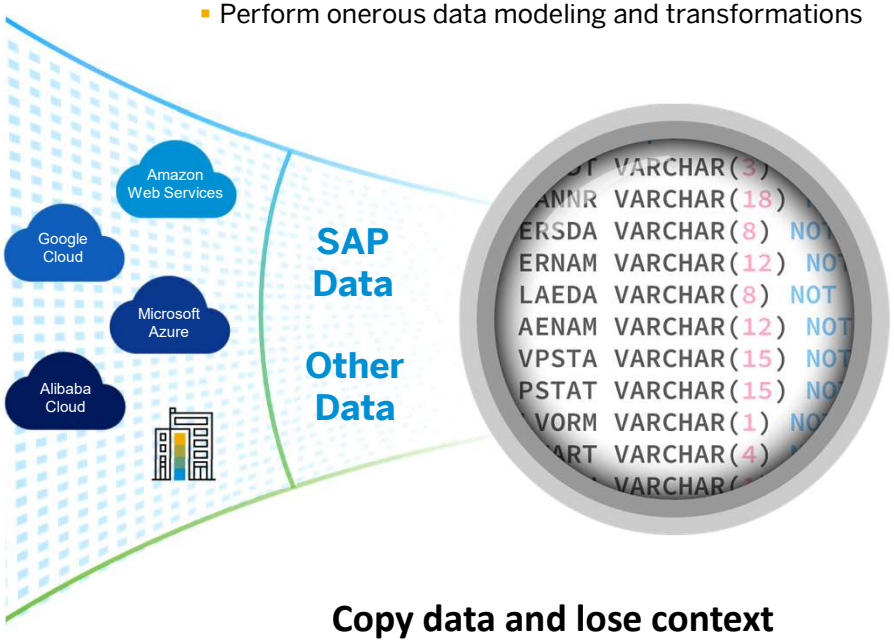
SAP Help: Connection Overview

Available Partner * No dedicated connection tile

Connect data with business context

Typical Approach

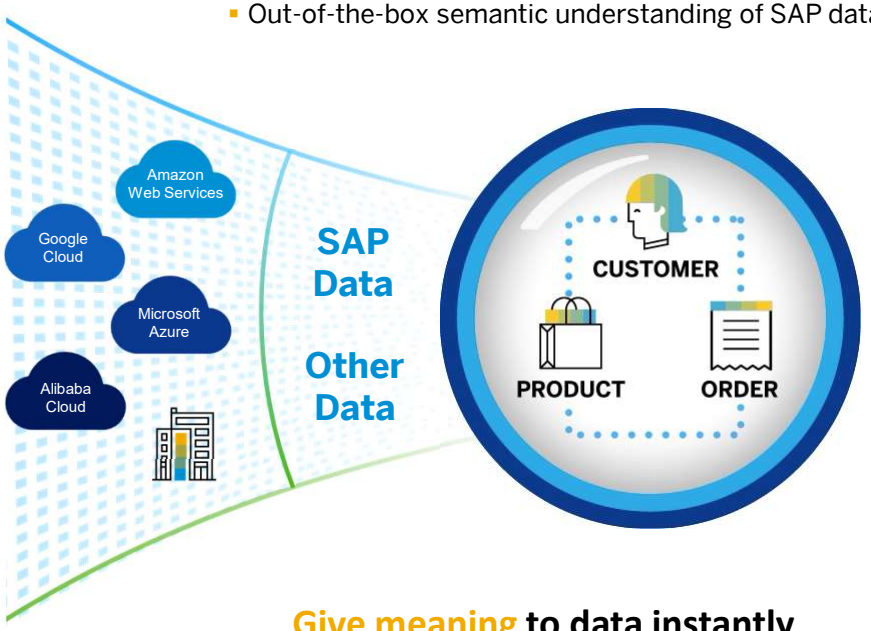
- Copy and move data to meet performance thresholds
- Make sense of obscure data structures and labels
- Perform onerous data modeling and transformations



Copy data and lose context

SAP Datasphere

- Connect or collect data with optimized performance and TCO
- Insight on real-time data across clouds and on prem
- Out-of-the-box semantic understanding of SAP data



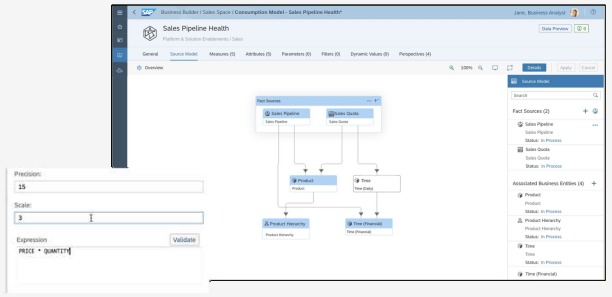
Give meaning to data instantly

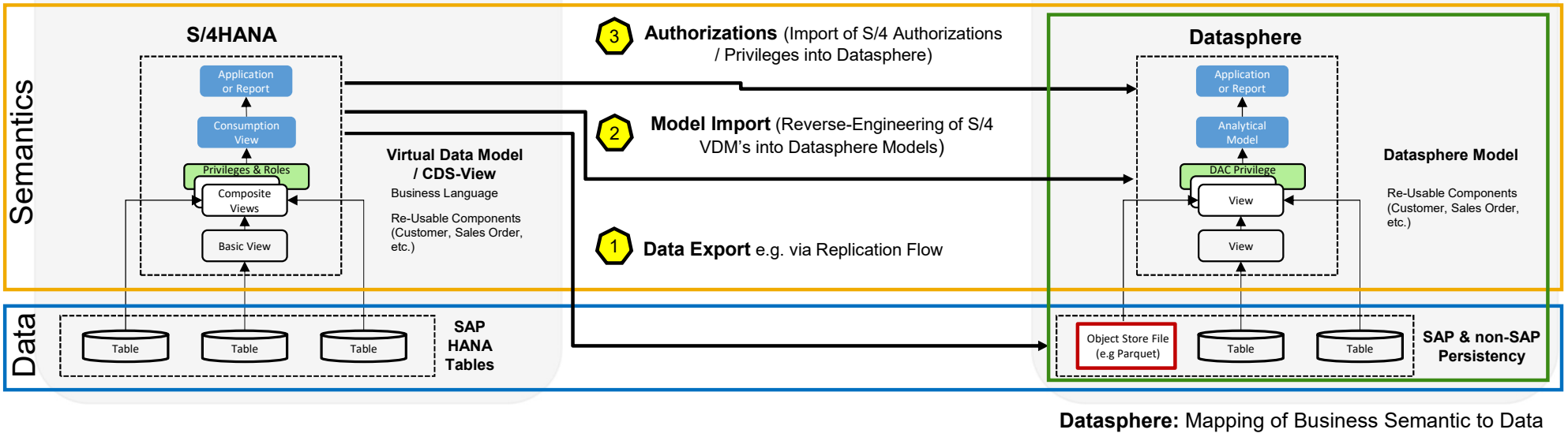
SAP Business Semantics

SAP Datasphere: Mapping of Business Semantic to Data

```
@AbapCatalog.sqlViewName: 'ZIFLDNM'
@EndUserText.label: 'Table Field'
@Analytics.dataCategory: #DIMENSION
@VDM.viewType: #BASIC
@ObjectModel.representativeKey: 'FieldName'                    3
@AccessControl.authorizationCheck: #NOT_REQUIRED
define view ZI_FieldName as select from dd02l inner join dd03l on dd02l.tabname   = dd03l.tabname
                                                               and dd02l.as4local = dd03l.as4local
                                                               and dd02l.as4vers  = dd03l.as4vers
  association [0..*] to ZI_FieldNameText as _FieldNameText  on $projection.TableName = _FieldNameText.TableName
                                                            and $projection.FieldName = _FieldNameText.FieldName
  association [0..1] to ZI_TableName as _TableName  on $projection.TableName = _TableName.TableName
{
  @ObjectModel.foreignKey.association: '_TableName'            1
  key dd03l.tabname as TableName,
  @ObjectModel.text.association: '_FieldNameText'              2
  key dd03l.fieldname as FieldName,

  _FieldNameText,
  _TableName
}
where ( tabclass = #tabclass.'TRANSP' or tabclass = #tabclass.'INTTAB' )
  and ( dd03l.comptype = #comptype.'E' or  dd03l.comptype = #comptype.' ' )
  and dd03l.as4local = 'A'
  and dd03l.as4vers = '0000'
```

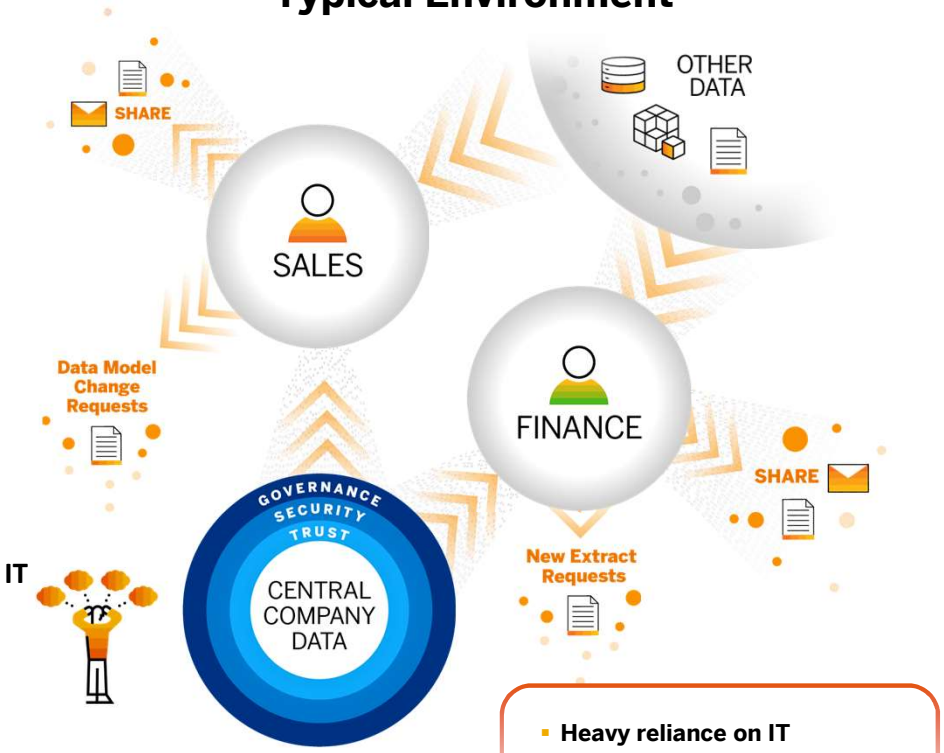




Datasphere: Mapping of Business Semantic to Data

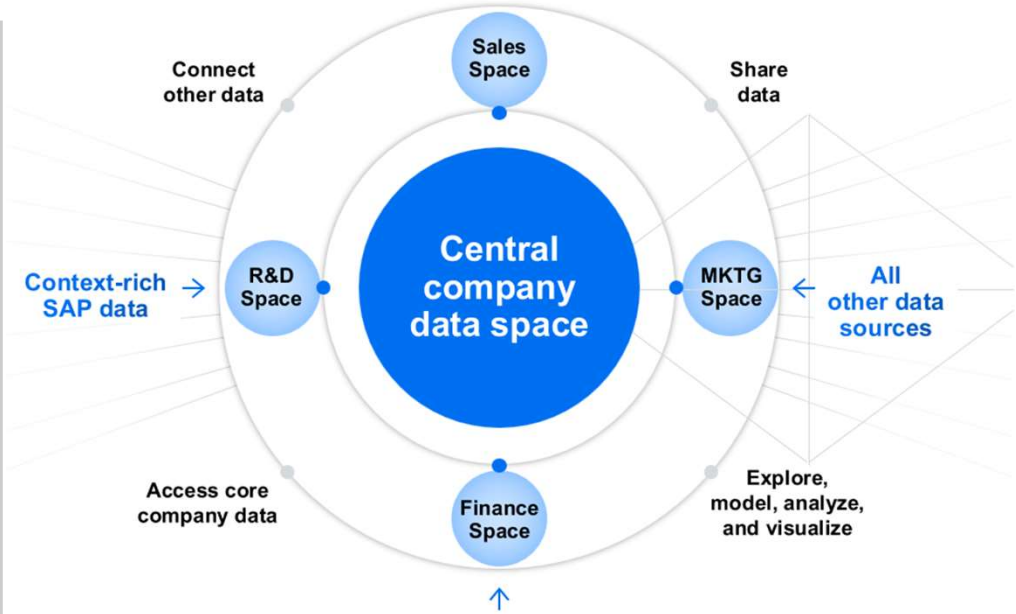
Unlock data insights with integrity

Typical Environment



- Heavy reliance on IT
- Delays and compliance risks
- Inaccurate insights

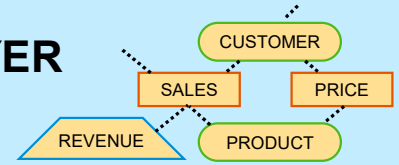
SAP Datasphere



- Self-service data modeling for all users
- Semantic business layer
- Data sharing and collaboration
- IT governance of resources and security

Manage. Collaborate in business terms

BUSINESS LAYER
Users work in business terms



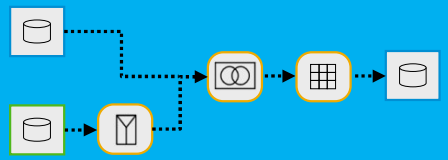
"What were the key margin drivers for my product? What if I reduce the price by 10%?"

BUSINESS CATALOG

Users discover available assets & work on common KPIs

"How is the margin of the product calculated? Where do I find it?"

DATA LAYER
IT models underlying relationships



"How can I assure queries will perform with data coming from heterogenous systems?"

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

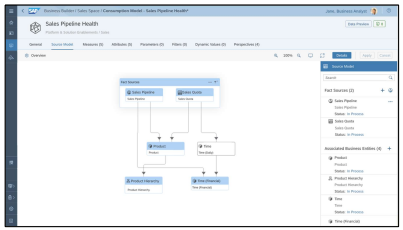
Manage. Modeling for Everybody

Business Analyst
No Code / Low Code

Developer / Power User
Pro Code

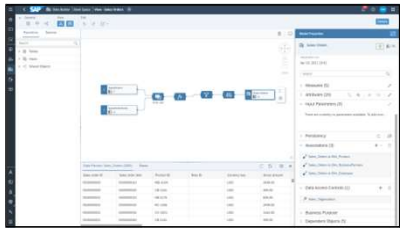
BUILT-IN EDITORS
modeling for all users

Business Modeling



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

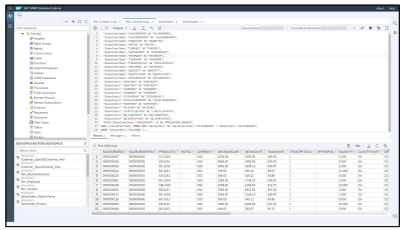
Graphical & Scripted



- 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

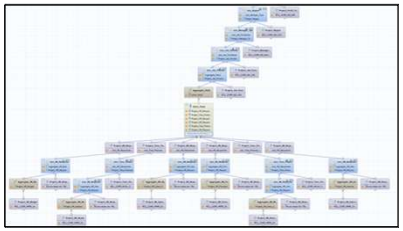
EXTERNAL EDITORS
integrated SQL Data Warehousing

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

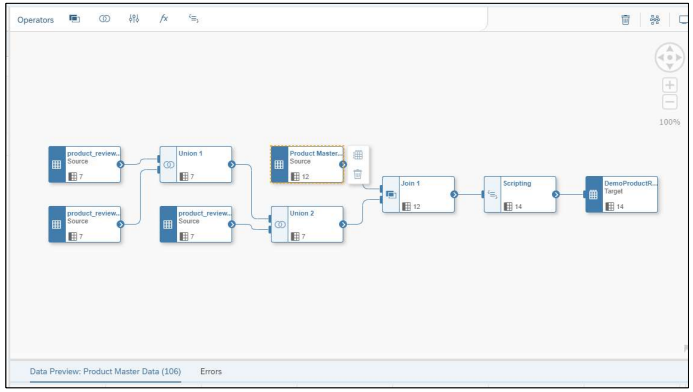


- SAP HANA Cloud Modeling capabilities leveraging Calculation View, Flowgraph, Synonym, etc.
- Simply re-use HANA based Modeling within SAP Datasphere

Integrate. Data Flow

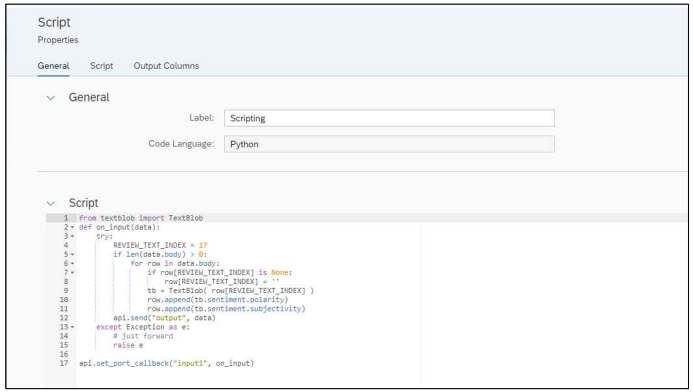
Standard Transformations

- 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

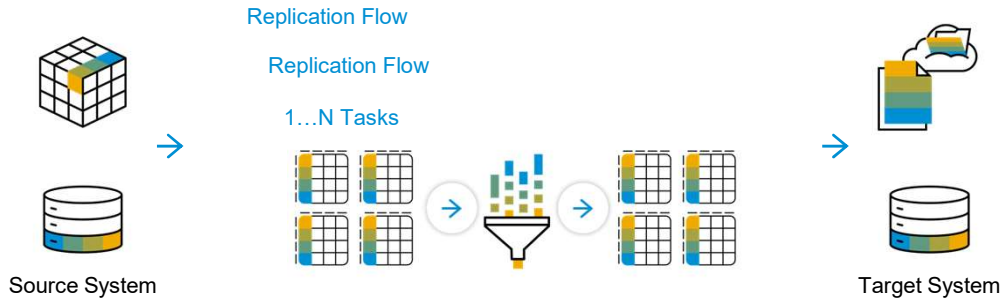
- Advanced transformation requirements like extraction of text
- Embedded scripting editor in Data Flow Modeler
- Support of standard Python 3 scripting language

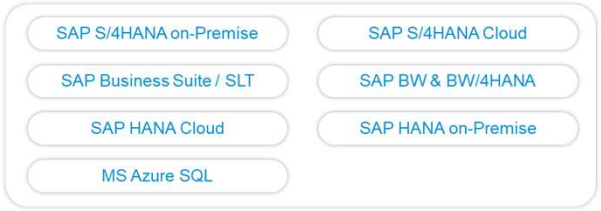


Integrate. Replication Flow

Enhancement of data replication use cases through a cloud based data replication tool

- Model data replication from a selected source to a selected target
- Focus on 1:1 replication with simple projections and filters
- Integrated user interface in Data Builder
- Integrated monitoring features in Data Integration Monitor
- Support initial load as well as delta load capabilities





Manage. Catalog enabling Governance

Discover

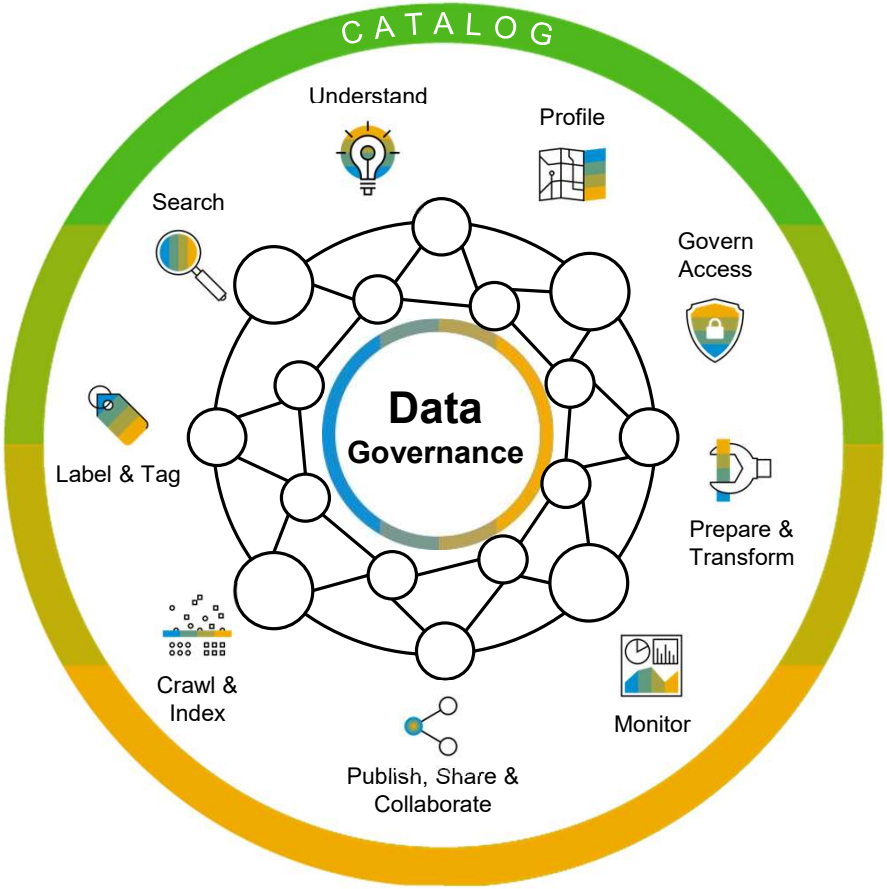
Discover data (*crawl*, *profile*, *organize*, *link*, and *enrich*) and make data **accessible** (*browse*, *search*)

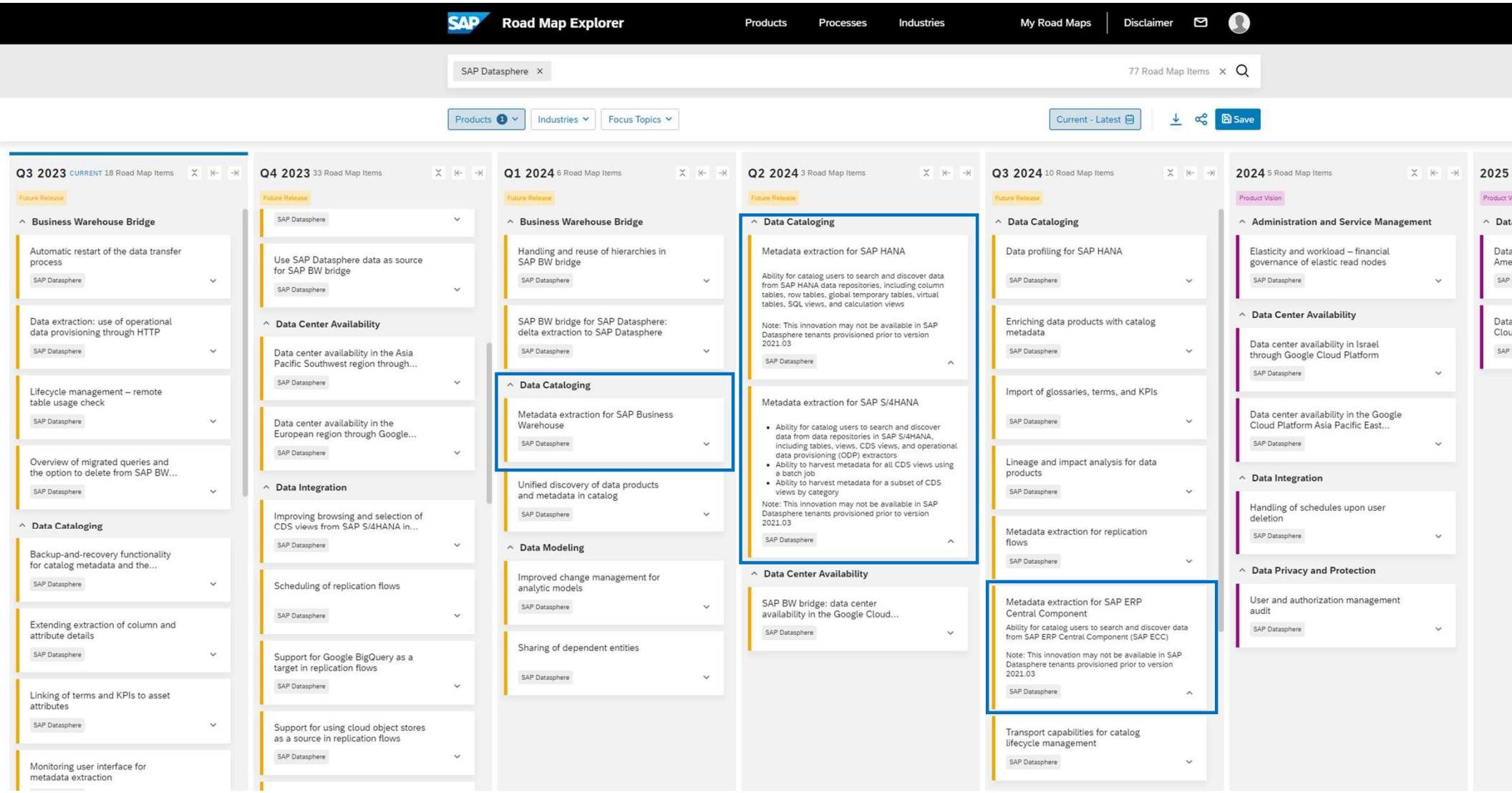
Organize

Classify, organize, and **understand data** (*location*, *attributes*, *quality*, *lineage*, *sensitivity*)

Curate

Enforce **centralized authorization** and **security** for data orchestration, and control **data quality standards**

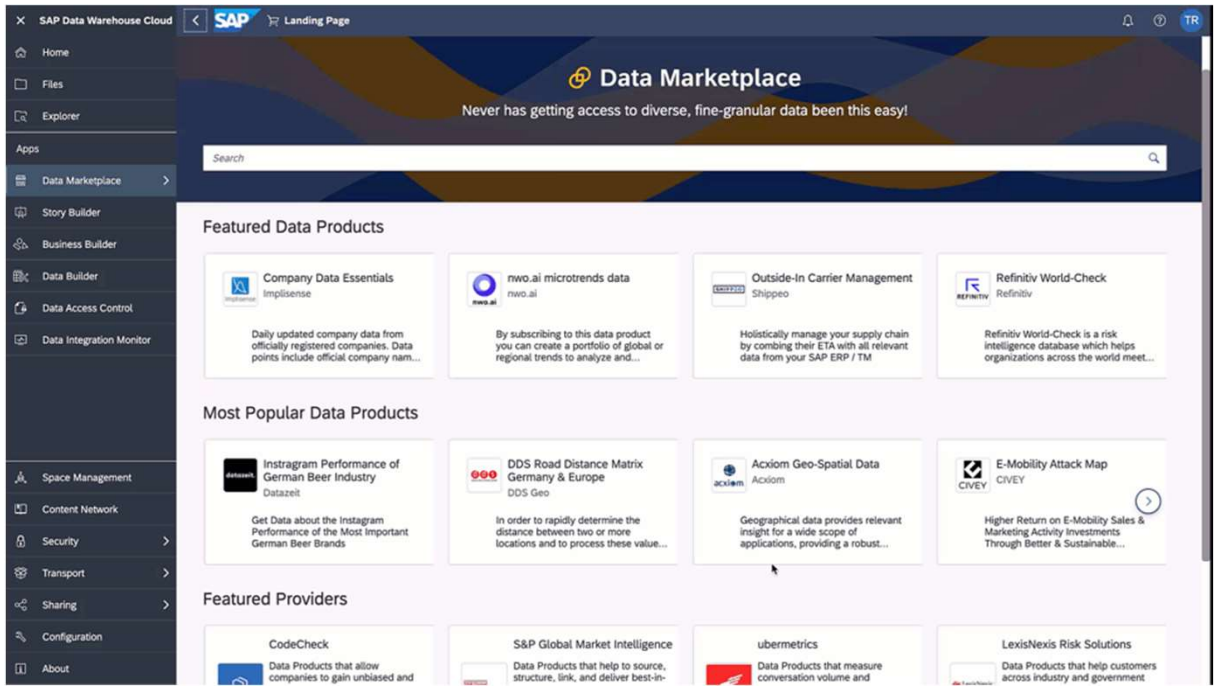



Road Map Explorer
Products
Processes
Industries
My Road Maps
Disclaimer
SAP Datasphere
77 Road Map Items
Products 1
Industries
Focus Topics
Current - Latest
Save
Q3 2023 CURRENT 18 Road Map Items
Q4 2023 33 Road Map Items
Q1 2024 6 Road Map Items
Q2 2024 3 Road Map Items
Q3 2024 10 Road Map Items
2024 5 Road Map Items
Future Release
Product Vision
Business Warehouse Bridge
Automatic restart of the data transfer process
Data extraction: use of operational data provisioning through HTTP
Lifecycle management – remote table usage check
Overview of migrated queries and the option to delete from SAP BW...
Data Cataloging
Backup-and-recovery functionality for catalog metadata and the...
Extending extraction of column and attribute details
Linking of terms and KPIs to asset attributes
Monitoring user interface for metadata extraction
Use SAP Datasphere data as source for SAP BW bridge
Data Center Availability
Data center availability in the Asia Pacific Southwest region through...
Data center availability in the European region through Google...
Data Integration
Improving browsing and selection of CDS views from SAP S/4HANA in...
Scheduling of replication flows
Support for Google BigQuery as a target in replication flows
Support for using cloud object stores as a source in replication flows
Handling and reuse of hierarchies in SAP BW bridge
SAP BW bridge for SAP Datasphere: delta extraction to SAP Datasphere
Metadata extraction for SAP Business Warehouse
Unified discovery of data products and metadata in catalog
Data Modeling
Improved change management for analytic models
Sharing of dependent entities
Metadata extraction for SAP HANA
Ability for catalog users to search and discover data from SAP HANA data repositories, including column tables, row tables, global temporary tables, virtual tables, SQL views, and calculation views
Note: This innovation may not be available in SAP Datasphere tenants provisioned prior to version 2021.03
Metadata extraction for SAP S/4HANA
Ability for catalog users to search and discover data from data repositories in SAP S/4HANA, including tables, views, CDS views, and operational data provisioning (ODP) extractors
Ability to harvest metadata for all CDS views using a batch job
Ability to harvest metadata for a subset of CDS views by category
SAP BW bridge: data center availability in the Google Cloud...
Data profiling for SAP HANA
Enriching data products with catalog metadata
Import of glossaries, terms, and KPIs
Lineage and impact analysis for data products
Metadata extraction for replication flows
Metadata extraction for SAP ERP Central Component
Ability for catalog users to search and discover data from SAP ERP Central Component (SAP ECC)
Transport capabilities for catalog lifecycle management
Administration and Service Management
Elasticity and workload – financial governance of elastic read nodes
Data Center Availability
Data center availability in Israel through Google Cloud Platform
Data center availability in the Google Cloud Platform Asia Pacific East...
Data Integration
Handling of schedules upon user deletion
Data Privacy and Protection
User and authorization management audit
SAP Datasphere

Data Marketplace – Access to External Data in Clicks, Not Projects

1

In-App Data Discovery Experience for transparent evaluation of more than 100 Data Providers & 3000+ data products through the cooperation with Datarade.ai



5

Seamless Consumption with SAP Analytics Cloud, SAP Data Intelligence & SAP HANA Cloud or the 3rd Party Frontend Tool of Customer Choice

2

Complimentary Deployment Channel as you can bring your existing data provider license with no brokerage for SAP

3

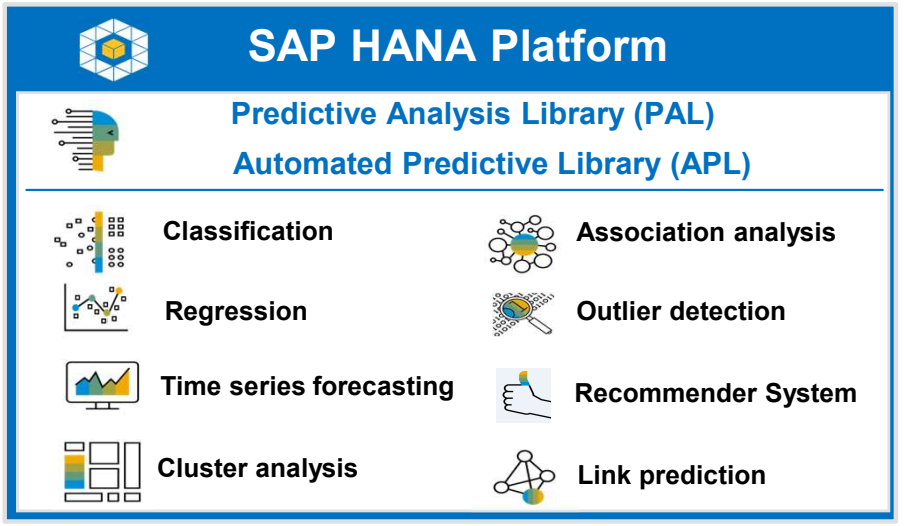
Managed Data Integration & Update Management for sustainable adoption of external data sources

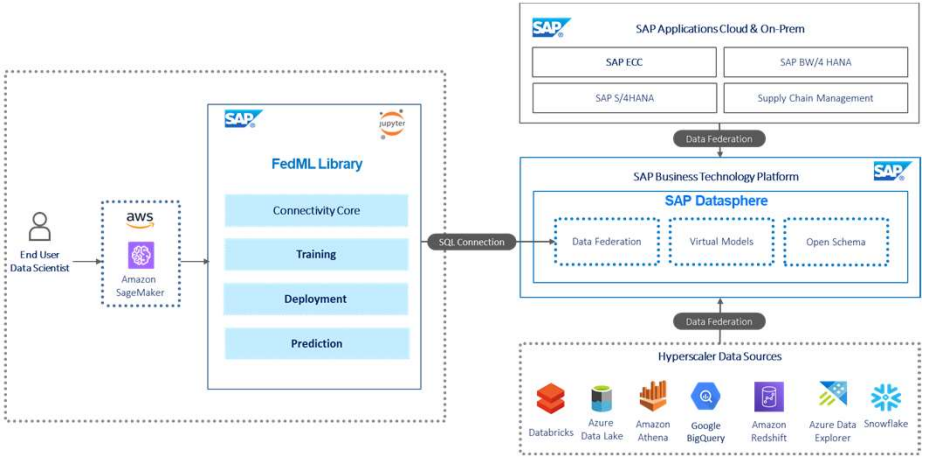
4

Unparalleled Data Management Functionality for Data Enrichment & Harmonization with SAP Data for Business & IT Users

Built-in Machine Learning

- **Predictive Analysis Library (PAL)**
  - Addresses key scenarios like Classification, Regression or Time Series Forecasting (and more)
  - High performance parallel mass prediction, real-time transactional speed prediction
- **Automated Predictive Library (APL)***
  - Addresses key scenarios like automated Classification, Regression or Time Series Forecasting (and more)**
  - **Automation** is based on concepts of “Structural Risk Minimization” and **covers analysis steps** of *automated variable selection, data preparation, variable encoding, missing value handling, outlier handling, binning and banding, model testing and best model selection*
- **Federated Machine Library (FedML) Library**
  - library provides the ability to build, train and deploy machine learning models from any data source in a hyperscaler service without the need of replication or migration from its original source





SAP BW Bridge. Value Proposition

What is the SAP BW bridge?

A SAP Datasphere **feature** that provides a path to the public cloud for SAP BW NetWeaver and SAP BW/4HANA customers.

Offers key capabilities of SAP BW directly in SAP Datasphere:

- **Connectivity & Business Content** providing proven SAP BW-based data integration (Extractors) from SAP ECC and SAP S/4HANA
- **Enterprise-ready staging layers** of SAP BW for managing data loading with partitioning, monitoring, error handling
- **Tool-supported move** of SAP BW-based integration and staging

What are the key value propositions?

Re-use for business continuity
Leverage SAP BW data structures, transformations, customizations, and skills – quickly extending your SAP BW investments to the public cloud

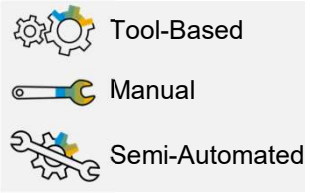
Connect with confidence
Integrate on-premises SAP Business Suite data with familiar connectivity and semantic richness – retaining instant access while expanding your analytics depth

Innovate with cloud agility
Empower your business to rapidly innovate on BW data with an open, unified data & analytics cloud service – scaling innovation and efficiency in the cloud

Conversion Paths to SAP Datasphere, SAP BW Bridge

SAP BW

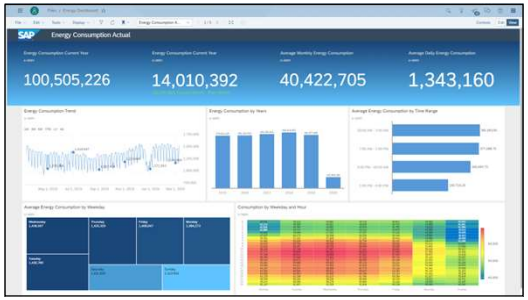
SAP Datasphere, SAP BW Bridge



BEx Analyzer, BEx Web Templates, BEx Tools	Manual	SAP Analytics Cloud
BW Query (BEx Query Designer)	Semi-Automated	Model Transfer
Classic Object Types (InfoCube, DSO, MultiProvider, InfoSet, …)	Tool-Based	DataStore Object (adv.) & CompositeProvider
Object Type InfoObject	Tool-Based	InfoObject
Loading Object Types (Transformation, DTP, Process Chain)	Tool-Based	Transformation, DTP, BW Bridge Process Chain
SAPGUI Modeling & Workbench	Tool-Based	Eclipse based BW Modelling Tools & BW Bridge Cockpit (UI5)
Source System ERP Extractors (S-API), BW	Tool-Based	Consolidation to ODP
Source System types UD/DB Connect, Data Services, Partner L[illegible]	Manual	Consolidation to SAP Datasphere
Source Systems types HANA, File	Manual	Consolidation to SAP Datasphere
PSA / InfoPackages	Tool-Based	Operational Delta Queue, field-based DataStore Object (adv.)
BI Content Packages	Semi-Automated	SAP BW bridge Content
Near-line Storage Partner Solutions, Near-line Storage SAP, D[illegible]	Manual	New Cold Store planned

Use. Choice and openness

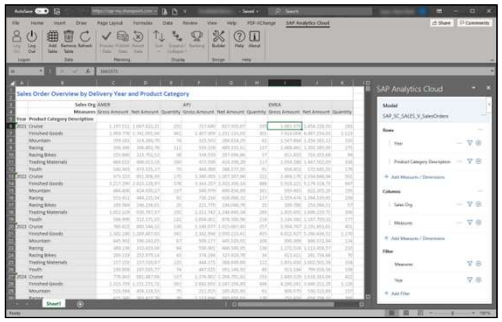
SAP Analytics Cloud



One seamless user experience

- Direct consumption of models in SAP Analytics Cloud (live connection)
- Any number of SAP Datasphere systems can be connected to any number of SAP Analytics Cloud systems

MS Office Integration



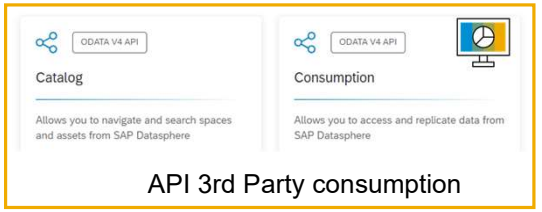
Live Connection to MS Excel

- SAP Analytics Cloud, add-in for Microsoft Office 365 (live connection) online or desktop version
- SAP Datasphere with SAP Analysis for Microsoft Office 2.8 SP14+

External API

jupyter **Excel** **R Studio**

PowerBI **Tableau** **zepl**



External API for consumption

- Freedom of choice
- Use consumption interface to connect any 3rd party front end tool to your exposed views
- Make your data models accessible for consumption tools & applications

BI, Augmented Analytics, and Planning on one common platform

Monitor & Process
- Monitor & Alert
- Process execution

Ask
- Understand status quo
- Model business questions

Act & Visualize
- Review Data
- Smart Analytics
- Trigger Actions

Collaborate
- Share Stories
- Run Discussions
- Enter Comments

Analyze
- Adhoc insights
- Data Exploration

Plan
- Input / Adjustment
- Distribution & Allocations
- Advanced Formulas

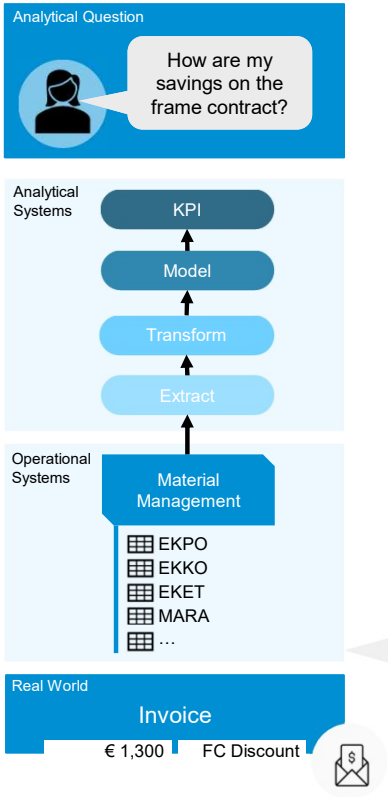
Predict
- Time Series Forecast
- Planning Proposition
- Driver determination

1 **Powerful Analytics, Planning & Applications** create a closed loop from insight to action

2 Link **Operational** and **Financial data** from **all LoB's** data to see one version of the truth in context

3 **Integrate with enterprise applications In real time** to bring intelligence to the end user

SAP Datasphere Business Content

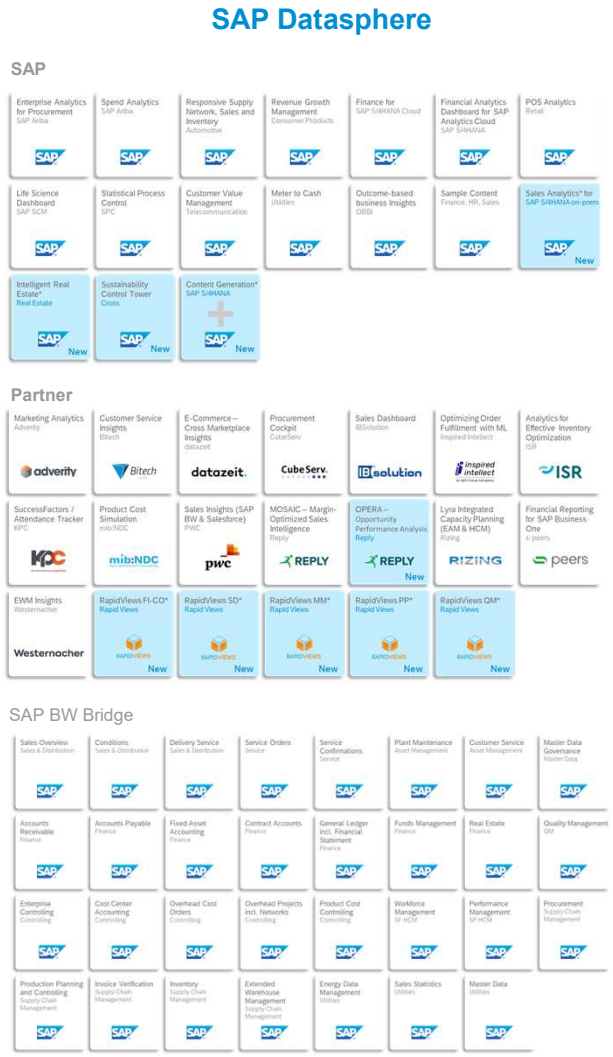


Business Content Collection

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 Analytic Cloud

Accelerate Outcomes with Prebuilt Business Content

Accelerate customer outcomes with prebuilt line-of-business and industry content packages from SAP and partners.

Line of business

- Advanced compliance reporting
- Carbon footprint analytics
- Environment, health and safety
- Finance
- FI operational expense planning
- Human resources
- Liquidity planning
- Marketing
- Procurement
- Product cost planning
- Project and portfolio management
- Project budgeting and planning
- Project staff planning
- Sales and distribution
- Sports one
- Trade management
- Travel and expense
- Treasury management for SAP
- Vendor management system
- Workforce planning
- + many more

Industry

- Trading and risk management analysis
- Banking
- Chemicals
- Consumer products
- Customer profitability analysis
- Engineering, construction and operations
- Health care
- High tech
- Insurance
- Mill products
- Mining
- Oil and gas
- Professional services
- Public sector
- Higher education and research
- Real estate
- Retail
- Rural sourcing management
- Utilities
- + many more

Please visit our SAP Store and SAP Business Content Center for further information

AGENDA

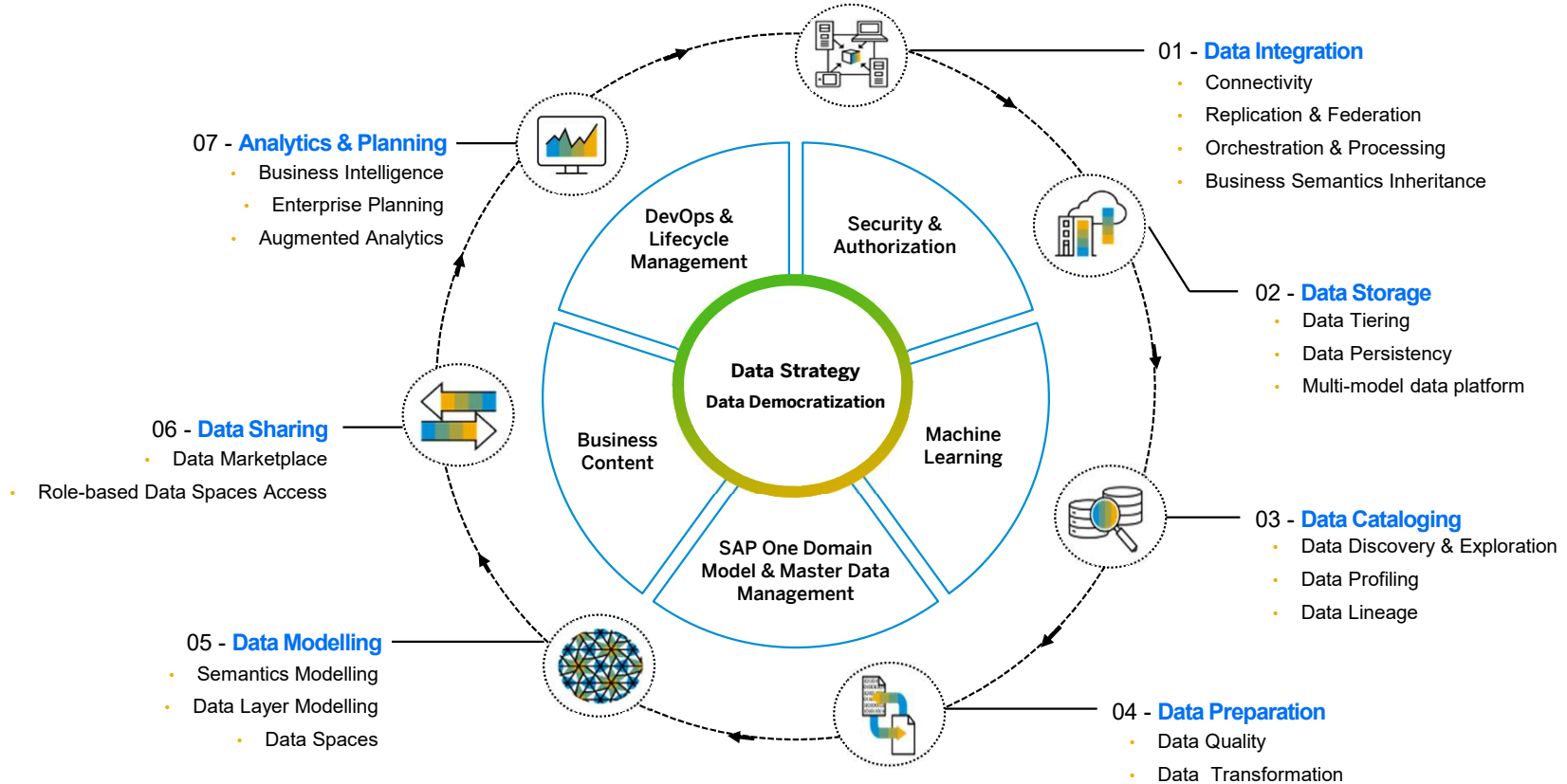
01 Data & Analytics Challenges

02 SAP Datasphere

03 Business Value

04 Q&A

From Data to Value with One Integrated Workflow



Integrated Data & Analytics Give Data Purpose

Business Data Fabric

Maximize the Value of Data

Harness SAP data with complete context

Enrich your SAP landscape with non-SAP data

Get immediate answers from all types of data

Planning & Analytics

Extended Planning and Analytics

Bring together strategic, financial, operational plans

Dive from plans into actuals via direct integration

Create predictive plans with end-to-end flow

Business Content

Deliver trusted insights on a modern data stack

Govern all your data across the enterprise

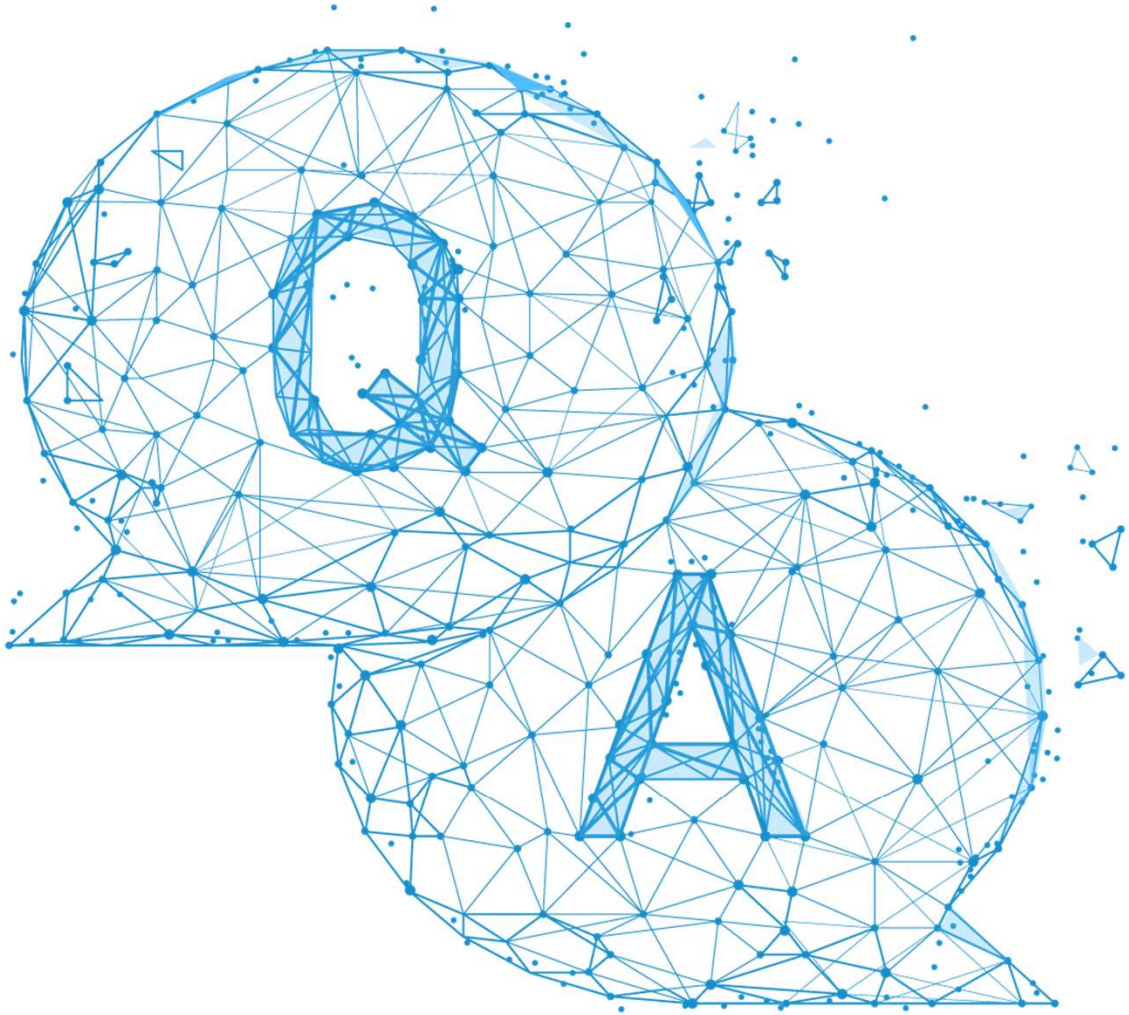
Give flexibility and IT piece of mind with future poof data and analytics architecture

Run at your best with prebuilt content

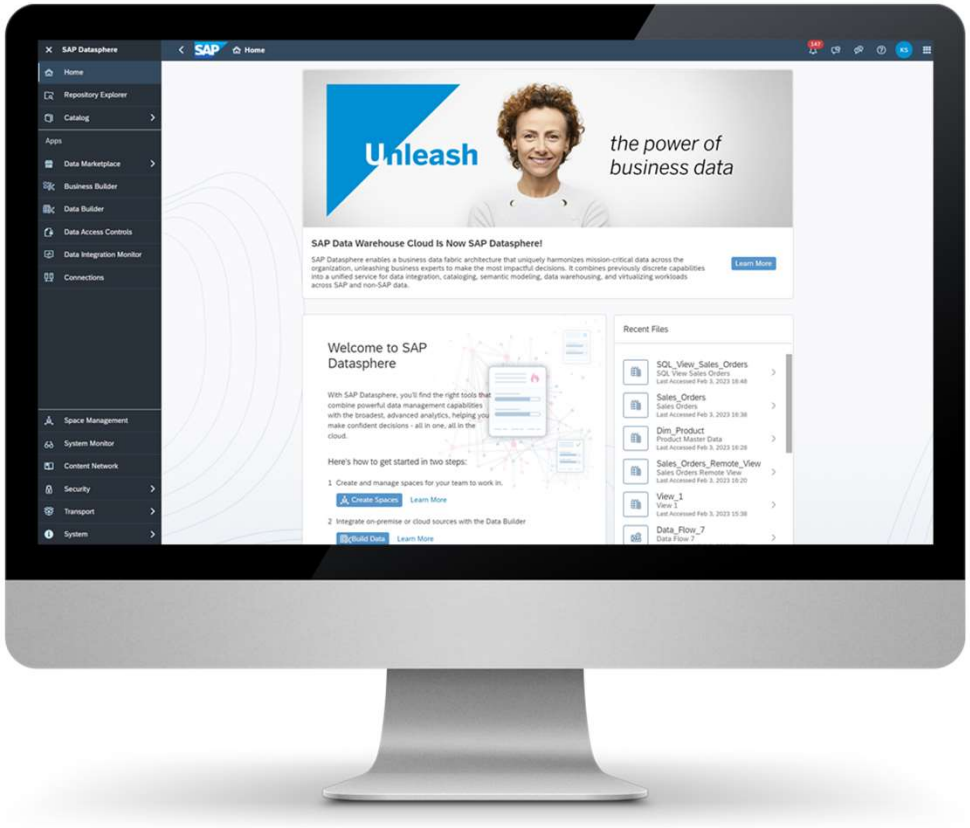
INTERNAL – SAP and Customers Only

Customers' Use Cases

Business Empowerment	PORSCHE Empowers Sales with enterprise data with S/4, BW/4, DSP, and SAC	QUADPACK Accelerates real-time finance analytics with S/4, DSP, and SAC	PETROSEA Achieves agile decision making with S/4, DSP, SAC, and Digital Boardroom
SAP Integration	idorsia Simplifies data landscape with S/4, SuccessFactors, Concur, DSP, and SAC BI & Planning	Vestas Builds a resilient Supply Chain with ECC, BW7.5, DSP, and SAC	HYUNDAI ELEVATOR CO., LTD. Optimizes Supply Chain with ECC, DSP, and SAC
Time-to-value & Cost Efficiency	milcobel Empowers finance with profitability insights via S/4, DSP, BOBJ, and SAC	MBCC GROUP Accelerates analytics across lines of business with S/4 and DSP	INPEX Accelerates decision making with harmonized with S/4, DSP, and SAC



SAP Datasphere Resources



- Check out the product page on sap.com and get access to a Guided Experience Trial system
- Get started with documents & videos or visit our Learning Journey
- Use the tutorials and the openSAP course Introduction to SAP Datasphere to learn more
- Join the Community and check out the Best Practices recommendations
- Add your ideas and requests for new features on the SAP Datasphere Customer Influence
- Online Documentation on SAP Help

Thank you.

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+1 713 594 9623

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