



# Build Analytical Applications with SAP ABAP Cloud

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PUBLIC



# What to expect today?

## 01

What is Embedded Analytics?  
Set the Context with ABAP Cloud.

## 02

Current Develop-Flow (Demo)  
Creation of Analytical Model  
& Service Exposure.

## 03

Where do we want to go to?  
“Labs Preview” of the new Flow.

## 04

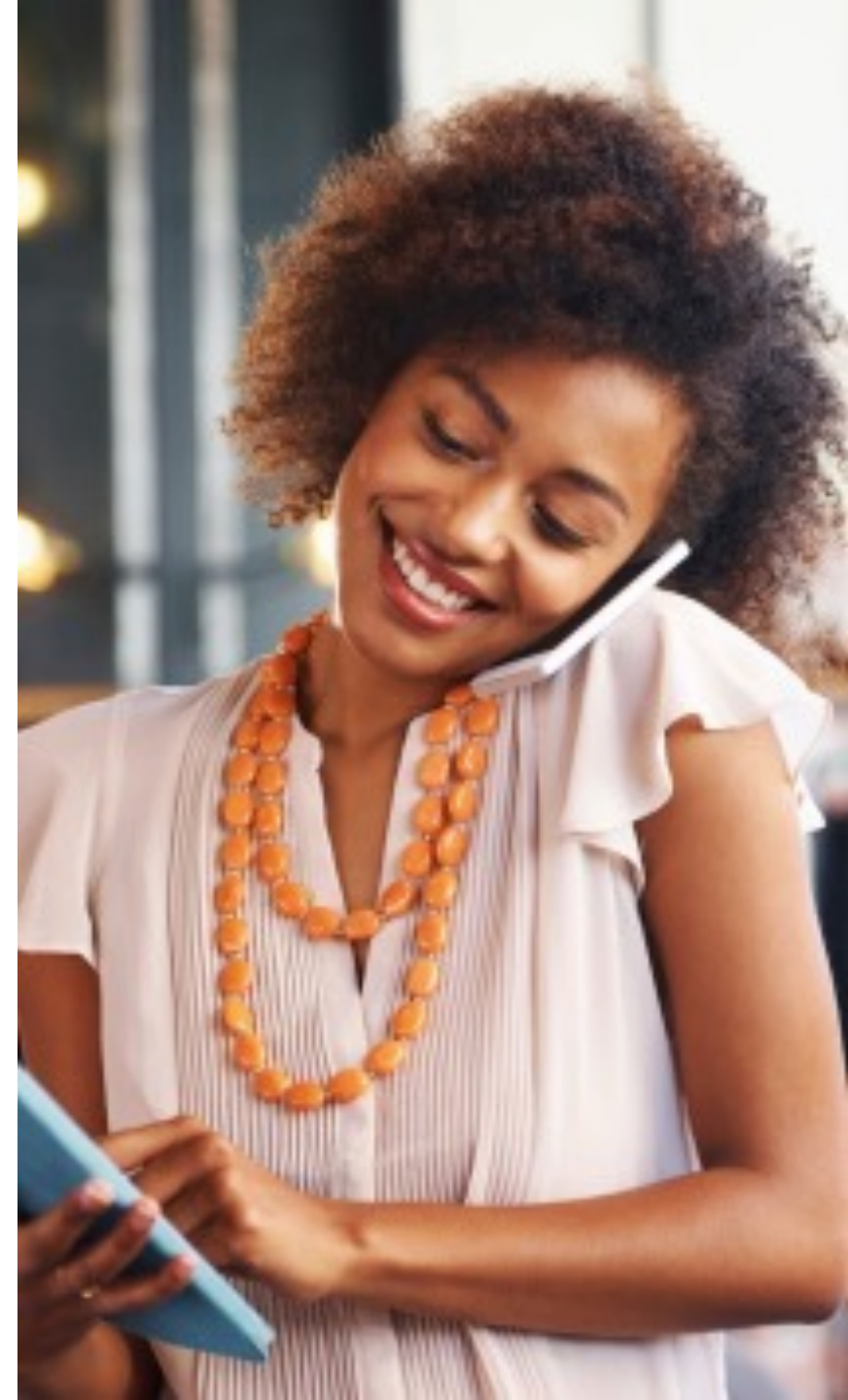
What to expect beyond?  
Embedded Analytics Developer  
Roadmap.

## 05

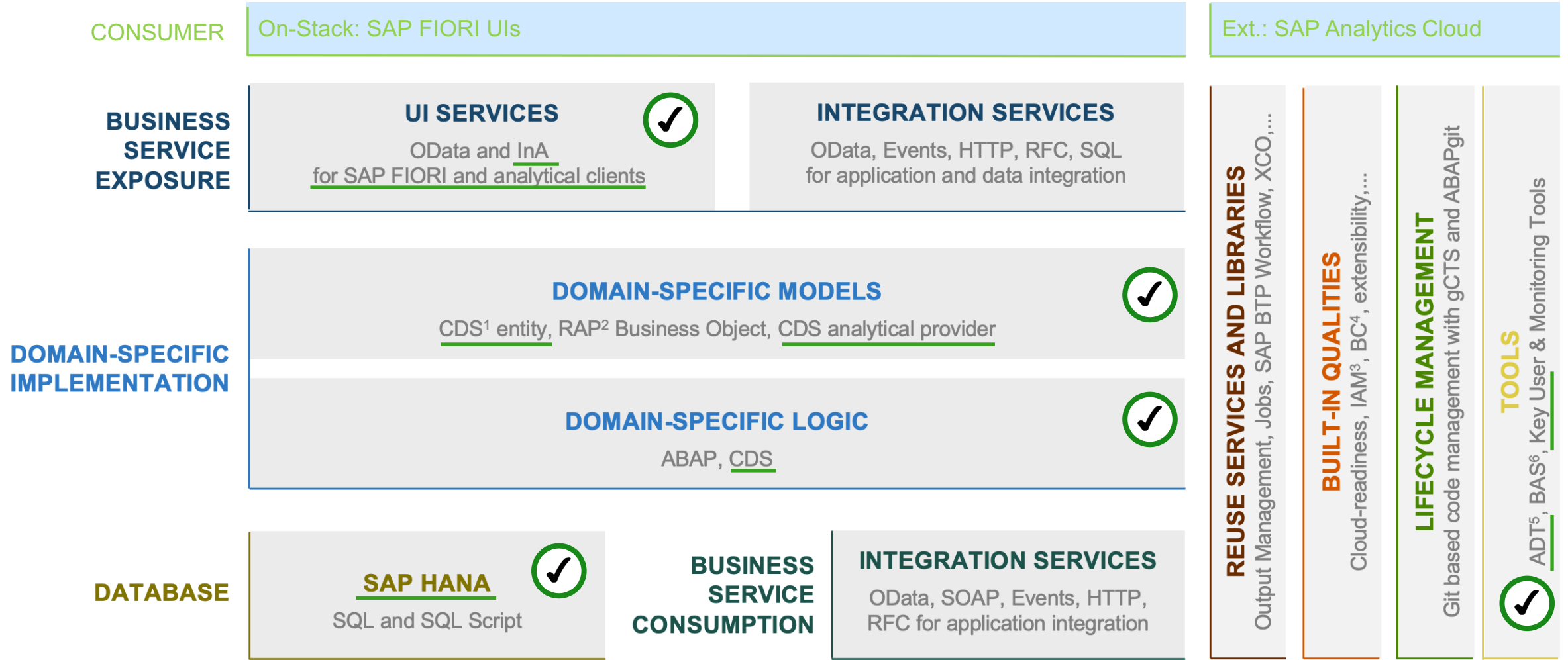
Where to learn more?  
Blogs, Documentation & Co.



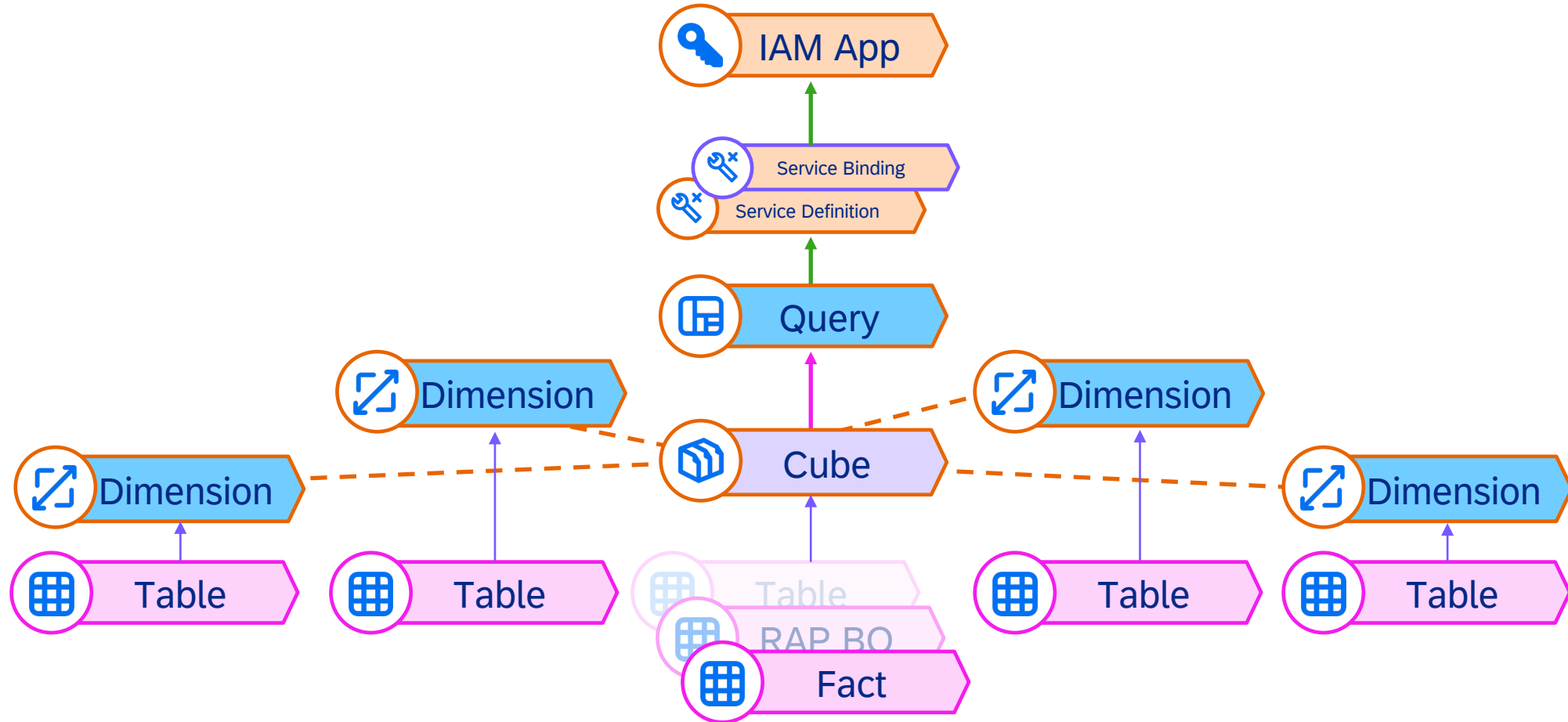
**Some of the product outlook presented here is a “Labs Preview” or is just in ideation.**



# Embedded Analytics belongs to ABAP Cloud!

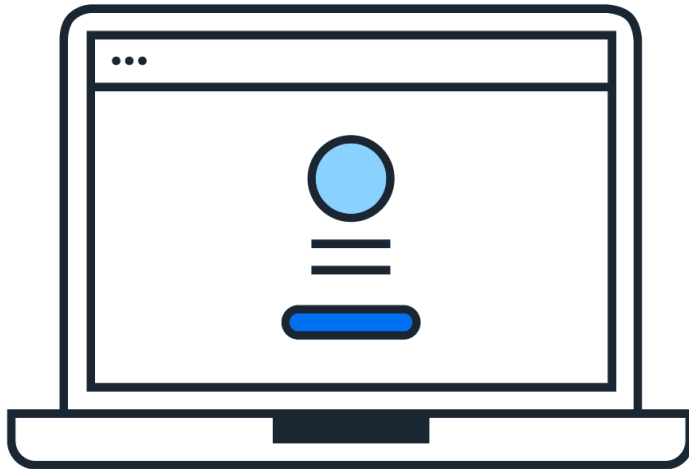


# Development Artefacts



# Analytical Data Model & Service Exposure

## Live Demo



## Analytical Query Preview

The screenshot displays an analytical query preview tool. On the left, a data table shows flight data with columns for Departure Airport, Plane Type, and Occupation Rate. The table contains data for airports FCO, FRA, JFK, NRT, and SFO, with various plane types and their corresponding occupation rates.

Departure Airport	Plane Type	Occupation Rate
FCO	747-400	65
	A319-100	66
	A380-800	68
FRA	747-400	64
	767-200	65
	A340-600	67
JFK	A380-800	67
	747-400	63
	767-200	65
NRT	A340-600	68
	A380-800	71
	A380-800	62
SFO	A340-600	59
	A380-800	67

The right side of the interface features a 'Builder' panel with 'Available Objects' and 'Rows' sections. The 'Rows' section lists 'Departure Airport' and 'Plane Type'. The 'Columns' section lists 'Occupation Rate'. The 'Measures' section includes options for 'Select All', 'Airfare', 'Max. Capacity Econ.', 'Occupation Rate', and 'Occupied Econ.'. The 'Dimensions' section lists 'Airline', 'Connection Number', 'Departure Airport', 'Destination Airport', and 'Flight Date'. The 'Measures' section also lists 'Occupation Rate'.

The bottom part of the screenshot shows a query editor with the following SQL code:

```
define view query ADD_FLIGHT_CUBE
as select from sflight
association [0..1] to ADD_CARRIER_DIM as _Airline on _Airline.AirlineId = $projection.AirlineId
association [0..1] to ADD_CONNECTION_DIM as _Connection on _Connection.AirlineId = $projection.AirlineId and _Connection.ConnectionId = $projection.ConnectionId

/* Dimensions */
@ObjectModel.foreignKey.association: '_Airline'
key sflight.carriid as AirlineId,
@ObjectModel.foreignKey.association: '_Connection'
key sflight.connid as ConnectionId,
key sflight.fdate as FlightDate,
sflight.plantype as PlaneType,
_Connection.AirportFrom as AirportFrom,
_Connection.AirportTo as AirportTo,

/* Measures */
@Semantics.amount.currencyCode: 'CurrencyCode'
sflight.price as Price,
sflight.currency as CurrencyCode,

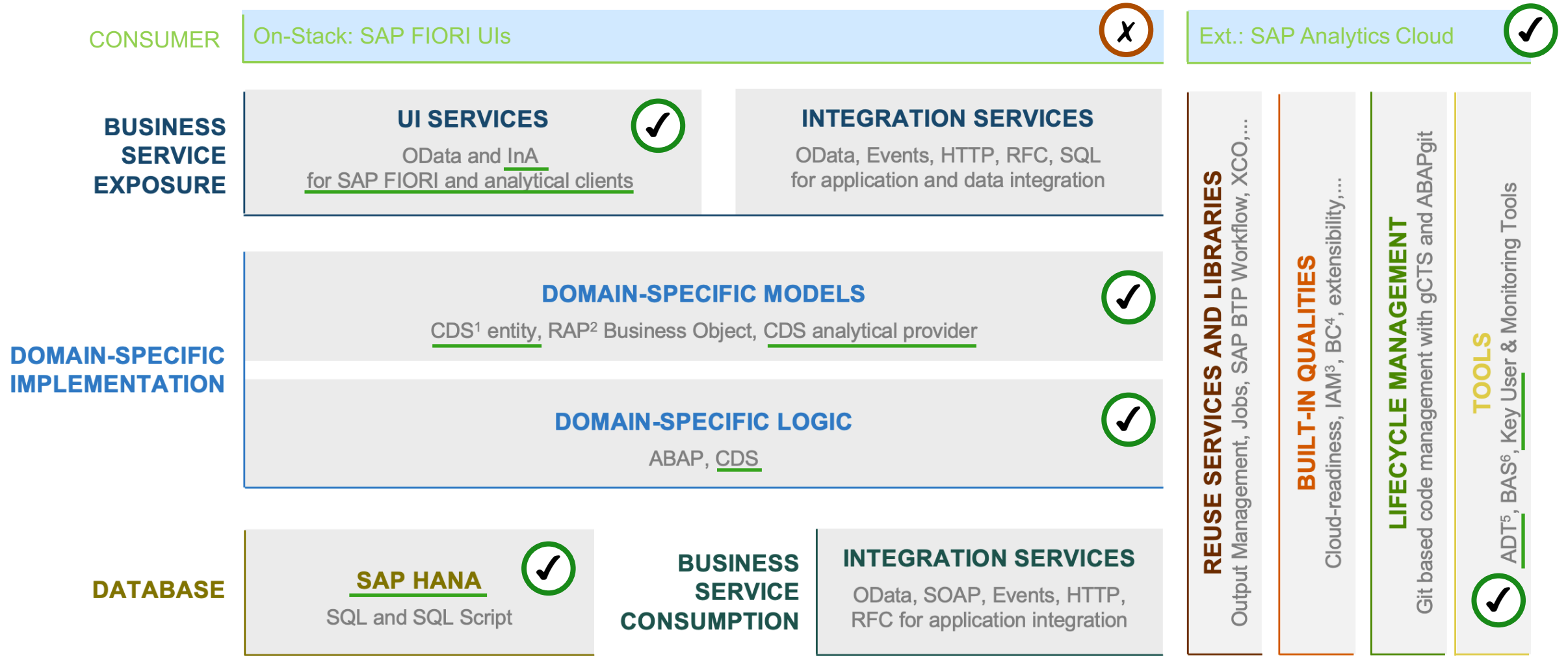
@Aggregation.default: #SUM
sflight.seatsmax as MaximumSeats,

@Aggregation.default: #SUM
sflight.seatocc as OccupiedSeats,

@Aggregation.default: #SUM
cast (1 as abap.int4) as TotalFlights,
```

## Analytical "Star Schema" & InA Service Exposure

# Embedded Analytics belongs to ABAP Cloud!



# Embedded Analytics belongs to ABAP Cloud!

CONSUMER

On-Stack: SAP FIORI UIs

Ext.: SAP Analytics Cloud

BUSINESS  
SERVICES  
EXPOSURE

DOMAIN-SPECIFIC  
IMPLEMENTATION

DATA

The screenshot displays the SAP Fiori Embedded Analytics interface for a story named 'RAP500\_0004'. The interface includes a top navigation bar with 'Story' and 'Data' tabs, and a menu with 'File', 'Insert', 'Tools', 'Data', 'Format', and 'Display'. Below the navigation, there are several data visualizations:

- Flight Price per Airline ID:** A horizontal bar chart showing prices for American Airlines Inc. (162,018.00), Alitalia Societa Aerea Italiana S.p.A. (41,735.00), Deutsche Lufthansa AG (18,738.00), Singapore Airlines Limited (41,238.00), and United Airlines, Inc. (102,599.00).
- Total of Bookings per Airline ID:** A donut chart showing the distribution of bookings: American Airlines Inc. (53.47%), Alitalia Societa Aerea Italiana S.p.A. (41.09%), Deutsche Lufthansa AG (2.48%), Singapore Airlines Limited (1.73%), and United Airlines, Inc. (1.24%).
- Flight Price per Agency ID:** A line chart showing flight prices across various agencies like Sunbrite Travel, Happy Holiday, Your Choice, etc., with values ranging from 4,114.00 to 37,208.00.
- Flight Price per Loc. Changed By:** A line chart showing flight prices across different locations like Arona (France), Bari, Bergamo, etc., with values ranging from 543.00 to 52,703.00.
- Table:** A data table with columns: Travel ID, Booking Number, Booking Date, Customer ID, Airline ID, Flight Number, Flight Date, and Currency Code. It contains 4 rows of booking data.

On the right side, there is a 'Builder' panel for 'RAP500\_42' with a 'Chart Structure' section. The 'Measures' section is highlighted with a red box and contains:

- Left Y-Axis: Flight Price
- Right Y-Axis: (empty)
- Dimensions: Loc. Changed By

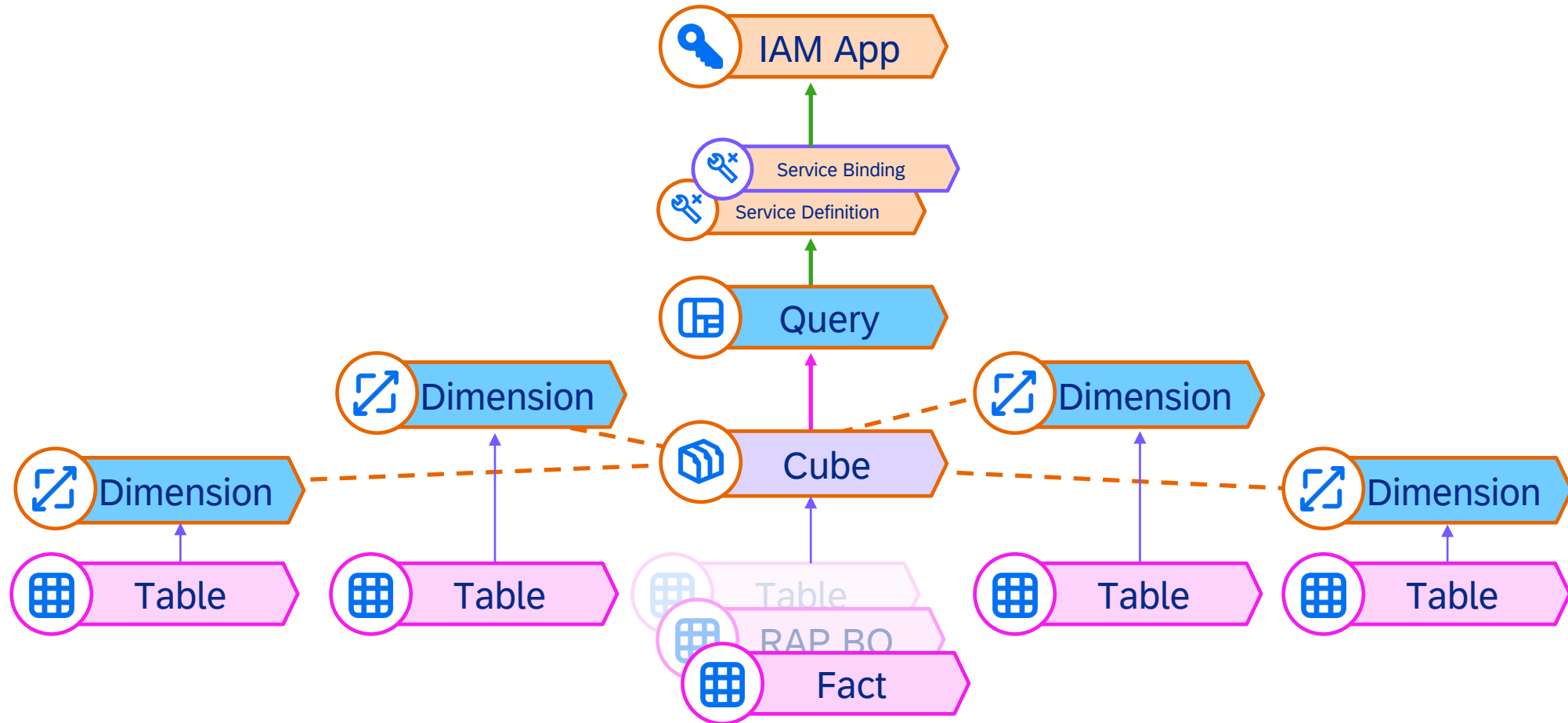
Below the 'Measures' and 'Dimensions' sections, there are options for 'Color' (Measures Member: Flight Price) and 'Filters'.

LIFECYCLE MANAGEMENT  
Git based code management with gCTS and ABAPgit

TOOLS  
ADT<sup>5</sup>, BAS<sup>6</sup>, Key User & Monitoring Tools

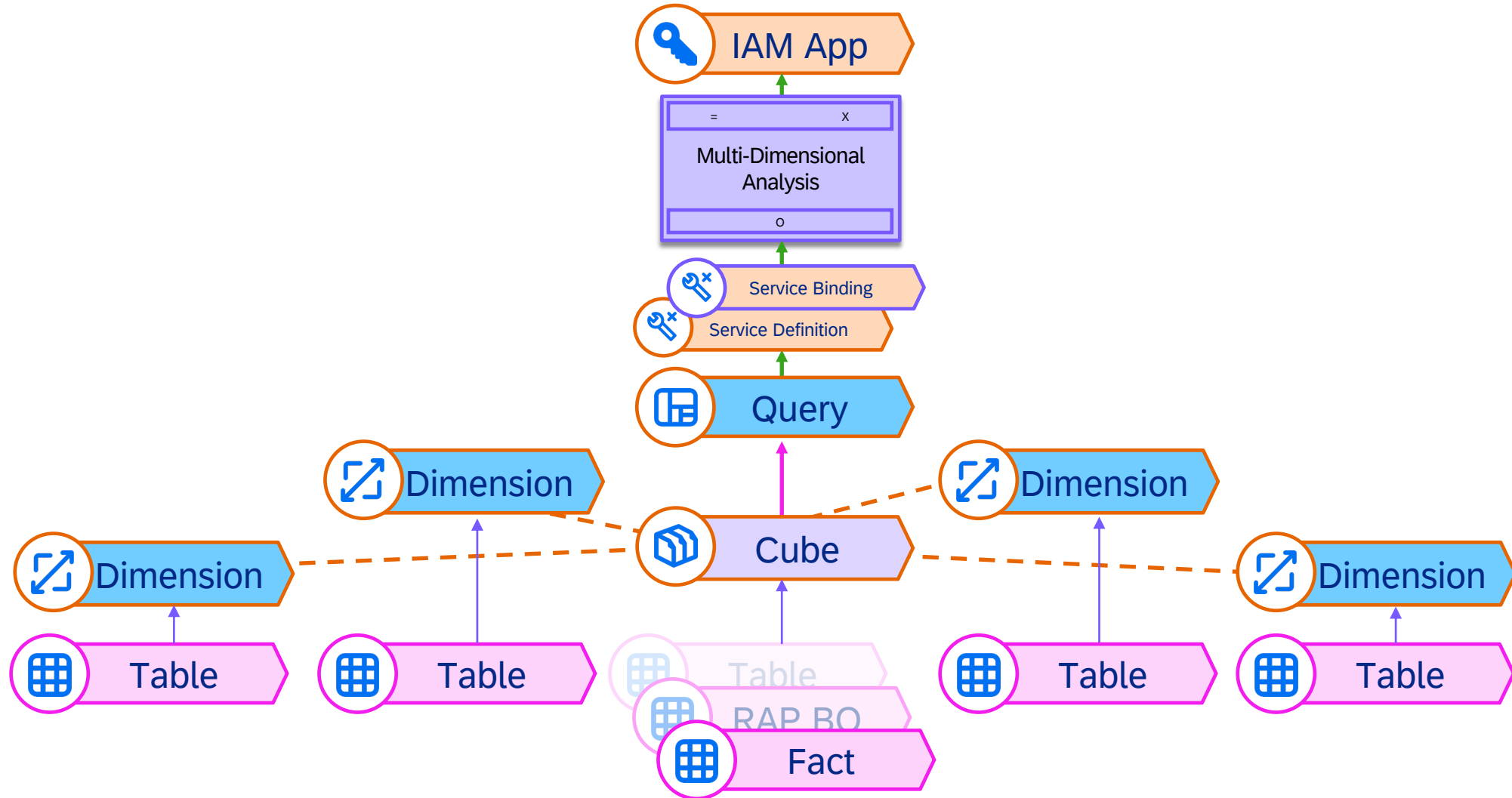


# Recap – Development Artefacts

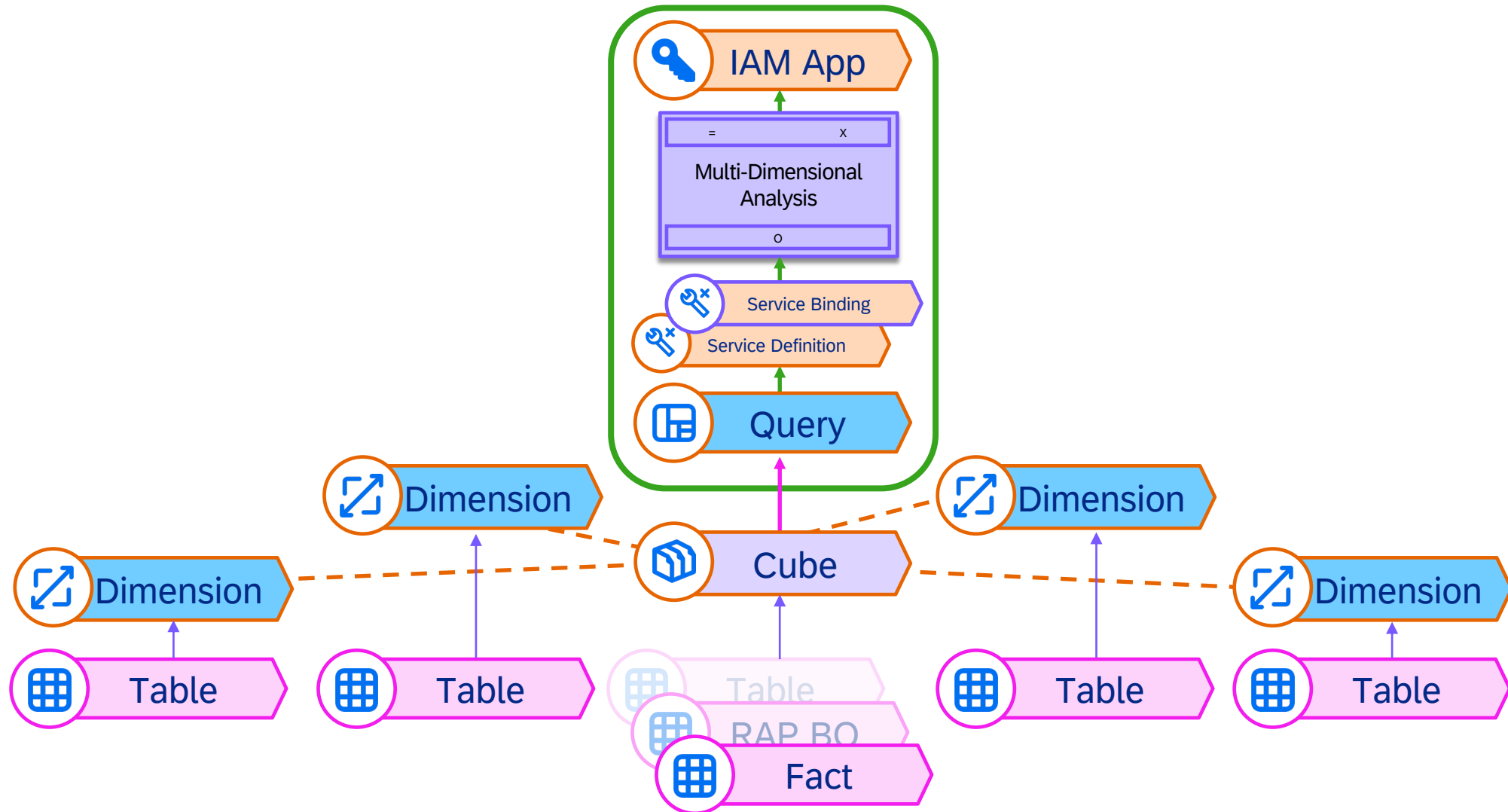




# Missing Link – The Fiori App for “Multi-Dimensional Analysis”

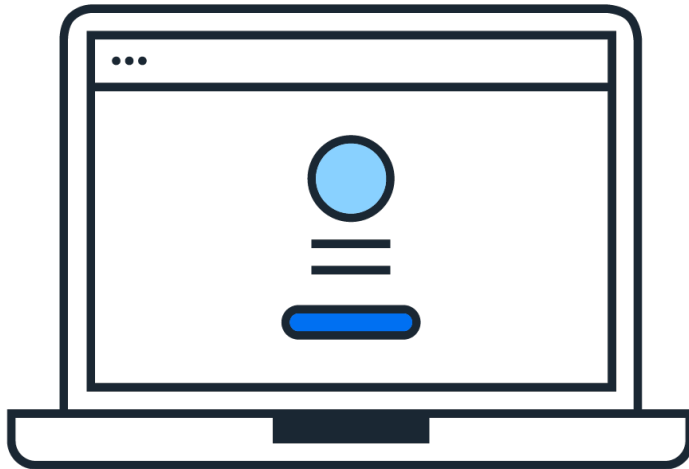


# Potential for Generator Wizards – Jump-Start Wizard

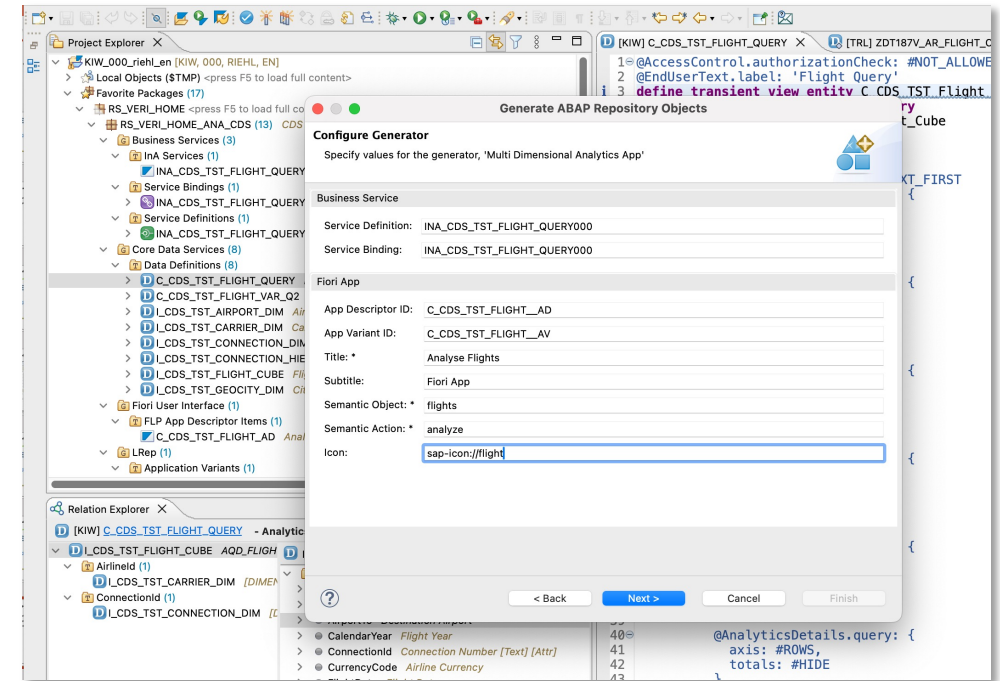


# Fiori App Creation & Preview

Live “Labs Preview” Demo



## Multi-Dimensional Analysis App Creation Wizard



# Future Fiori Integration for Embedded Analytics \*

- The Multi-Dimensional Analysis App (and **Charts** for it)
- Generation of Analytical Artefacts
  - Generate analytical queries & Multi-Dimensional End-User UIs based on an analytical cube view
  - Generate an analytical data model based on a transactional BO (AI supported)
  - Generate “Review Booklets” or Hierarchies
- FIORI Elements Support for analytical app Development
  - Analytical Floorplan
  - Analytical Building Blocks
- Additional Fiori UIs & Controls (e.g., Smart Business, ...)
- Combination of Transactional & Analytical Data in one App / UI

\* No roadmap. Product outlook for informational purposes. Not binding or guaranteed.

# What can you do next?

- **Call to Action!**

- If you haven't visited, watch the recordings of ...
  - the Keynote "ABAP Cloud in Action" by Volker Drees
  - "Working with Code Generators" by André Fischer
  - the "Core Data Services Deep Dive" by Andrea Schlotthauer & Konrad Gaerdes
- Do the Embedded Analytics [Hands-On on GitHub](#) in the Steampunk Trial System
  - Use your Trial Project to Explore Further Possibilities (e.g. Hierarchies or another Cube)

- **Continue Reading**

- [Analytical Data Modeling & Live Data Connection to SAP Analytics Cloud](#) (SAP Help)
- [Develop and Consume Queries on SAP Analytics Cloud](#) (Tutorial)
- [Analytical Data Modeling with ABAP Cloud I \(Concepts\)](#) (Blog Post)
- [Developing for Analytics with the SAP BTP ABAP Environment](#) (Blog Post)
- [CDS Analytical Projection Views – the new Analytical Query Model](#) (Blog Post)

# Analytical Applications with ABAP Cloud

## Questions & Answers



## Multi-Dimensional Analysis App Creation Wizard

```
1 @AccessControl.authorizationCheck: #NOT_REQUIRED
2 @EndUserText.label: 'ADD_FLIGHT_CUBE'
3 @Metadata.ignorePropagatedAnnotations: true
4 @Analytics.dataCategory: #CUBE
5 @Analytics.internalName: #LOCAL
6
7 define view entity ADD_FLIGHT_CUBE
8 as select from sflight
9 association [0..1] to ADD_CARRIER_DIM as _Airline
10 association [0..1] to ADD_CONNECTION_DIM as _Connection
11
12
13
14 /* Dimensions */
15 key sflight.carid as AirlineId,
16 @ObjectModel.foreignKey.association: '_Airline'
17 key sflight.connid as ConnectionID,
18 @ObjectModel.foreignKey.association: '_Connection'
19 key sflight.fdate as FlightDate,
20 sflight.planetype as PlaneType,
21 _Connection.AirportFrom as AirportFrom,
22 _Connection.AirportTo as AirportTo,
23
24 /* Measures */
25 @Semantics.amount.currencyCode: 'CurrencyCode'
26 sflight.price as Price,
27 sflight.currency as CurrencyCode,
28
29 @Aggregation.default: #SUM
30 sflight.seatsmax as MaximumSeats,
31
32 @Aggregation.default: #SUM
33 sflight.seatsocc as OccupiedSeats,
34
35 @Aggregation.default: #SUM
36 cast (1 as abap.int4) as TotalFlights,
```

## Analytical Query Preview

Departure Airport	Plane Type	Occupation Rate
FCO	747-400	65
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	767-200	65
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NRT	A380-800	71
SFO	A340-600	59
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....	.....	..

## Analytical “Star Schema” Data Model & InA Service Exposure

## Contact Information

# Thank you.

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