



# **SAP Analytics Cloud: Overview, Latest News and Modelling**

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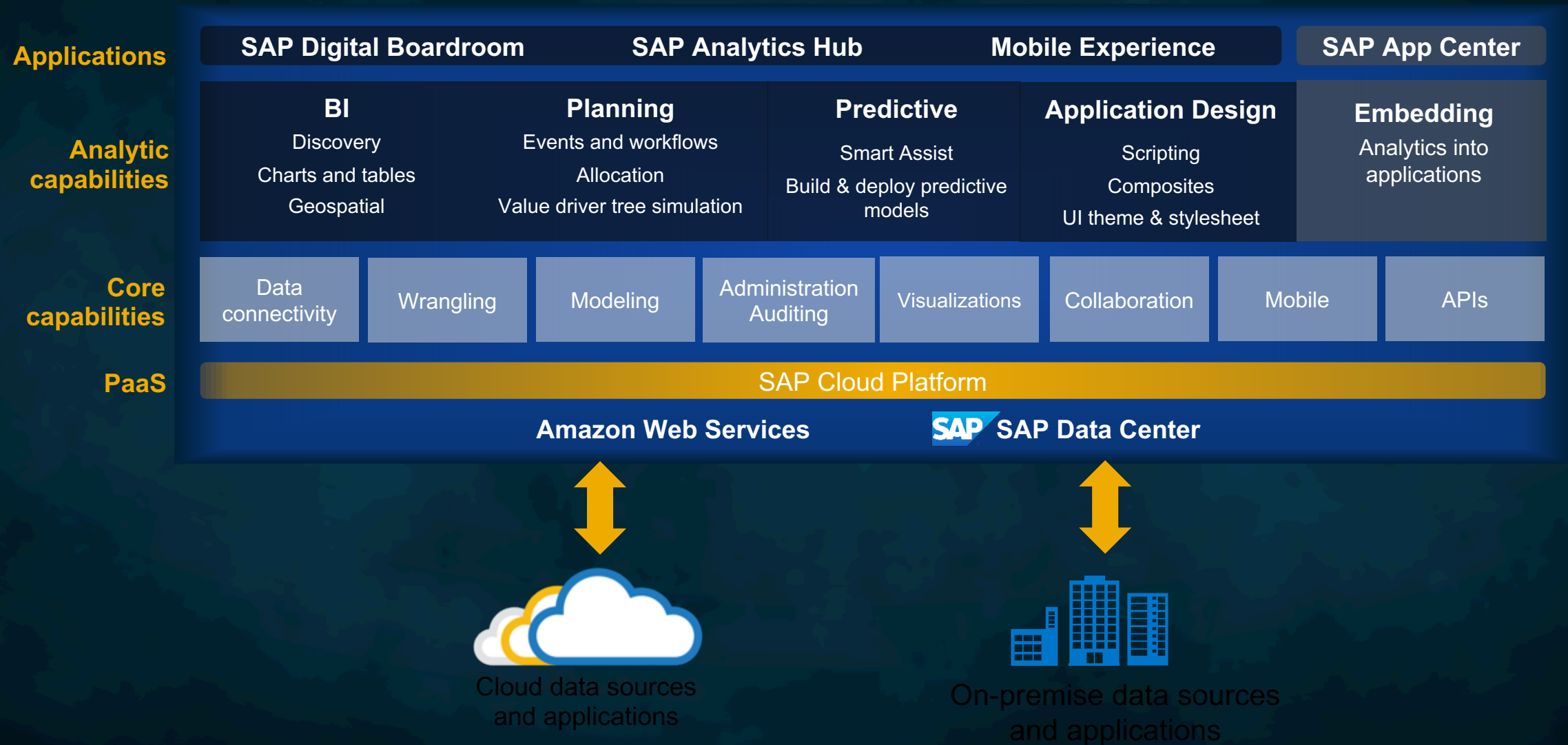
# Disclaimer

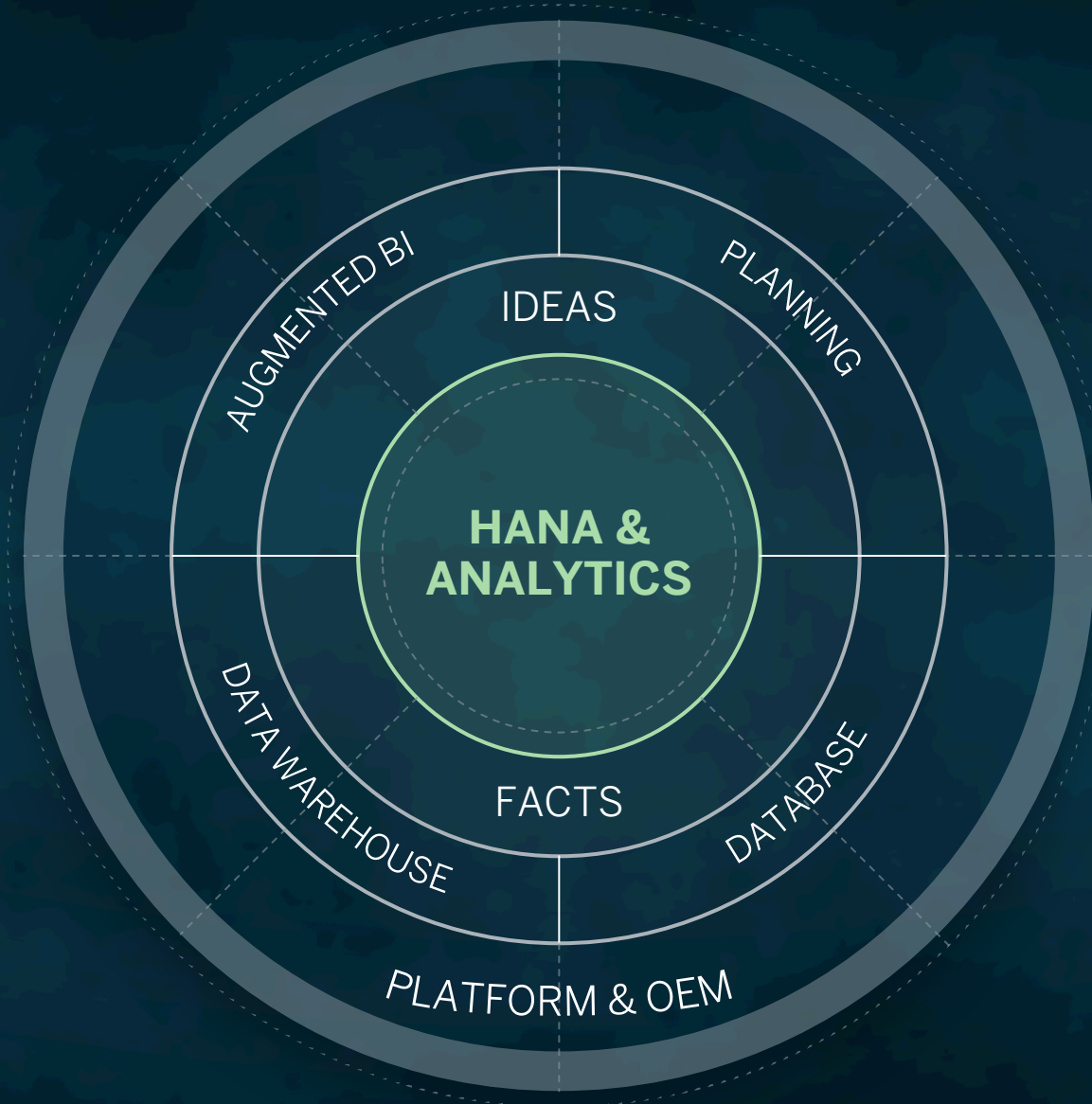


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# SAP Analytics Cloud Architecture



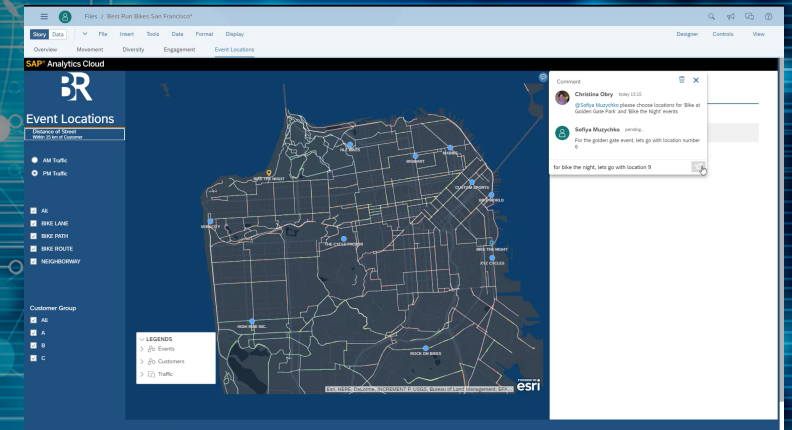
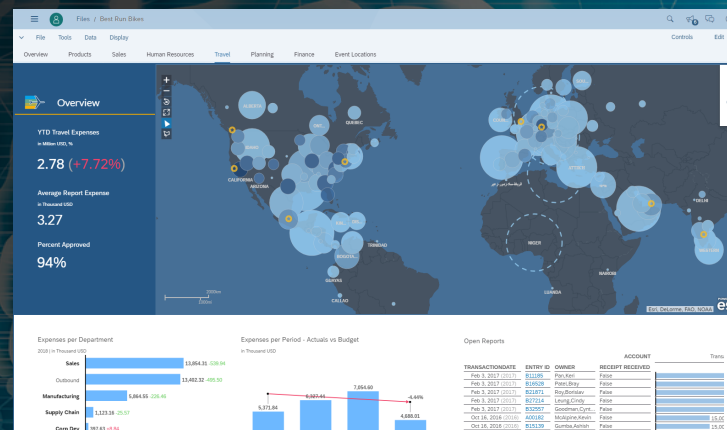




# From Self Service BI to Augmented BI

The screenshot shows the 'Modeler / Data Integration' interface in SAP Analytics Cloud. It displays a table of employee data with columns for Employee ID, Employee Name, Gender, Department, Office ID, Office Location, Employment Type, Age, Position, and Annual Salary. The table lists 27 employees, including roles like Accounting, Engineering, and Management across various office locations like Brussels, New York City, and Chicago.

Employee ID	Employee Name	Gender	Department	Office ID	Office Location	Employment Type	Age	Position	Annual Salary
001	Joe Gini	Male	Accounting	Office_EU	Brussels	Part Time	39	Director	25995
002	Marshall Michel	Male	Accounting	Office_US	New York City	Part Time	39	Director	27995
003	Curtis Berntsen	Male	Accounting	Office_US	Brussels	Full Time	30	Associate	65626
004	Gail Gholde	Male	Accounting	Office_US	Brussels	Contract/Hourly	39	Director	85662
005	Gaven Brown	Male	Accounting	Office_US	New York City	Full Time	45	Manager	90324
006	Berkley Simonson	Male	Accounting	Office_US	Brussels	Contract/Hourly	49	Manager	80325
007	Isabelle David	Male	Accounting	Office_US	Brussels	Contract/Hourly	57	VP	112563
008	Olga Pankovsk	Male	Accounting	Office_US	New York City	Part Time	39	Associate	26995
009	Reiko Gray	Female	Accounting	Office_US	New York City	Full Time	31	Specialist	69568
010	Wesley Woodford	Female	Accounting	Office_US	Brussels	Part Time	44	Manager	79568
011	Frieda Helms	Female	Accounting	Office_US	New York City	Full Time	53	Director	90356
012	Adela Li-Merchant	Female	Accounting	Office_US	Chicago	Full Time	29	Associate	29015.094
013	Margaret Kingstone	Female	Accounting	Office_US	Chicago	Part Time	29	Associate	39995
014	Guilherme Roudies	Male	Engineering	Office_US	Chicago	Full Time	25	Associate	43519
015	Kelly Taggart	Male	Engineering	Office_US	Chicago	Full Time	25	Specialist	53895
016	Nicole Raycroft	Male	Engineering	Office_US	Chicago	Full Time	25	Specialist	68995
017	Benedicta Buten	Male	Engineering	Office_US	Chicago	Full Time	26	Associate	57995
018	Eliane Thorp	Male	Engineering	Office_US	Chicago	Full Time	26	Associate	47995
019	Elise Pivington	Male	Engineering	Office_US	Chicago	Full Time	26	Associate	60323
020	Guillermo Fumazon	Male	Engineering	Office_US	Chicago	Full Time	29	Specialist	72154
021	Sandra Cline	Male	Engineering	Office_US	Chicago	Full Time	29	Specialist	72154
022	Philips Carver	Male	Engineering	Office_US	Chicago	Full Time	29	Specialist	48033
023	Zacharias Lambert	Male	Engineering	Office_US	Chicago	Full Time	29	Specialist	69235
024	Valentin Gonsauer	Male	Engineering	Office_US	Chicago	Full Time	29	Specialist	69235
025	Amyr Scottner	Male	Engineering	Office_US	Chicago	Full Time	29	Specialist	69235
026	Jamison Gibbard	Male	Engineering	Office_US	Seattle	Full Time	39	Manager	80325



## Connect and prepare your Information

- Prepare and model cloud and on-premise data from your browser
- Data connectors from SAP (BW, HANA, SAP Cloud Platform, Universes) and non-SAP sources
- Linking aggregated data
- Cross dataset calculations

## Visualize and build your views

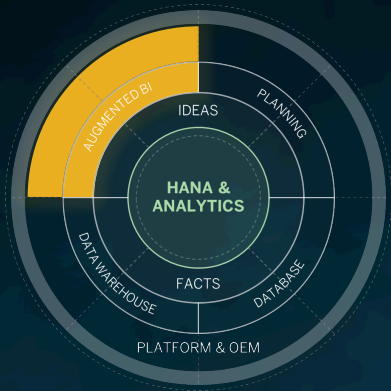
- Design, visualize, and create your stories live
- Add simple location analytics into your visualizations
- Personalize your own dashboard views

## Share with your team

- Simply collaborate with your team
- Take action on your data
- Use permissions to control who can view and edit your analytics

# Intelligent Augmentation

## with SAP Analytics Cloud



### Conversational

Ask questions in a conversational manner with instant results



### Automated

Detect drivers of a KPI and take the next best action using automated machine learning



### Predictive

Predict potential outcomes and forecasts with the push of a button



# Simplify Access to Insight with Augmented BI

## Machine Learning Integrated into SAC

### Search to Insight:

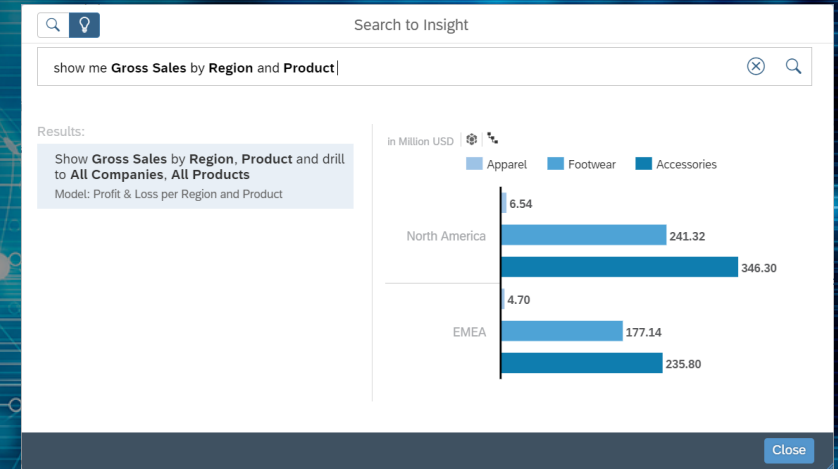
- Just ask your question in natural language
- Discover top influencers of performance without having to look and automatically predict future values to improve results
- Get insights on-the-fly and continue your exploration in the story

### Smart Discovery:

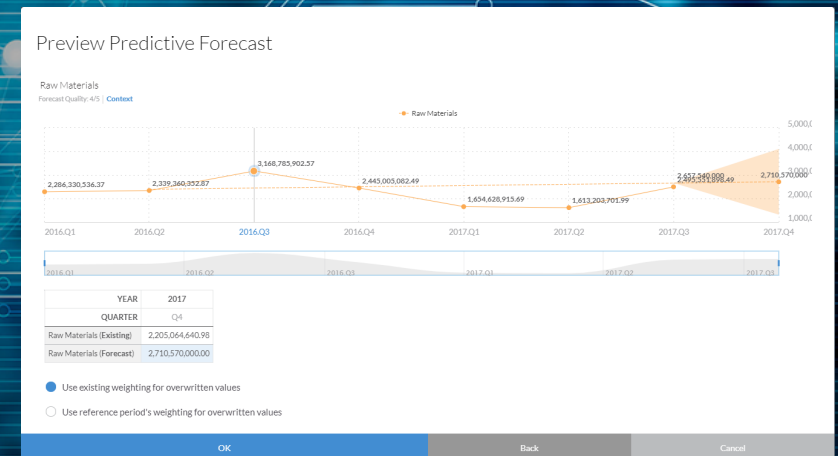
- Auto-generate fully populated, multi-tabbed stories with Overview, Key Influencers, Unexpected Values and Simulation tabs
- Analyze outliers and expose key influencers driving business-critical KPIs
- Predict future outcomes with interactive what-if simulations

### Smart Predict:

- Classification, Regression, Time Series Forecasting
- Predictive made simple for business users
- Identify areas of improvement and risk to missing targets
- Forecast future values based on trustworthy results



*Search to Insight with natural language.*

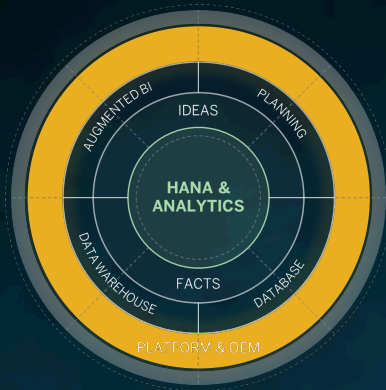


*Smart Predict using forecasting.*



# Platform & OEM Services

## Re-used in Data Management, Analytics and Applications



Platform & OEM

### Analytics Hub

### Pre-defined Analytical Content & Applications



Semantics  
Modeler



Analytics  
Designer



Content &  
Application  
Lifecycle  
Management



Integration /  
OEM  
Services  
(incl. live  
connectivity)



Data  
Management  
(incl. data  
prep, ETL)



Reporting  
Services  
(incl.  
broadcasting,  
scheduling,  
commenting)



Search

### Meta Data Repository

### Multi-Cloud Foundation and Infrastructure Services

# Data Integration

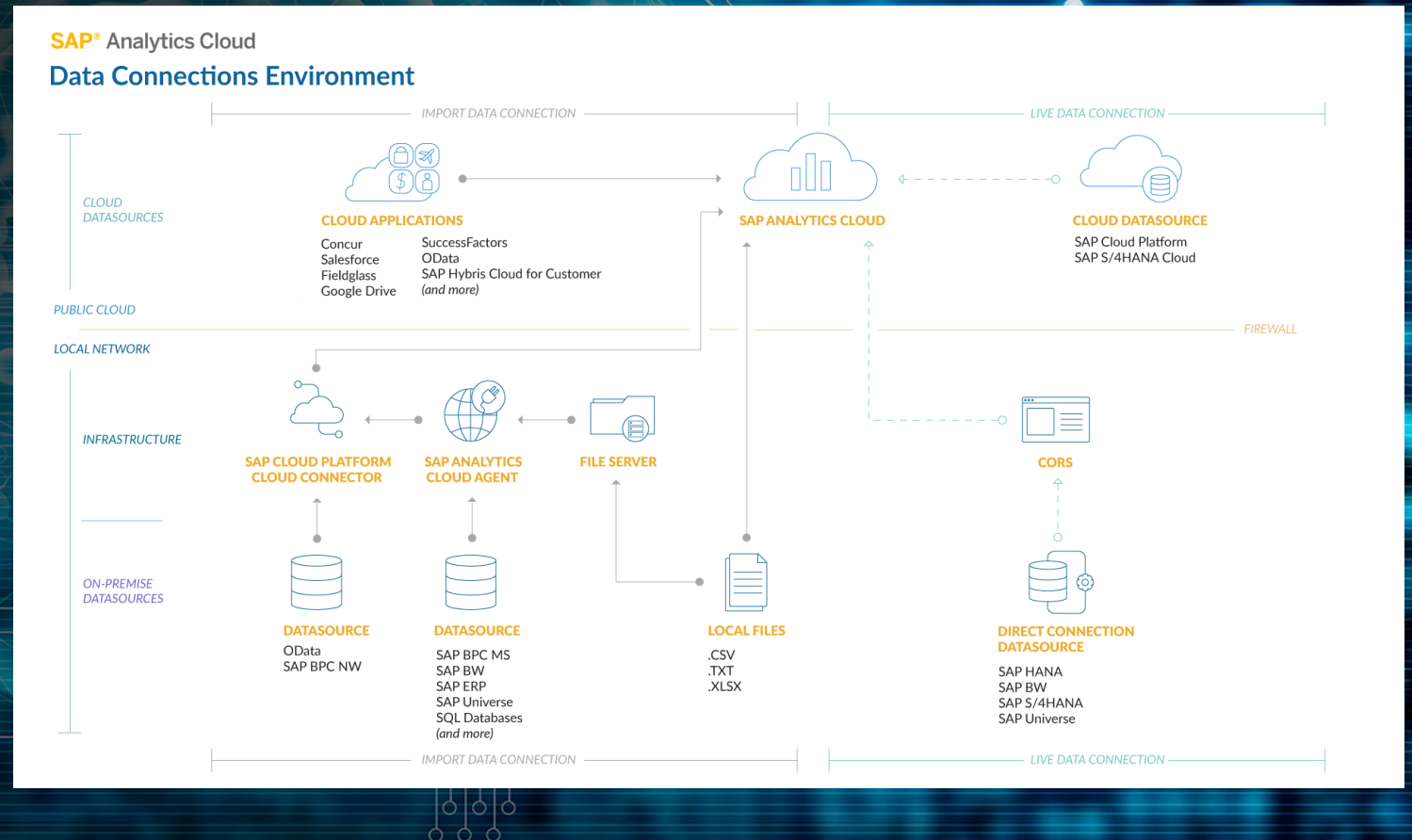
Connect to data anywhere stored in on-premise databases, cloud databases, and personal files. Enrich data and business metadata in preparation for self-service data analysis through purpose built data modeling capabilities and calculations

## Live connections

- Data replication is not required
- Leverage business metadata directly without additional modeling
- Leverage existing security and data authorizations

## Data import connections

- Business users can model data with Smart Data Preparation
- Easily track and reverse data transformations
- Refresh data on demand or via schedule





# Data Sources

## Live

### Cloud data sources

SAP Cloud Platform<sup>1</sup> SAP S/4HANA Cloud SAP SuccessFactors SAP Ariba

### SAP data sources

SAP HANA SAP BW SAP BW4/HANA SAP S/4HANA

SAP BPC Embedded SAP BusinessObjects Universe

### Access via SDI for SAP Cloud Platform & SAP HANA

Apache Hive AWS SAP Vora SAP Sybase ASE, IQ, ESP OData

Microsoft SQL Server Spark SQL Oracle Teradata MaxDB

IBM DB2 MySQL Netezza Facebook Google+ Twitter

### Partner delivered

APOS DB2 Denodo Microsoft Analysis Services Microsoft Azure

Microsoft SQL Server MongoDB MongoDB Atlas MySQL Netezza

Oracle Oracle Essbase Oracle Exadata SAP IQ SAP SQL Anywhere

Redshift Teradata Google BigQuery Cloudera Hortonworks

Amazon S3

■ Delivered ■ Planned within the next 6 months ■ Partners

## Import

### Cloud data sources

SAP Hybris Cloud for Customer SAP Cloud Platform<sup>1</sup> SAP Business ByDesign SAP S/4HANA Cloud  
SAP SuccessFactors SAP Fieldglass SAP Workforce Analytics Concur OData Dow Jones DNA  
Google BigQuery Google Drive Google Sheets Salesforce 3<sup>rd</sup> party CRM 3<sup>rd</sup> party Cloud Storage

### SAP data sources

SAP BPC NW & MS SAP HANA SAP ECC SAP BusinessObjects Universe SAP BW  
SAP S/4HANA SAP BW4/HANA

### Other data sources

IBM Microsoft SQL Server MySQL Netezza OData Oracle  
CSV Excel Progress OpenEdge Additional on-premise sources

### Partner delivered

APOS CDATA DataDirect Cloud  
Web Intelligence QuickBooks eloqua  
Microsoft SharePoint Google Analytics  
NetSuite CRM & ERP Microsoft Dynamics CRM  
Oracle Marketing Cloud Hubspot  
MongoDB Marketo  
SugarCRM



# BW Live

## Direct. Secure. Simple.

- “BW Live” embraces live connectivity to BW, BW/4HANA and S/4HANA.
- No additional modeling in SAC needed, BW query functionality supported out-of-the box.
- No data replication into SAC
- Data remains behind your corporate firewall all the time when running queries and displaying results.
- No authorization replication needed: Underlying Authorizations are fully respected.



# SAP Analytics Cloud Integration with SAP BW and BW/4HANA

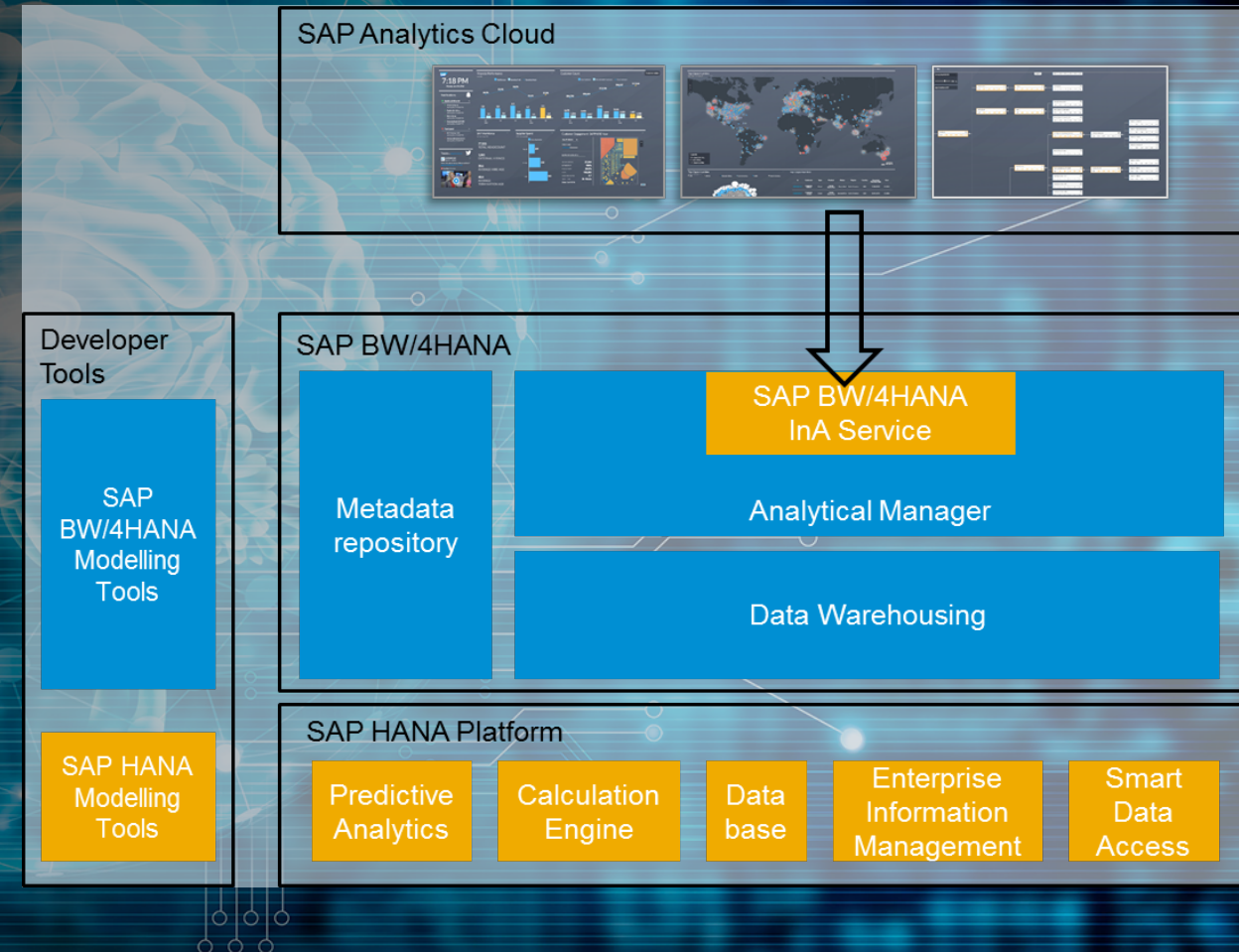
## Unique Direct Connectivity With BW Leveraging Best-In-Class SAP Interfaces

- **Direct. Secure. Simple.**

- Simply connect to BW Queries or generated HANA views in your on-premise BW systems
- No additional modeling in SAC needed (renaming and grouping of measures and dimensions is possible, but optional)
- No data replication into SAC
- Data remains behind your corporate firewall all the time when running queries and displaying results
- No authorization replication needed: BW authorizations are fully respected

- **Best Possible End-to-End Integration.**

- Use of unique best-in-class query interface (Firefly) to BW and HANA engines
- Ability to access BW and HANA features that cannot be accessed through standard query interfaces (SQL, MDX)
- Firefly interface is continuously enhanced alongside BW and HANA engine enhancements





# Analytics Designer - What it is

Professional design of centrally governable analytic content, ranging from dashboards via guided analytics to sophisticated planning and Smart Predict applications

## What is an application?

- Applications range from simple dashboards to complex applications
- Applications expose custom logic based on scripting
- Applications are created by a few experts to be consumed by many

## What is application design?

- Rich set of capabilities for professional designers of analysis applications to meet sophisticated business requirements
- Dedicated development environment with advanced scripting capabilities
- Drive standardization of analytics content, create reusable UI elements and application logic (such as headers, footers, toolbars)
- Extending Applications via Custom Widgets and APIs





# Analytics Designer Fundamentals

- **Simple widgets:** images, buttons, dropdown menus, check box group, radio button group, shape, text, web page, RSS reader, clock
- **Data-driven widgets:** tables, charts, filter lines, R widget
- **Container Widgets:** pop-up/dialog and other container widgets
- **Dynamic Layouts:** Dynamic adjustment of screen real-estate without re-arranging all elements
- **Interactions** (e.g. filter, cascading behavior) between different widgets via scripting
- **Dynamic switch between widgets** (e.g. chart and table) at application run time
- Dynamic and flexible **selections on Crosstab and Charts**
- Powerful **scripting capabilities**
- Script Objects for **modularizing and reusing code** for enterprise applications



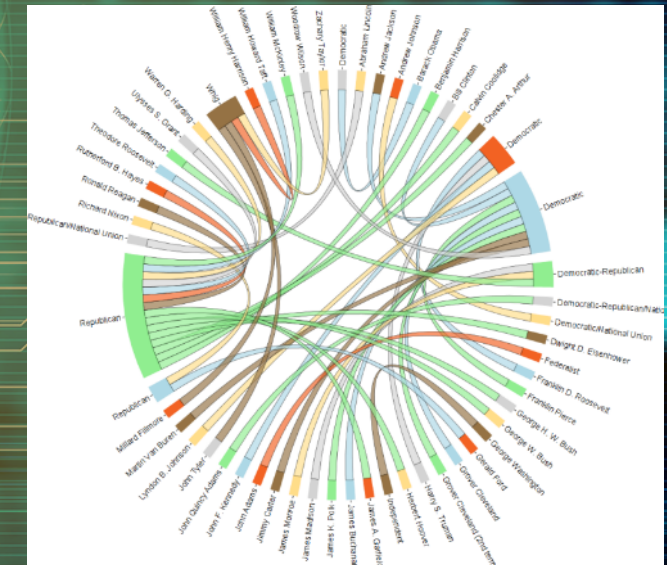
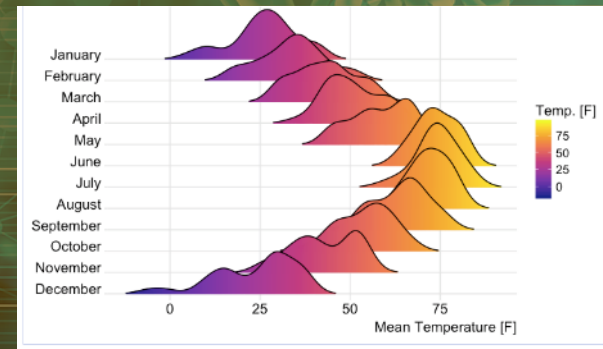
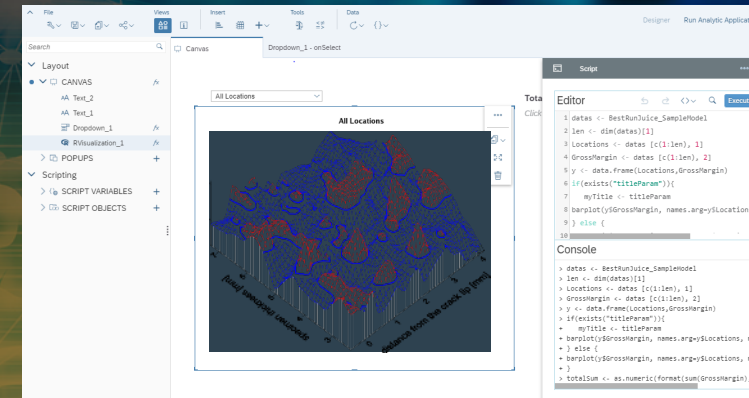
This is the current state of planning and may be changed by SAP at any time.



# Extensions

## Extension capabilities to enable customers or partners to extend the tool

- **R Widgets** with scripting access
- **Composites**
  - Designers can create a collection of widgets to make a composite
  - Format by drag and drop of standard widgets, logic definition by data binding and scripting
  - Re-usable across applications
  - Decompose complex applications into smaller, manageable parts
- **Custom Widgets**
  - Developers can create sophisticated custom widgets
  - Custom functionality





# Closed-loop Scenarios

## Capabilities for closed-loop scenarios

- **OData calls** to call into transactional system
- Support **planning** capabilities with scripting access
  - Expose Planning Features via toolbar and quick action menus
  - Customize the planning workflow programmatically by scripting
- Supporting **predictive capabilities** with scripting access
  - Use trained model to predict the future
  - Control prediction workflow by scripting
  - Visualize and access predictive results

Predict

IoT Machine Maintenance

Predict the Remaining Useful Life (RUL)

Factory A

ACCOUNT	Predicted RUL (Months)	Aggregated Repair Cost	Cycle	Designed Asset Lifetime	Initial Cost	Sensor01	Sensor02	Sensor03	Sensor04	Sensor05	Sensor06	Sensor07	Sensor08	Sensor09	Sensor10	Sensor11
MACHINENO																
1001	1	15,650	178	180	300,000	518.67	643.38	1,606.75	1,429.91	14.62	21.61	552.32	2,388.10	9,201.76	1.30	48.0
1002	2	11,200	175	180	300,000	518.67	643.21	1,599.93	1,431.79	14.62	21.61	551.68	2,388.20	9,135.93	1.30	48.1
1003	5	11,500	169	180	300,000	518.67	643.63	1,610.85	1,425.26	14.62	21.61	551.67	2,388.12	9,177.42	1.30	48.1
1004	4	11,500	173	180	300,000	518.67	643.74	1,604.83	1,434.00	14.62	21.61	551.89	2,388.18	9,135.71	1.30	48.0
1005	2	10,070	172	180	300,000	518.67	643.37	1,595.75	1,428.40	14.62	21.61	551.79	2,388.12	9,137.75	1.30	48.1
1006	2	20,110	170	180	300,000	518.67	643.93	1,593.75	1,432.99	14.62	21.61	552.17	2,388.12	9,129.66	1.30	48.0
1007	4	10,200	156	180	300,000	518.67	643.76	1,604.45	1,428.06	14.62	21.61	551.53	2,388.17	9,141.14	1.30	48.2
1008	4	11,002	187	180	300,000	518.67	643.25	1,599.84	1,431.95	14.62	21.61	551.67	2,388.18	9,127.94	1.30	47.9
1009	5	16,800	168	180	300,000	518.67	643.27	1,605.39	1,424.66	14.62	21.61	551.99	2,388.19	9,120.77	1.30	48.0
1010	4	16,100	171	180	300,000	518.67	643.52	1,599.89	1,436.27	14.62	21.61	552.11	2,388.21	9,172.45	1.30	48.0
1011	5	16,500	176	180	300,000	518.67	643.65	1,599.28	1,422.70	14.62	21.61	551.76	2,388.13	9,115.64	1.30	47.9
1012	5	11,050	168	180	300,000	518.67	643.53	1,600.71	1,436.63	14.62	21.61	551.82	2,388.08	9,169.37	1.30	47.8
1013	2	20,210	170	180	300,000	518.67	643.93	1,593.75	1,432.99	14.62	21.61	552.17	2,388.12	9,129.66	1.30	48.0
1014	4	10,109	172	180	300,000	518.67	643.63	1,603.61	1,425.34	14.62	21.61	552.10	2,388.15	9,143.00	1.30	48.0
1015	2	13,703	175	180	300,000	518.67	643.46	1,596.57	1,426.36	14.62	21.61	552.17	2,388.20	9,139.00	1.30	48.2
1016	3	13,600	177	180	300,000	518.67	643.29	1,605.22	1,425.95	14.62	21.61	551.90	2,388.14	9,212.72	1.30	48.0
1017	5	11,000	157	180	300,000	518.67	644.07	1,597.36	1,432.96	14.62	21.61	551.11	2,388.24	9,098.48	1.30	48.1
1018	5	12,300	162	180	300,000	518.67	643.87	1,601.83	1,431.55	14.62	21.61	551.46	2,388.16	9,149.29	1.30	48.2
1019	4	9,800	181	180	300,000	518.67	643.50	1,602.21	1,432.17	14.62	21.61	551.85	2,388.11	9,144.17	1.30	48.3
1020	3	15,010	169	180	300,000	518.67	643.00	1,604.80	1,427.89	14.62	21.61	551.78	2,388.21	9,132.96	1.30	47.9
1021	4	12,900	170	180	300,000	518.67	643.52	1,605.43	1,428.30	14.62	21.61	552.02	2,388.19	9,131.61	1.30	48.2

IoT Machine Maintenance

What-If Simulation

Projection Period: RUL <= 3 Months

Mandatory Replacement Lifetime: 180 Months

Total Budget: 2,000,000 Euro

Supplier List: Supplier A

Repair

Replace

Total Cost / Budget

Create Order

Supplier: Supplier A

Contact Info: test\_predictive@Suppliers.com

Order Summary:

Repair:	Quantity:	Price:	Repair Cost:
Repair:	7	65,000 Euro	455,000 Euro
Replace:	4	352,000 Euro	1,408,000 Euro
<b>Total Cost</b>			<b>1,863,000 Euro</b>

Order

Order

IoT Machine Maintenance

What-If Simulation

Projection Period: RUL <= 3 Months

Mandatory Replacement Lifetime: 180 Months

Total Budget: 2,000,000 Euro

Supplier List: Supplier A

Repair

Replace

Total Cost / Budget

7 4 93%

ACCOUNT	Predicted RUL (Months)	Aggregated Repair Cost	Cycle	Designed Asset Lifetime	Initial Cost
MACHINENO					
1001	[X] Replace 1	15,650	178	180	300,000
1002	[X] Repair 2	11,200	175	180	300,000
1005	[X] Repair 2	10,070	172	180	300,000
1006	[X] Replace 2	20,110	170	180	300,000
1013	[X] Replace 2	20,210	170	180	300,000
1015	[X] Repair 2	13,703	175	180	300,000
1016	[X] Repair 3	13,600	177	180	300,000
1020	[X] Replace 3	15,010	169	180	300,000
1026	[X] Repair 2	11,200	172	180	300,000
1027	[X] Repair 1	11,500	178	180	300,000
1028	[X] Repair 3	10,070	177	180	300,000

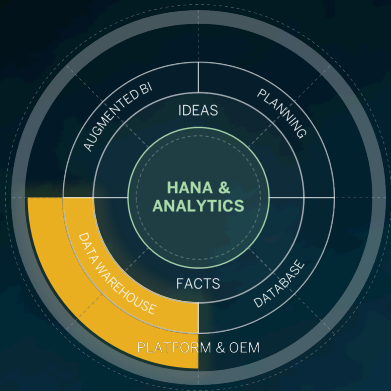
Estimated Repair Costs for Lifetime: 16,500 Euro

Simulate

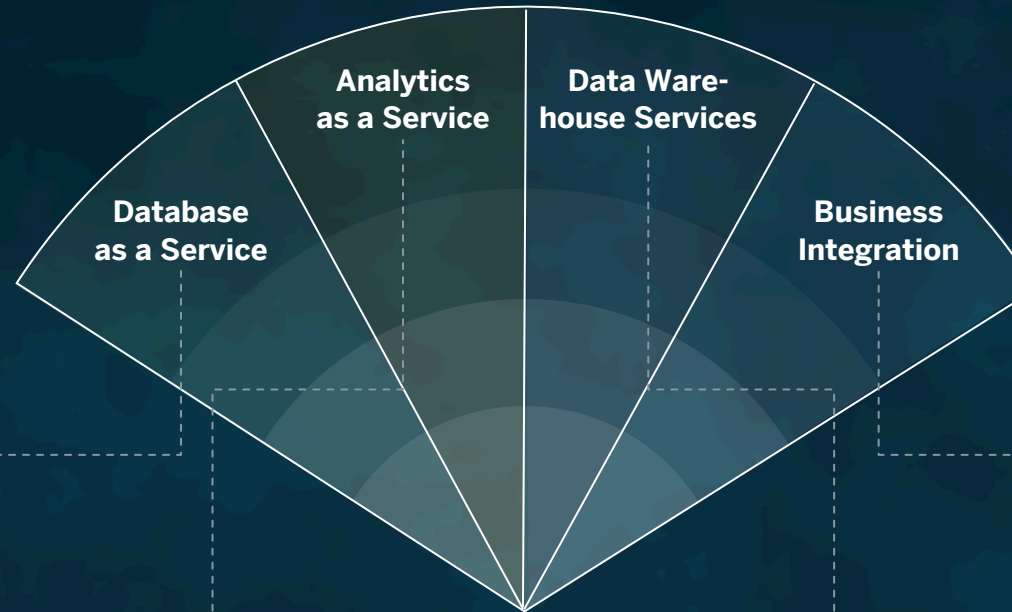
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# SAP Data Warehouse Cloud



## Data Warehouse



### Database as a Service

A Data Warehouse in the cloud needs state-of-the-art elasticity and scaling capabilities. By using HANA we can offer this out-of-the box and are also open for sequel-based ecosystems.

### Analytics as a Service

By building on SAC technology based on HANA, CDW natively brings a solid analytical engine and the respective visualization without the need for additional infrastructure.

### Data Warehouse Services

With features like data governance and life cycle, modelling capabilities, and a space concept, CDW goes far beyond traditional scalable data storages as a true Data Warehousing tool.

### Business Integration

Business content, semantic, modelling, consistent UX across SAP Cloud LoBs and CDW, and a hybrid model with customers' on premise solutions offer a seamless business integration.

Join our Beta Program at [www.sapdatawarehouse.cloud](https://www.sapdatawarehouse.cloud)

### 1. EARLY ACCESS

As a Beta Experience Member, you'll be among the first to try out the SAP Data Warehouse Cloud Beta and provide feedback directly to our development teams.\*



### 2. INTERACT WITH OUR EXPERTS

Get premium access to our Talk Show series featuring experts from SAP answering your questions.



### 3. STAY UP-TO-DATE

We'll keep you informed with helpful content on upcoming innovations and members-only events.



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