Positioning SAP BW/4HANA and SAP S/4HANA

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THE BEST RUN **SAP**

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Agenda

Overview of Positioning and Architecture of SAP Analytics and SAP S/4HANA

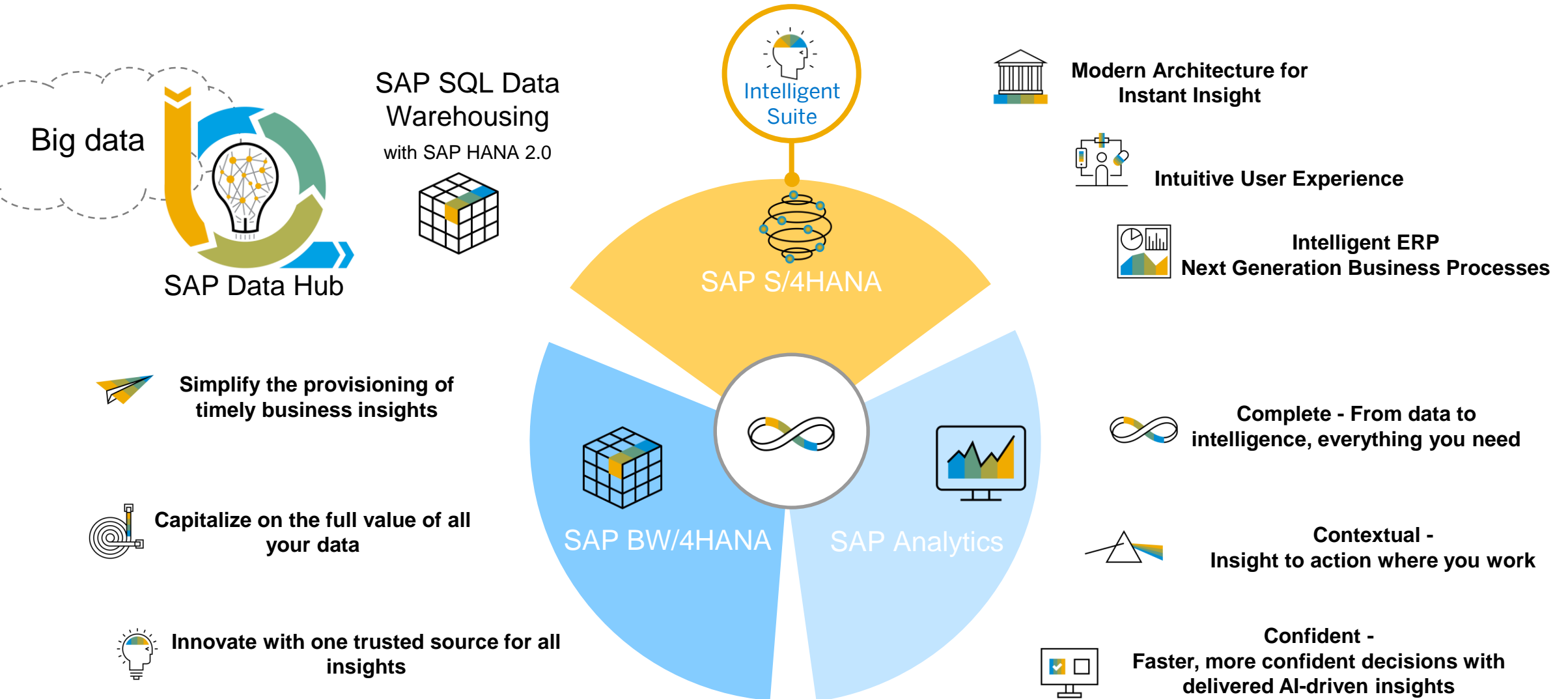Integration of SAP S/4HANA with SAP BW/4HANA

What to consider on your route to Analytics with SAP S/4HANA?

Summary

Overview of Positioning and Architecture of
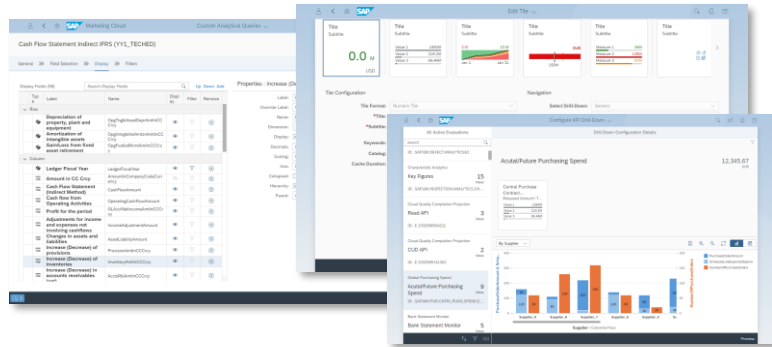## SAP Analytics and SAP S/4HANA

Analytics in the context of SAP S/4HANA
The complete portfolio

Big data

SAP Data Hub

SAP SQL Data Warehousing

with SAP HANA 2.0

Intelligent Suite

SAP S/4HANA

SAP BW/4HANA

SAP Analytics

Modern Architecture for Instant Insight

Intuitive User Experience

**Intelligent ERP
Next Generation Business Processes**

Simplify the provisioning of timely business insights

Capitalize on the full value of all your data

Innovate with one trusted source for all insights

Complete - From data to intelligence, everything you need

**Contextual -
Insight to action where you work**

**Confident -
Faster, more confident decisions with delivered AI-driven insights**

SAP S/4HANA Digital Core - Examples

Modern Architecture for Instant Insight

Easy modeling on simple data models

- Real-time data availability

- Easy drill down

- Best possible performance

- Custom data model extensions (in SAP Fiori)

Intuitive User Experience
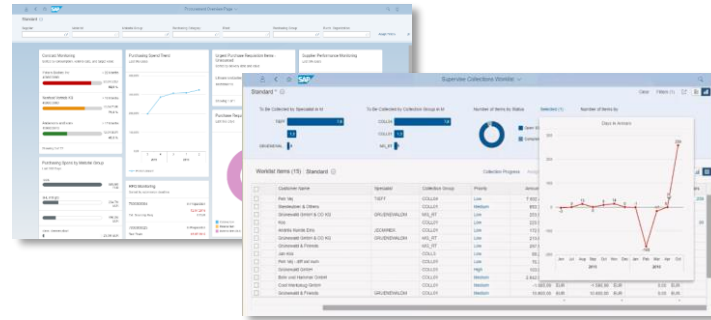
Enablement of fact-driven process handling

- Combined screens with transactional and analytical information

- Proper prioritization in transactional process steps

- Decision support where it is needed (inside the transactional screen)

Intelligent ERP Next Generation Business Processes
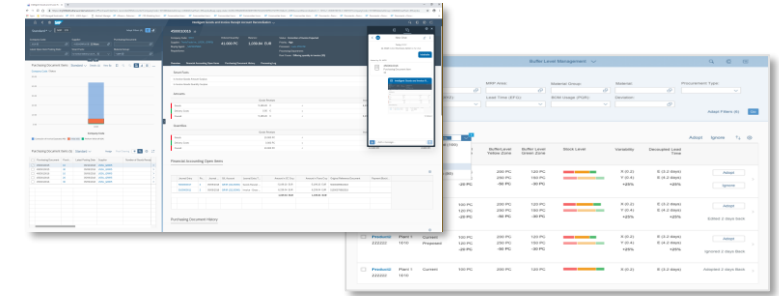
Integrate intelligent technologies in processes

- Integration of Predictive and ML data inside analytical data models

- Embedded decision support

- Allow process automation where needed

SAP Analytics Cloud – Make Intelligent Decisions

Complete - from data to intelligence

All in one platform built for SaaS

- Get everything you need from data to decisions

- Analyze, plan, and predict all in one place

- Scale to meet the needs of diverse users and all types of decisions (strategic, operational, and tactical)

Contextual insight to action
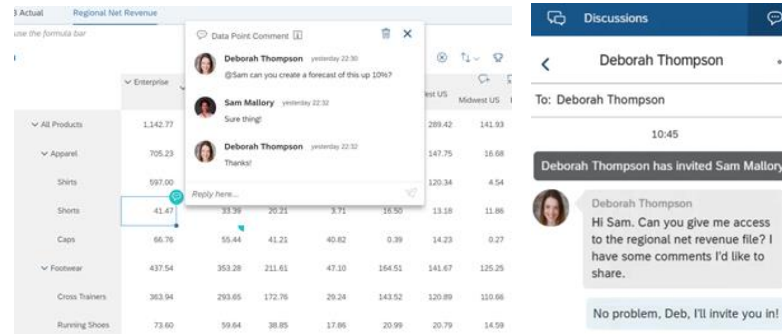
Planning, analysis, and execution in one UX

- Plan, analyze, and collaborate in one UX/system for instant insight to action

- Increase engagement, accountability, and accuracy with collaboration embedded in context

- Access to on-prem data & apps without having to replicate in the cloud

Confident decisions with delivered AI-driven insights
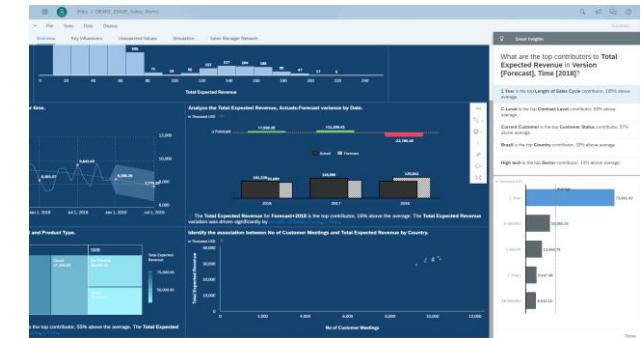
Augmented analytics for business users

- Augment manual insights with embedded intelligence that explains results

- Ask questions in natural language to get the answers you seek

- Detect causes and take the next best action using automated ML

- Predict potential outcomes with the push of a button

# SAP BW/4HANA - the Guiding Principles

Simplify the provisioning of timely business insights
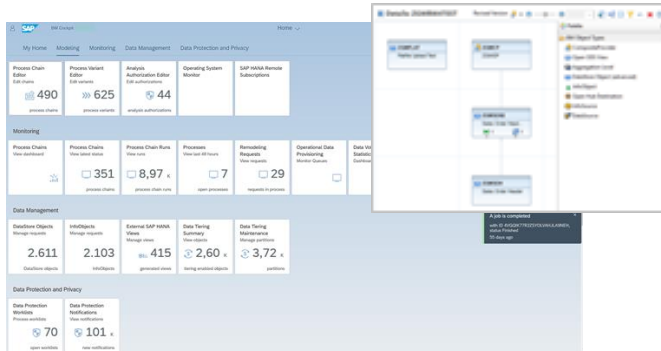
Impactful reduction of modeling and source objects; choice of field- or InfoObject-based modeling, no data replication between layers needed

Data tiering for allocating best storage for hot, warm, cold data by partition

Data processing pushed to SAP HANA from the application server

Deploy on HEC, AWS, Azure, and GCP

Capitalize on the full value of all your data
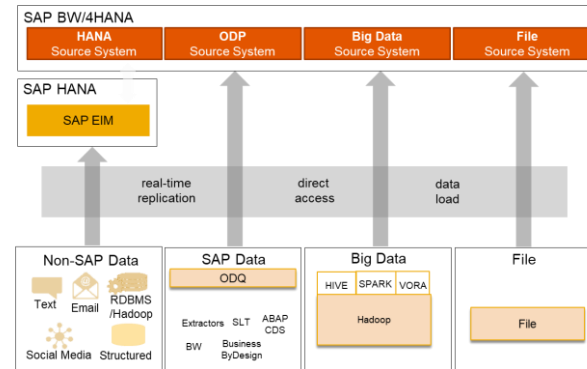
Leverages SAP HANA EIM to provide new data provisioning opportunities, like virtual data access, real-time replication, or optimized data load

Dedicated big data connector to leverage Big Data landscapes for data onboarding and ingestion for various types of data and files

Deep integration with SAP Data Hub, including SAP Vora, as orchestration and refinery application to address end to end processes with SAP HANA and SAP BW/4HANA

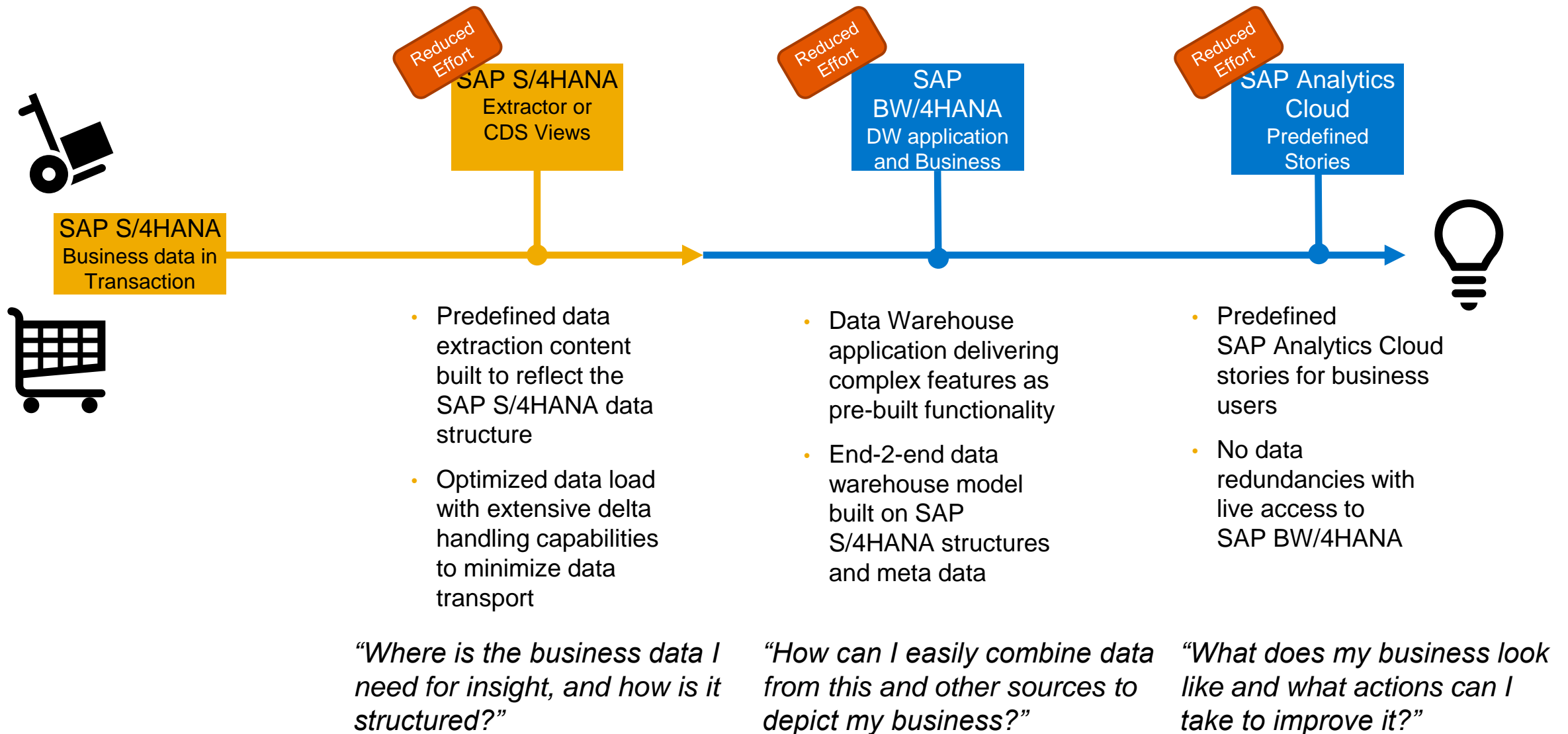## Innovate with one trusted source for all insights
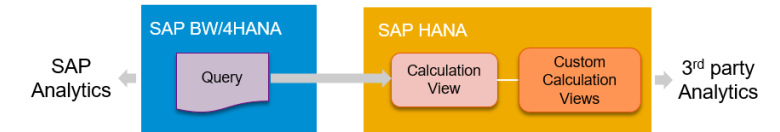
Unique native data access for real-time analytics without replication into the cloud; one platform for enterprise planning & consolidation, Predictive Analytics

Extend managed DW and native SQL approach for the full power of HANA with mixed scenario and analytical apps

Establish the corporate memory for the Intelligent Enterprise by leveraging the Cloud Platform Integration API framework
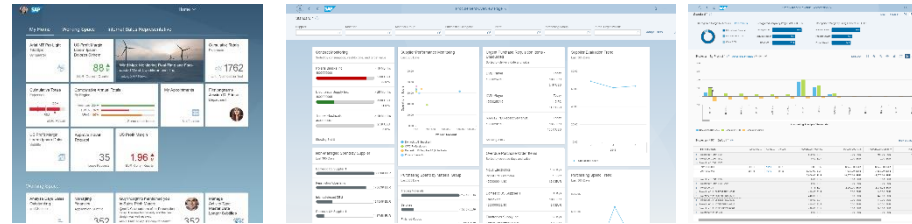
Lower your TCO: Unique transaction-to-insight process

Reduced Effort

SAP S/4HANA
Extractor or CDS Views

Reduced Effort

SAP BW/4HANA
DW application and Business

Reduced Effort

SAP Analytics Cloud
Predefined Stories

SAP S/4HANA
Business data in Transaction

- Predefined data extraction content built to reflect the SAP S/4HANA data structure
- Optimized data load with extensive delta handling capabilities to minimize data transport

- Data Warehouse application delivering complex features as pre-built functionality
- End-2-end data warehouse model built on SAP S/4HANA structures and meta data

- Predefined SAP Analytics Cloud stories for business users
- No data redundancies with live access to SAP BW/4HANA

"Where is the business data I need for insight, and how is it structured?"

"How can I easily combine data from this and other sources to depict my business?"

"What does my business look like and what actions can I take to improve it?"

Analytics with SAP S/4HANA – high level architecture

SAP S/4HANA

Intelligent Technologies

Visualization	**SAP Fiori UI** analytical apps, reports, KPIs,… delivered as part of SAP S/4HANA, extensible by the customer	**SAP Analytics** access SAP S/4HANA data directly via Transient analytical queries
Access	**Odata services** / **Transient analytical queries**	
Modelling	**ABAP-CDS-Models** (for analytical and transactional purposes)	**SAP BW/4HANA** (for seamlessly extending transactions with data warehousing workflows)
Persistency	**Database tables on SAP HANA**	**Database tables on SAP HANA**
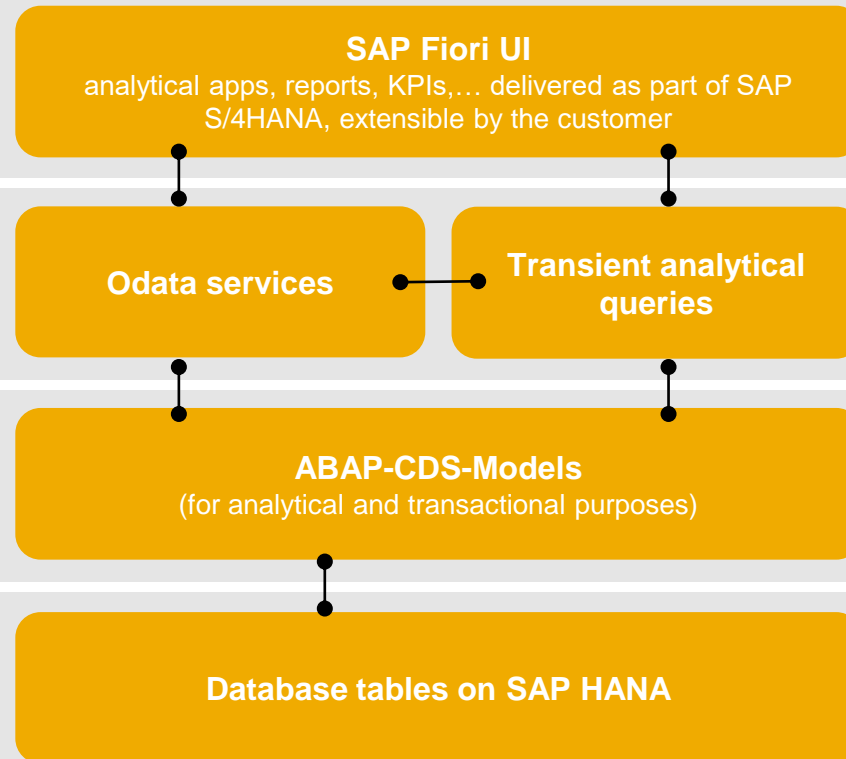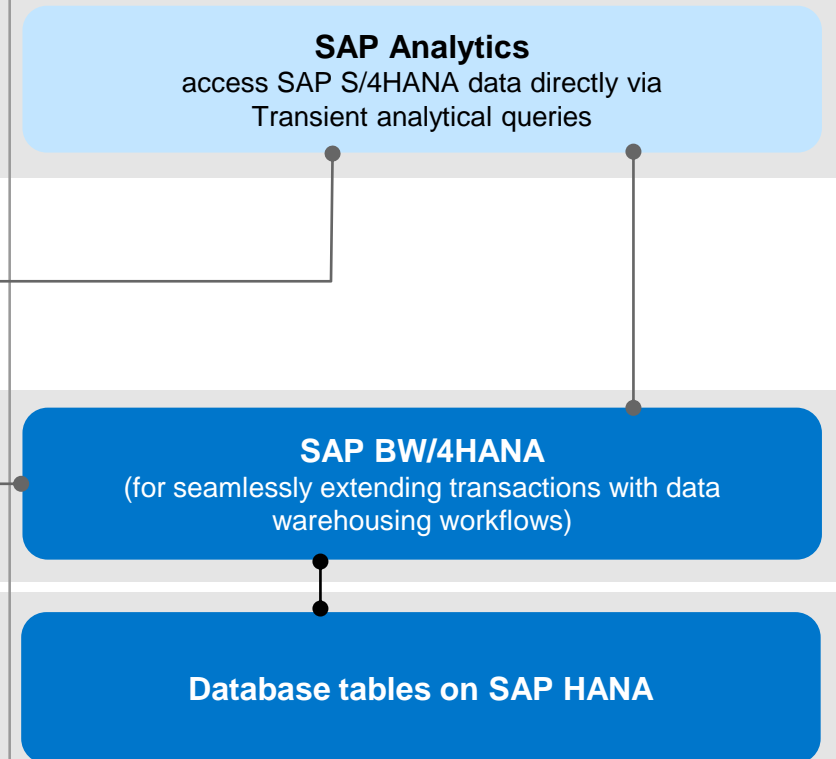
SAP Analytics Cloud is embedded in SAP S/4HANA!*

*labs preview
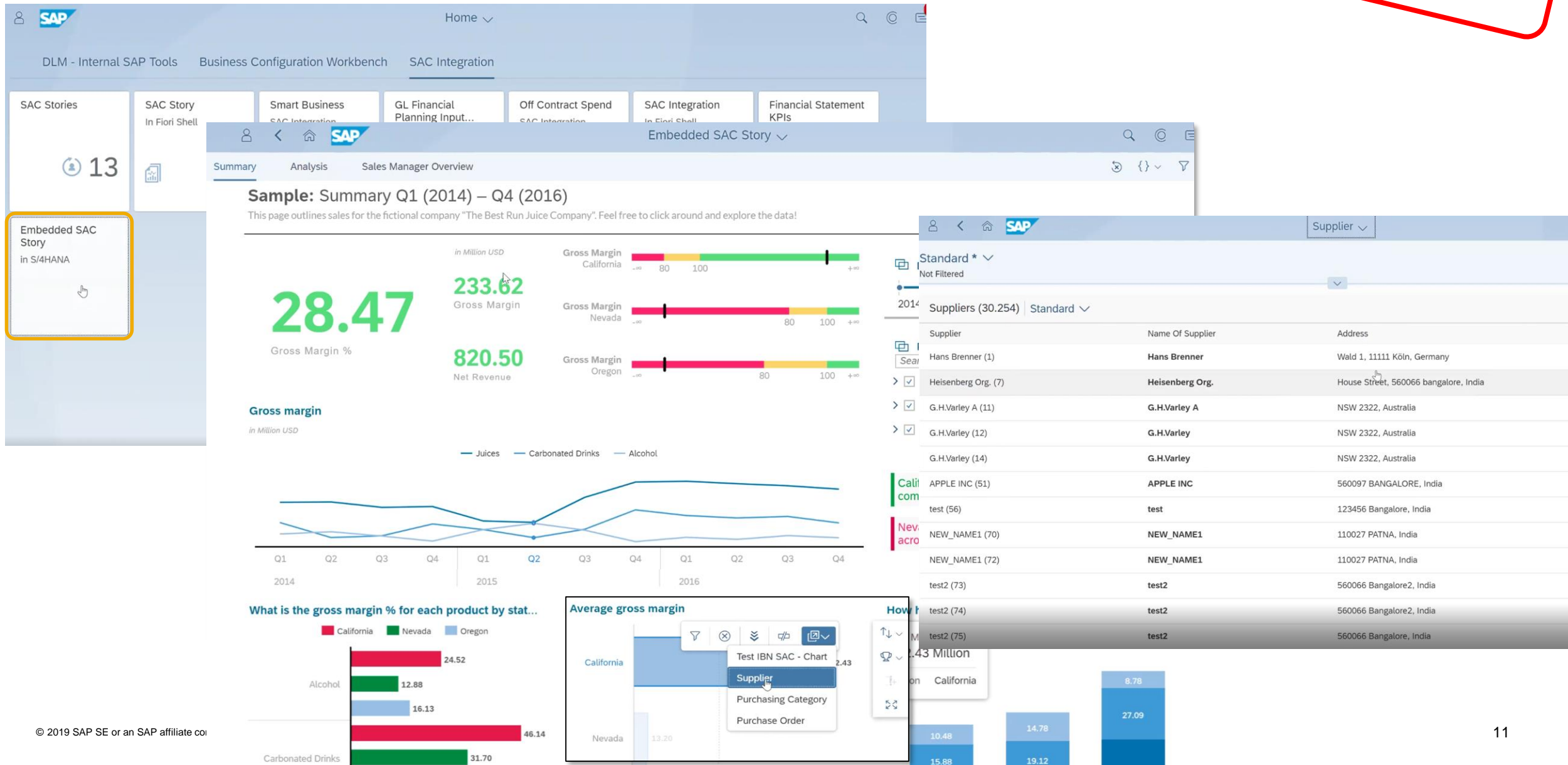
Integration of SAP S/4HANA with SAP BW/4HANA

"With SAP S/4HANA and SAP S/4HANA embedded analytics, do I still need my BW?"

"Yes!"

SAP BW/4HANA complements SAP S/4HANA

SAP S/4HANA is <u>not</u> an EDW

- SAP S/4HANA is the next generation intelligent ERP and part of an Intelligent Enterprise - sized, tuned, and maintained for optimal performance as transactional system

- A modern simplified architecture, the new user experience (SAP Fiori) and integrated intelligent technologies such as Machine Learning allow for new business processes and even automation

- SAP S/4HANA embedded analytics focuses on fact-driven process handling and embedded decision support inside of transactions - embedded BW only for support of transactional workflows

SAP BW/4HANA <u>is</u> an EDW

- Allows harmonization of all enterprise data (ERP + non-SAP, governance, corporate memory, big data, …)

- Delivers complete data warehouse tools (rich integrated toolset for data warehousing)

- Provides deep integration with SAP Analytics and SAP data management (SAP Data Hub, SAP HANA SQL DW, ...)

Why is SAP BW/4HANA the perfect EDW for SAP S/4HANA?

- Extends seamlessly the business case of SAP S/4HANA including the integration with SAP Data Hub for Big Data and Internet of Things (IoT) use cases

- Availability of specific business content for SAP S/4HANA

- Allows best integration capabilities based on common architecture and terminology (e.g. analytical engine, currencies, user maintenance, ABAP, transports, governance, …)

SAP
S/4HANA
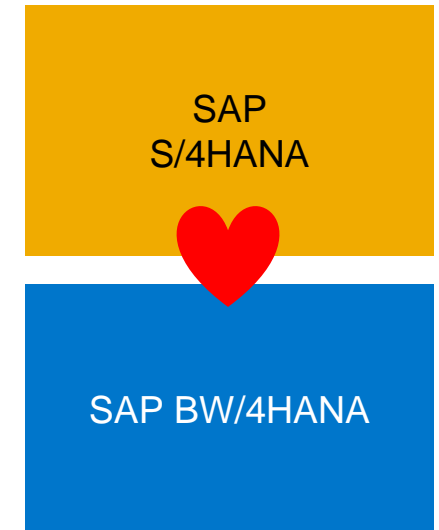
SAP BW/4HANA

SAP BW/4HANA Business Content: Overview as of SP07

Business Area

Sales & Distribution
- Sales Overview
- Conditions
- Delivery Service

Asset Management
- Plant Maintenance
- Customer Service

Quality Management
- Quality Management

Finance
- Accounts Receivable
- Accounts Payable
- Fixed Asset Accounting
- Contract Accounts
- General Ledger incl. Financial Statement
- Real Estate

Controlling
- Enterprise Controlling
- Cost Center Accounting
- Overhead Cost Orders
- Overhead Projects incl. Networks
- Product Cost Controlling

Supply Chain Management
- Procurement
- Invoice Verification
- Inventory
- Production Planning and Controlling
- Extended Warehouse Management

Master Data
- Master Data Governance

Industries: Utilities
- Master Data
- Sales Statistics
- Energy Data Management

- Supports SAP S/4HANA and SAP ECC systems
- Uses new SAP BW/4HANA features
- Follows the LSA++ architecture
- Delivered content offers more flexibility in data acquisition and reporting
- Provides higher level of detail (line items, …)
- Quarterly delivery pace

SAP BW/4HANA and SAP S/4HANA

Leveraging **SAP BW/4HANA** you can **natively integrate** the embedded analytics models and data in SAP S/4HANA with those of an EDW, e.g. to compare real-time actuals with historical snapshots, planning results (from SAP BPC), or external data.

Please refer to the respective integration blog and How-to-Guide on www.sap.com for further details.

Examples for best-in-class integration are:

- Out-of-the-box connectivity
  - Visualize SAP S/4HANA data in SAP BW/4HANA without data structure creation in SAP BW/4HANA
  - Standard Extractors (ABAP CDS and ABAP via S-API), as well as open extensibility
- Fast time-to-value enterprise-wide Data Mashups using SAP BW/4HANA-native objects (composite providers etc.)
- Strong data historization capabilities (e.g. easy tracking of slowly changing dimensions)
- Integrated planning use cases based on all necessary existing and harmonized data
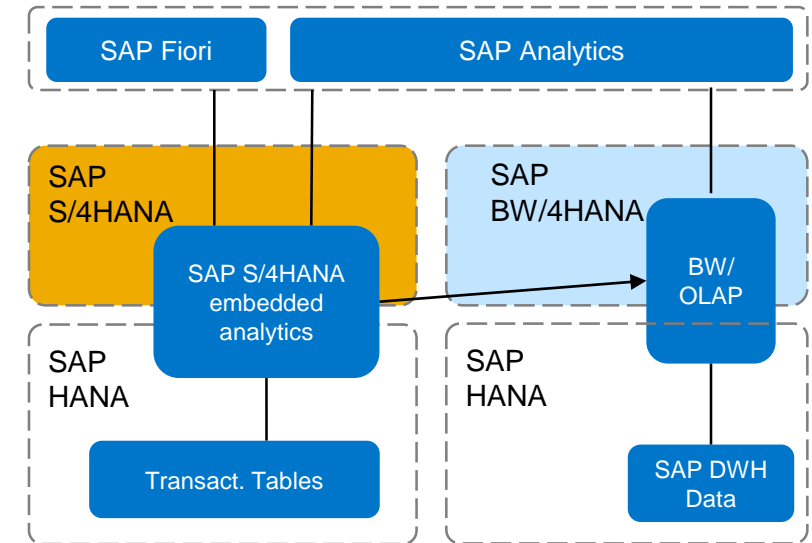
Embedded BW:

- SAP does **not** recommend using Embedded BW for data warehouse (EDW) use cases!
- For details, see SAP Community blog and SAP note 1661202, (e.g. Upgrades and patches, Resource allocation and capacity planning, Workload Management, Backup & Recovery, Lifecycle management, High Availability & Disaster Recovery, Security etc.)
- Best practice: The amount of data persisted in the Embedded BW should not exceed 20% of the overall data volume of the system.
- Embedded BW is not an SAP BW/4HANA
- More information here.

Extraction to SAP Business Warehouse
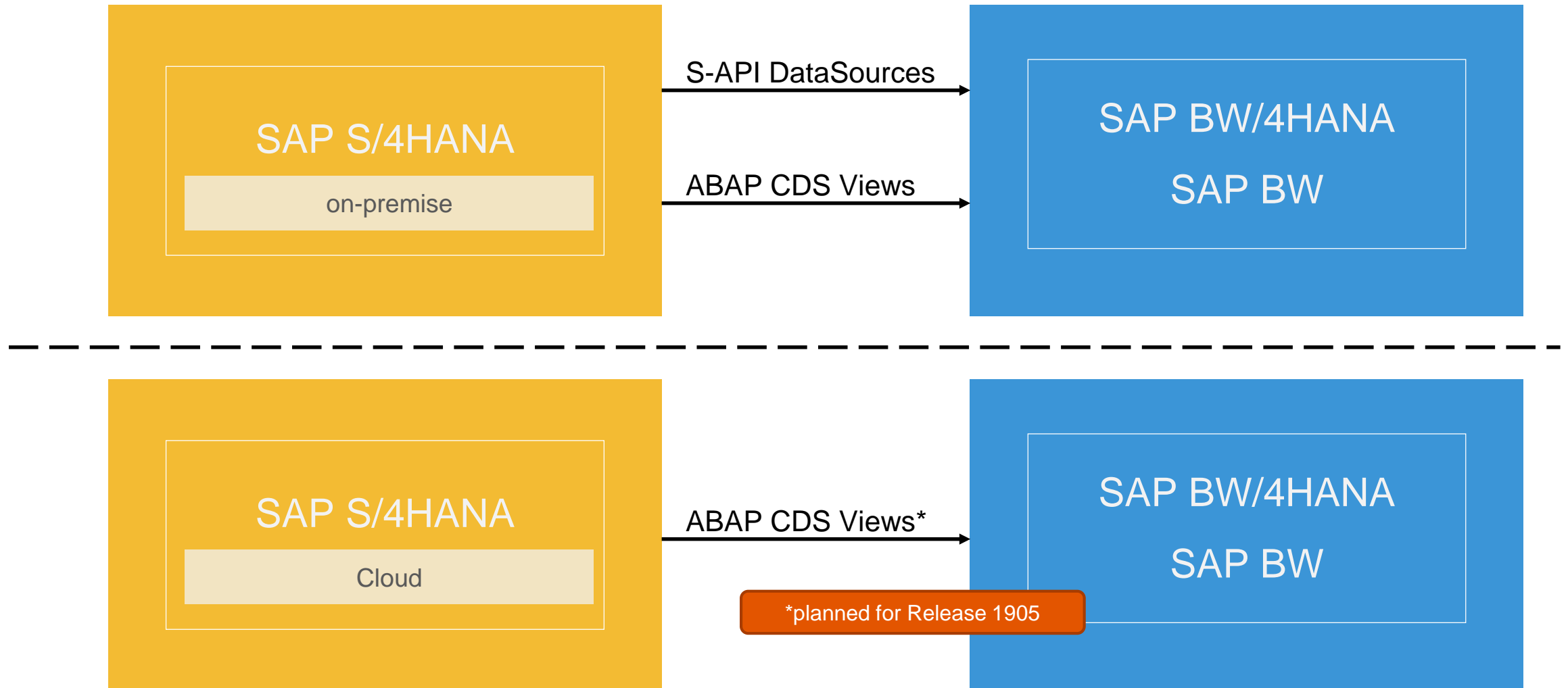
- For limitations on S-API DataSources (Extractors) in S/4HANA see SAP Note 2500202
- How to use ABAP CDS for Data Provisioning in BW
- For release of extractors for ODP see SAP Note 2232584 'Release SAP Extractors for Operational Data Provisioning' (> 95% are released)

ABAP CDS-based Data Federation with SAP Business Warehouse

SAP S/4HANA		SAP BW/4HANA
on-premise	ABAP CDS Views →	SAP BW

SAP S/4HANA		SAP BW/4HANA
Cloud	ABAP CDS Views* →	SAP BW

*planned for Release 1905
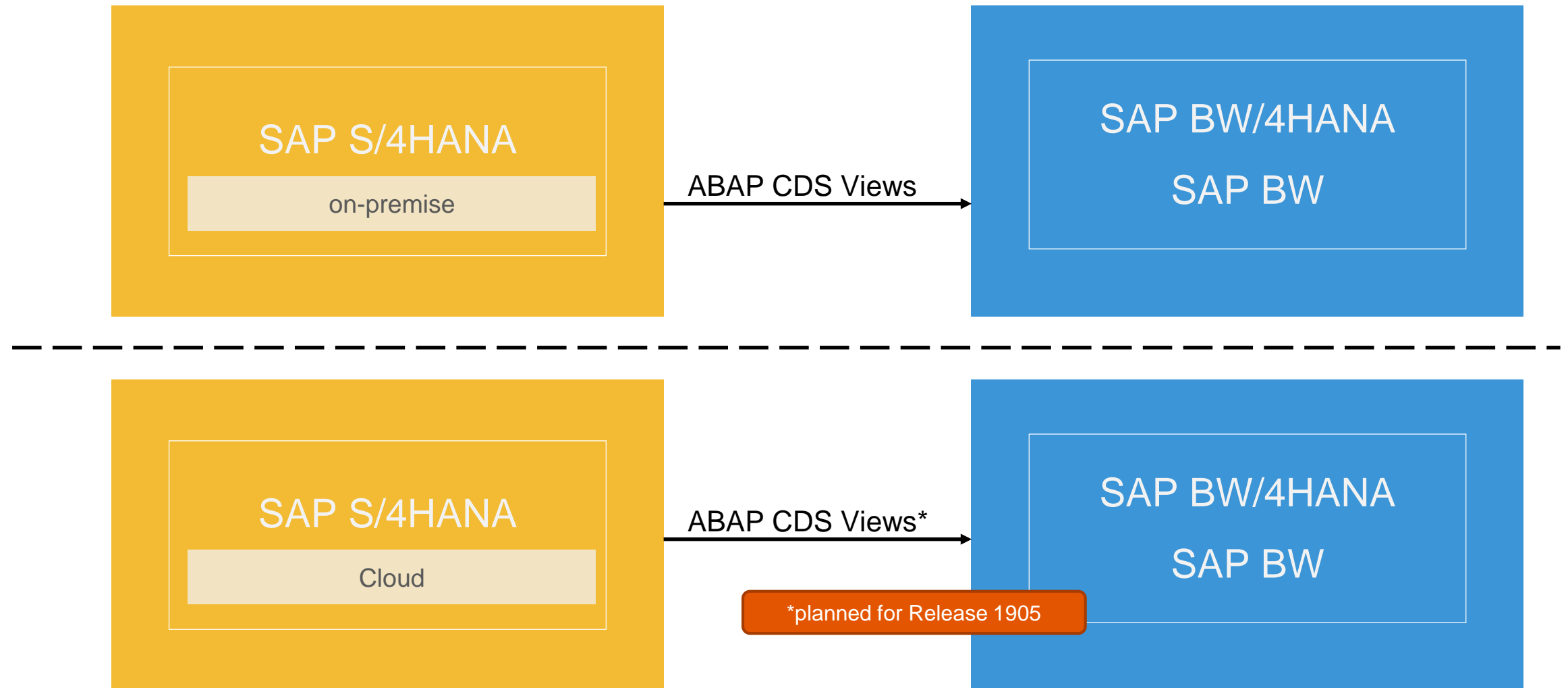
Direct access to SQL views (generated by ABAP CDS) **not** recommended! See note 2511210 for further details.

What to consider on your route to Analytics with SAP S/4HANA?

Planning the migration from SAP ECC with SAP BW to SAP S/4HANA with BW/4HANA

Check SAP BW Status Quo

Check Status quo BI/Analytics

What to do where?

Check SAP S/4HANA

Rebuild and Extend
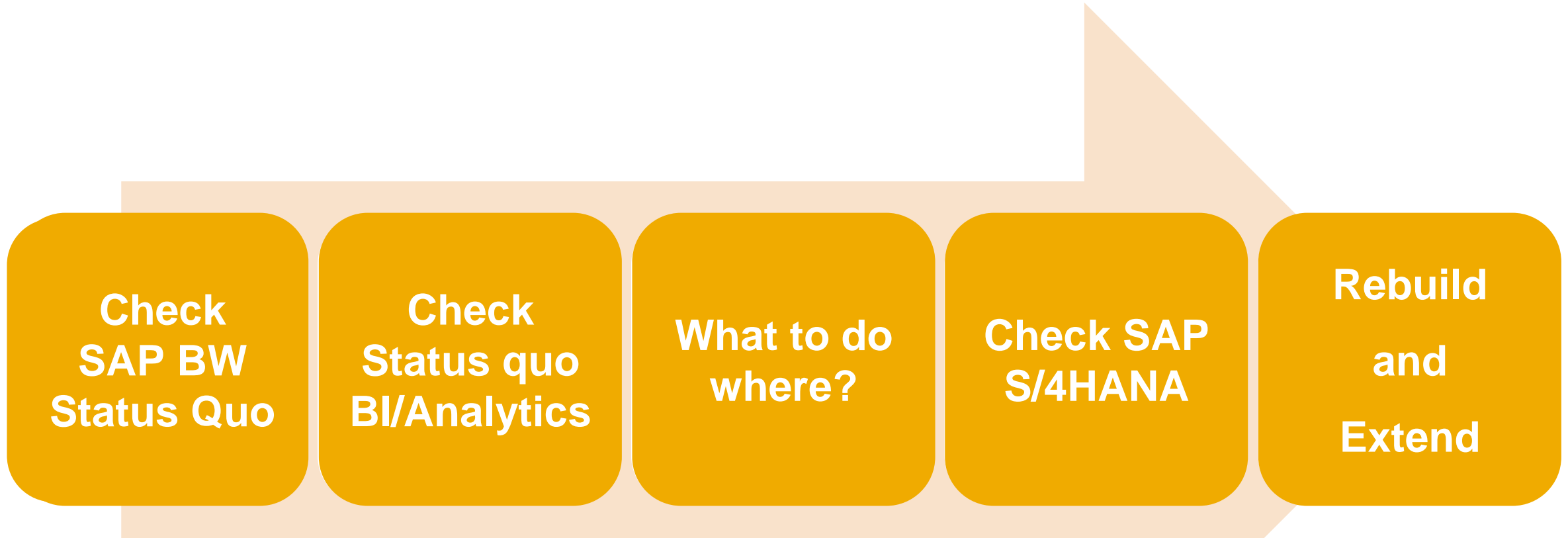
*Prerequisite: SAP BW/4HANA Sandbox existing

Planning the migration from SAP ECC with SAP BW to SAP S/4HANA with BW/4HANA

Check/test existing and used BW setup and extractors

What is still working (functional fit and/or SAP supported content)*?

Which frontends have been created using the BEx?

Do housekeeping! What is still necessary?

Establish the status quo of BI/Analytics

Have data sources changed?

Does Big Data play a role?

Do housekeeping! What is still necessary?

Separate analytical requirements (along the business processes) between the operational system, the BI/Analytics layer and the EDW.

Explore how a target architecture would look like ideally using SAP S/4HANA, SAP BW/4HANA, and SAP Analytics BI/PA/Planning.

For pure operational analytical requirements:

Check existing content, applications and capabilities in SAP S/4HANA embedded analytics. See what you can do out-of-the-box.

For all analytical requirements, check Business Content in SAP Analytics and SAP BW/4HANA.

Plan detailed steps to implement all remaining analytical requirements (e.g. by extending SAP S/4HANA, or by exceptional usage of SAP Analytics Cloud and SAP BW/4HANA for operational reporting) - your choices need to be based on project realities (e.g. individual preferences, strategy, efforts, available functionality)

*Prerequisite: SAP BW/4HANA Sandbox existing

Now: what to do where?

SAP BW/4HANA – Core EDW functions

- Data replication (for Snapshots, Performance enhancements)

- Enterprise-wide data harmonization

- Data governance

- Data federation/mashing (EDW)

- LSA modeling

- SAP and non-SAP data

- Planning

- Archiving (for delta comparison)

SAP Analytics Cloud

- Best visualization

- Focus on cloud-based source systems (e.g. SAP S/4HANA Cloud, MTE)

- Data federation/mashing (without EDW harmonization)

- SAP and non-SAP data

- Planning

- Self Service BI

SAP S/4HANA embedded analytics

- Operational data

- Real-time data access

- Transactional decision support

- KPI-driven process handling

Exceptions (related to visualization preferences, cost, time, …)

Summary

Analytics in the context of SAP S/4HANA
The complete portfolio

Intelligent Suite

SAP S/4HANA

SAP BW/4HANA

SAP Analytics

Big data

SAP Data Hub
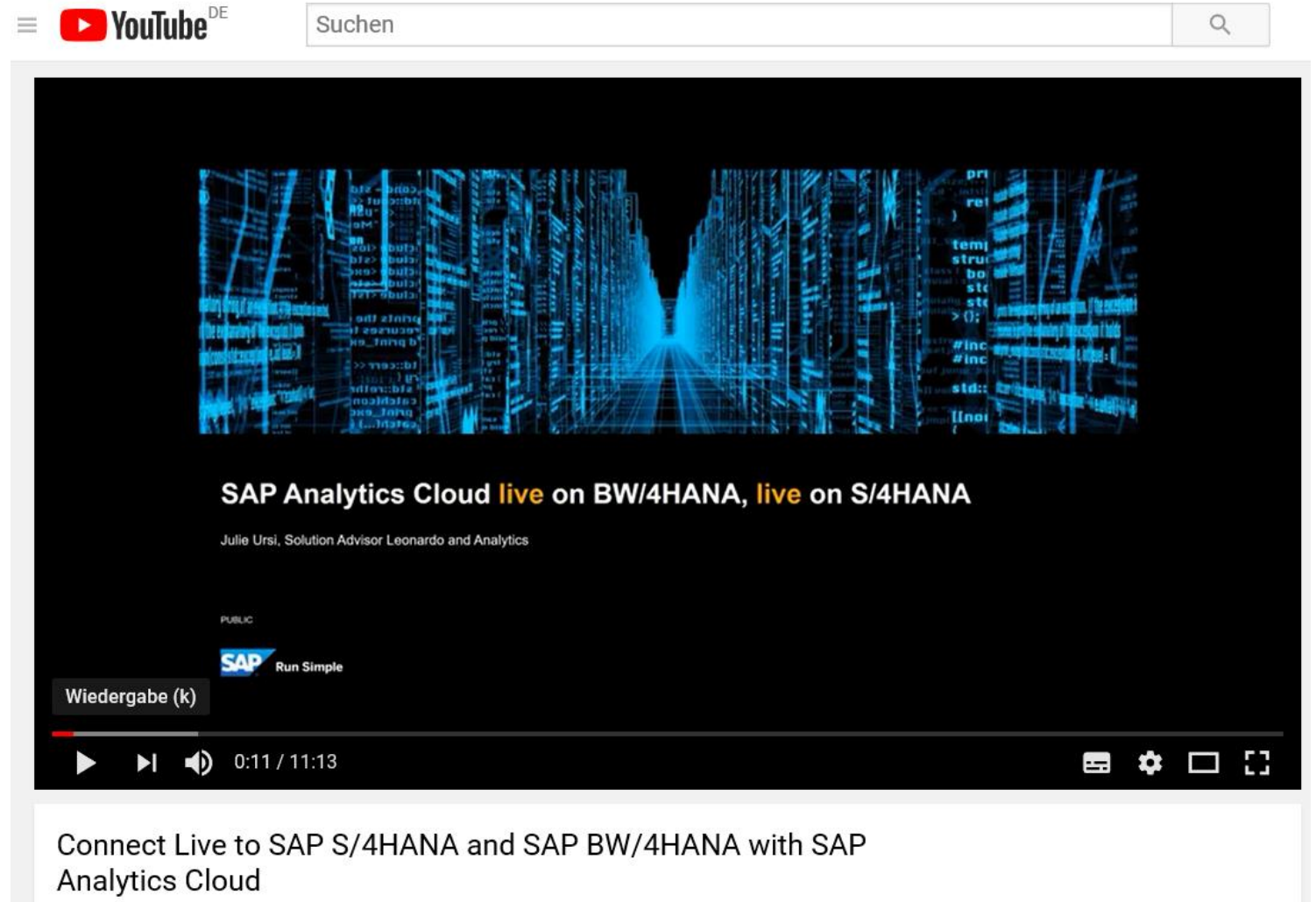
SAP SQL Data Warehousing

with SAP HANA 2.0
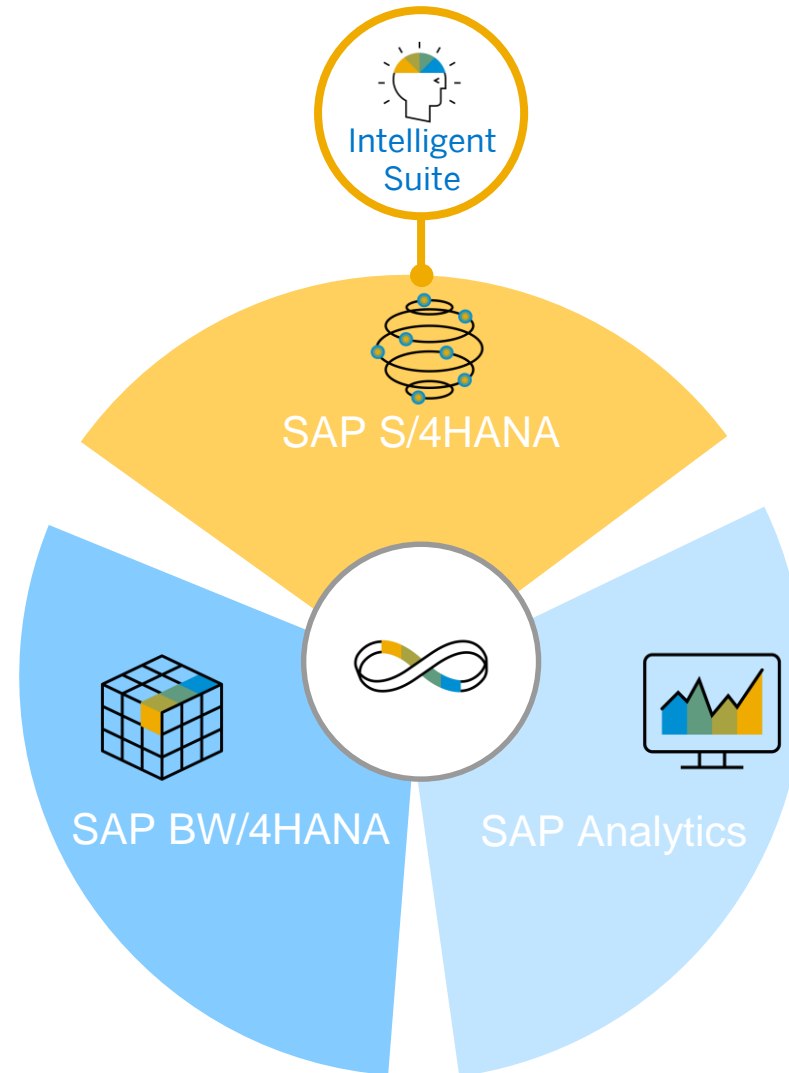
Demo (Full Integration)

SAP Analytics Cloud live on BW/4HANA, live on S/4HANA

Julie Ursi, Solution Advisor Leonardo and Analytics

PUBLIC

Connect Live to SAP S/4HANA and SAP BW/4HANA with SAP Analytics Cloud

https://www.youtube.com/watch?v=nuc29Zy4U6Y&feature=youtu.be

Blogs

What is SAP S/4HANA embedded analytics? How does it add value?
http://bit.ly/2cPkeqF

How do I get started with embedded analytics?
http://scn.sap.com/community/s4hana/blog/2016/05/27/getting-started-with-s4-hana-embedded-analytics

How does the SAP S/4HANA embedded analytics architecture look like? http://scn.sap.com/community/s4hana/blog/2016/09/27/journey-of-datafrom-tables-to-tiles--a-sneak-peek-into-the-s4-hana-embedded-analytics-architecture

SAP S/4HANA Extensibility
https://blogs.sap.com/2017/03/01/scn-s4hana-extensibility-scenario-diagrams/

Embedding Predictive Analytics into SAP S/4HANA Cloud
https://blogs.sap.com/2017/05/16/embedding-predictive-analytics-into-sap-s4hana/

SAP S/4HANA and SAP BW/4HANA positioning
https://blogs.sap.com/2017/08/15/sap-s4hana-and-sap-bw4hana-what-to-do-where/

openSAP

Extending SAP S/4HANA Cloud and SAP S/4HANA

Youtube

SAP S/4HANA Cloud

Analysis Path Framework

Fiori Apps Library
https://fioriappslibrary.hana.ondemand.com/sap/fix/externalViewer/

Documentation

SAP S/4HANA

SAP S/4HANA Cloud

Customize and use SAP S/4HANA embedded analytics!

➢ Configure SAP S/4HANA embedded analytics for your landscape

➢ Use embedded analytics for operational reporting and process analytics

➢ Integrate with other SAP tools for data warehousing, business intelligence, and predictive analytics

Purchase the print or e-book at sap-press.com/4690

SAP S/4HANA Embedded Analytics: The Comprehensive Guide
Written by: Jürgen Butsmann, Thomas Fleckenstein, Anirban Kundu
430 pages | 09/2018 | **E-book:** $69.99 | **Print:** $79.95 | **Bundle:** $89.99

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In Arbeit…

SAP BW/4HANA

Home Page
https://sap.com/bw4hana

Community / Product Page
https://sap.com/bw4hana10

Documentation
https://help.sap.com/bw4hana20
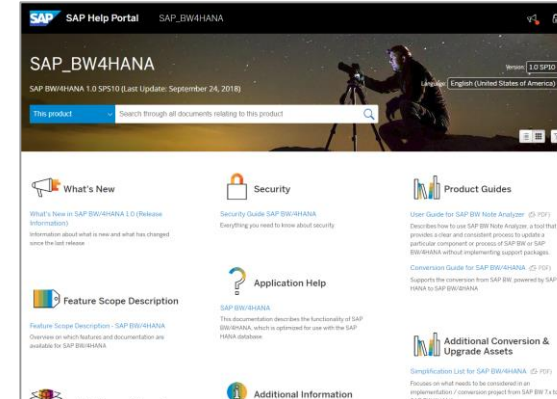
Product Roadmap
https://sap.com/roadmaps
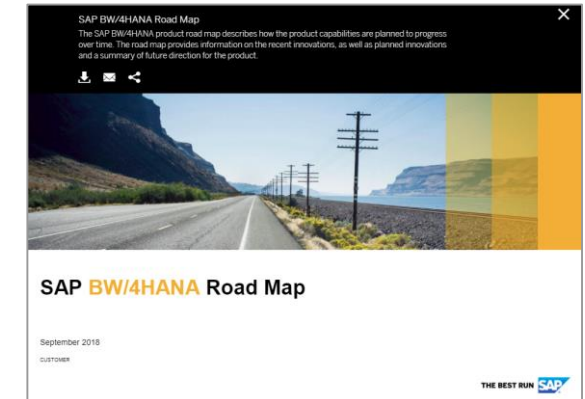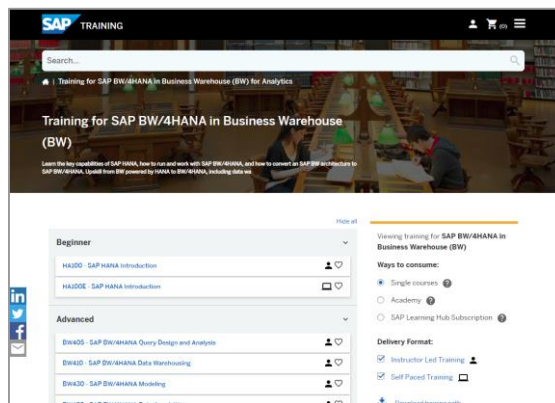
Training & Certification
https://training.sap.com/

Get Started
Free Learning @ openSAP, Free Trial

Get Help
FAQ, Q&A, Community Wiki, Support, Availability

Read & Learn More
SAP Blogs, Community Blogs, Learning Journey

Transition from SAP BW
Blog, SAP Activate Roadmap, SAP Readiness Check

Related Solutions
SAP HANA, SAP Data Hub, SAP Analytics Cloud

Watch
Demos & Tutorials,
YouTube Channel,
SAP HANA Academy

Share & Follow
#BW4HANA,
#TheFutureofDW

SAP Analytics Cloud

https://www.sapanalytics.cloud/

Thank you.

Contact information:

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Karsten.Ruf@sap.com

Jürgen Butsmann
Director Solution Management SAP S/4HANA
Juergen.Butsmann@sap.com

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Appendix

SAP S/4HANA embedded analytics – Overview of current Offering
per Type of User

End-User: Analyze the Data and act according to Insights

Multi-dimensional reports	SAP Smart Business KPIs / APF	Query Browser	Analytical List Pages	Overview Pages	Analytical Fiori Apps

Key-User: Enable the End-User

CDS Key User Tooling (e.g. Query Designer)	KPI and Report Modelling Apps

IT-User: Provide the single source of truth in one semantic layer

CDS View maintenance: ABAP for Eclipse

SAP Analytics

SAP Analytics Cloud

SAP BusinessObjects Enterprise:

Examples: Analysis for Office, Design Studio

SAP S/4HANA Embedded Analytics Overview – Business User

Smart Business KPIs
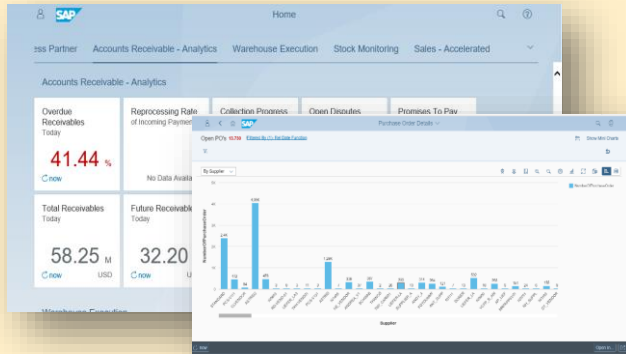
Smart Business KPIs deliver KPI monitoring on the Fiori Launchpad and drill-down capabilities into further analytical or transactional Fiori apps, save personal variants.

Overview Pages
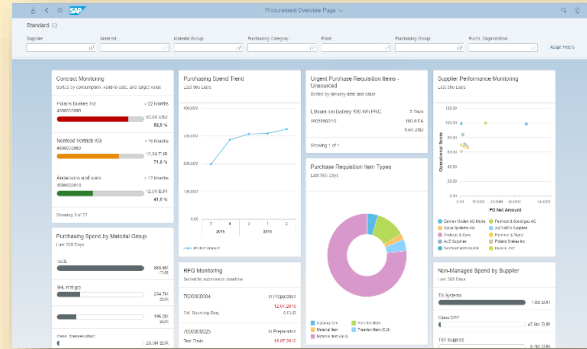
Get a consolidated view on a certain domain, e.g. Purchasing. Information presented in analytical tables and charts, take action in the same place or navigate to more details, save personal variants.

Analytical List Pages
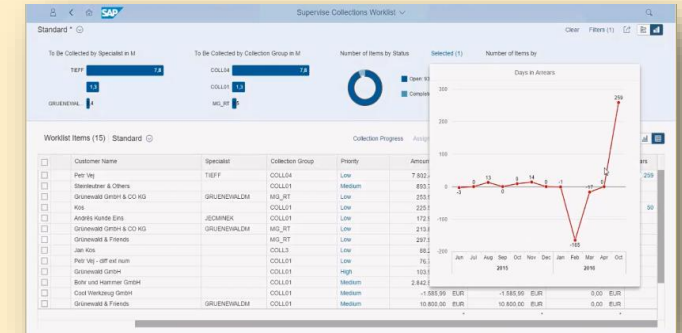
Generic approach to visualize and analyze data. Switch display from table to chart or a combined table-chart-display. Take action directly in the same app or navigate to other apps for more details and actions, save personal variants.

Analysis Path Framework
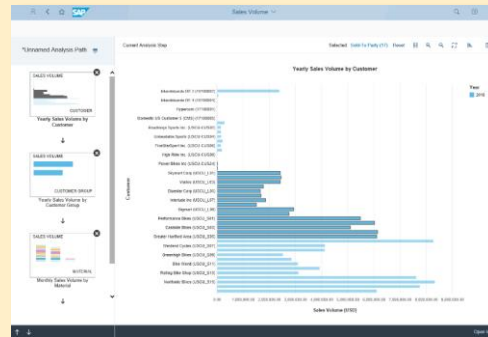
Interactive drill-down to explore KPIs and their influencing factors by creating sequences of analytics steps which consist of charts or tables, save personal variants.

Multidimensional Reports
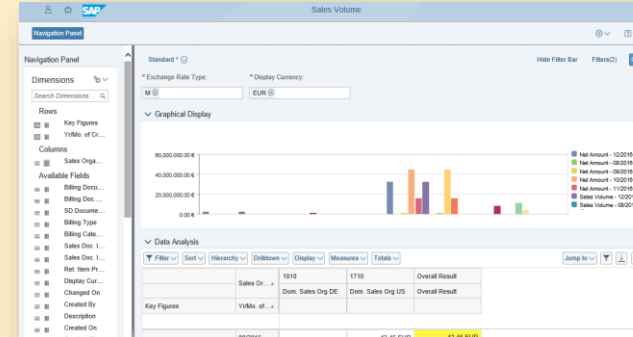
Generic approach to analyze data and visualize results for multidimensional analysis. Switch the display from pivot-table to chart and to a combined table chart display, save personal variants.

SAP S/4HANA Embedded Analytics Overview - Analytics Specialist

Smart Business KPI & Report Design
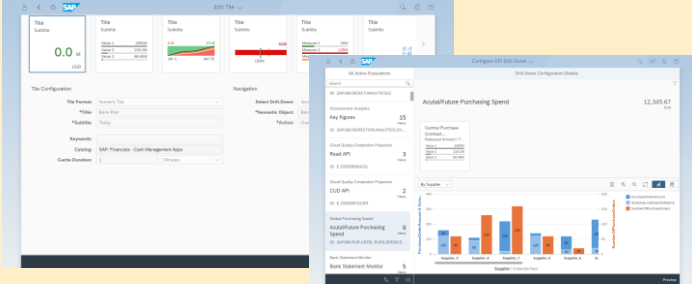
Smart Business KPI & Report Modeler enables your company to define, manage, and leverage consistent KPIs and Reports across all your business functions.

View Browser

Search, browse and tag analytical and non-analytical queries. This application displays all the views that are created and released by SAP as well as the customer-created SAP views.

Custom Views

If you need access to data in your system in a way the system does not offer so far, you can create your own data access by making use of a Custom Core Data Services view.

Custom Analytical Queries

Custom Analytical Queries transforms and organizes raw data delivered from business documents into a meaningful multidimensional report.

Custom Catalog Extensions

With this app you assign your apps, such as new multidimensional reports or KPIs to the required business catalogs and thus to the user roles.

Transport Management (Administrator)

Creating software collections, add extension items to your software collections, export your software collection to transport extension items from quality system to productive system.

Integration with SAP Fiori Launchpad

- Open SAP Analytics Cloud Stories from Fiori Launchpad

- Easily create custom Fiori tiles to launch a Story using OAUTH-enabled Story Catalog Service

- Integrate available pre-defined SAP Analytics Cloud Best Practices content with configured Fiori tiles
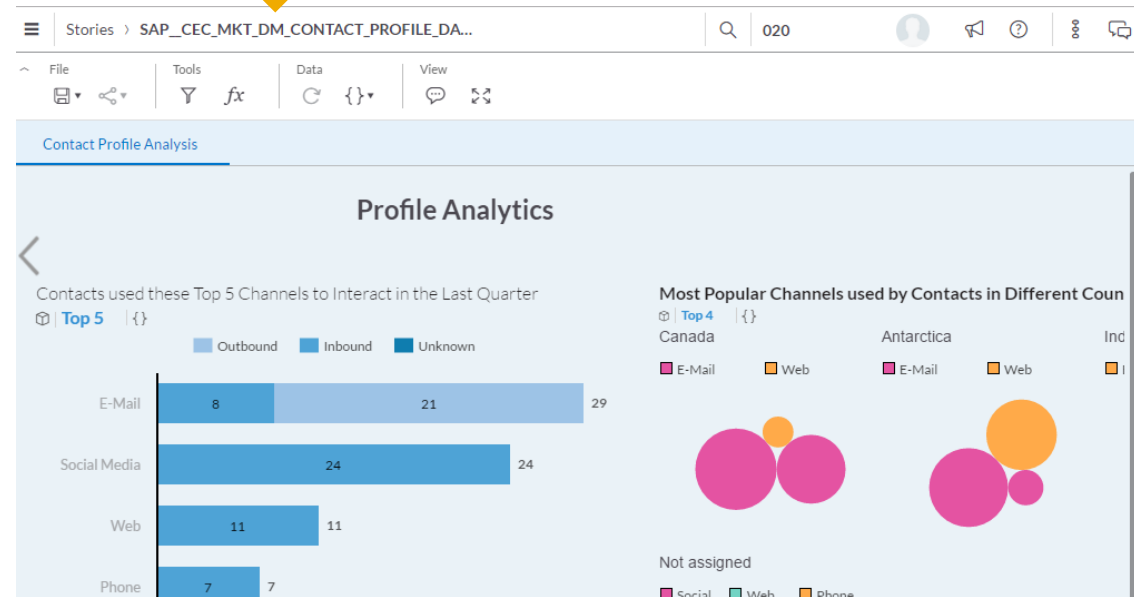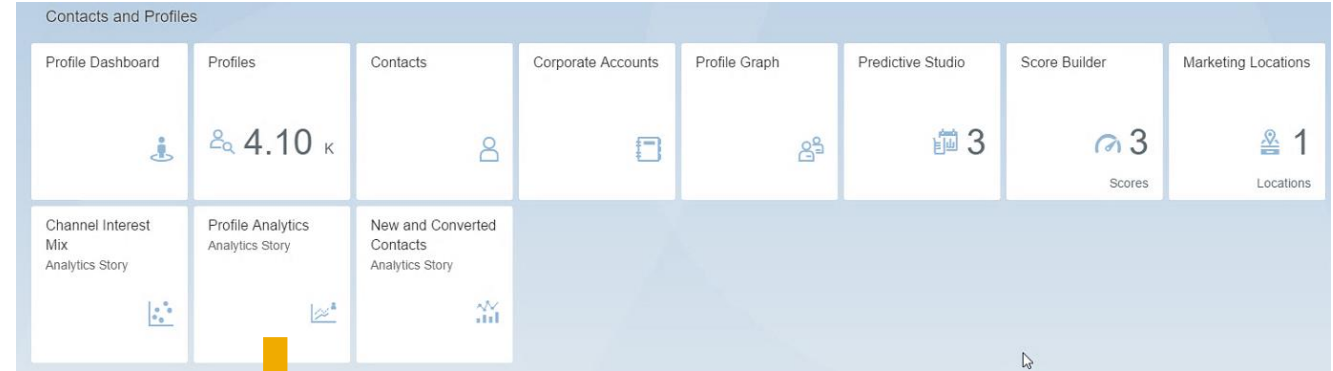
SAP Analytics Cloud + SAP S/4HANA = High-performing Analytics

BI, Predictive & Planning based on SAP S/4HANA business logic **in Real-Time** – data changes and modifications reflected **instantly**

Unique deep integration with Live Connection to CDS Views, Business Content (models, stories, dashboards), Fiori tile integration, Jump-to-transaction

Leverage existing SAP S/4HANA **Security & Authorizations** Plug & Play without any back-end modifications

Enrich SAP S/4HANA data by adding your own calculations (formulas, exception aggregations) and **delegate processing** to SAP S/4HANA

Use the **Analytics Hub** to bring all your information together and accelerate **adoption** of analytics in your business user community

Explore **SAP Digital Boardroom** for a real-time view of your critical business metrics in one place, supporting steering excellence of your **Intelligent Enterprise**