

ABAP on HANA - Advanced

Manjunath Baburao
April 23, 2015

Public

Disclaimer

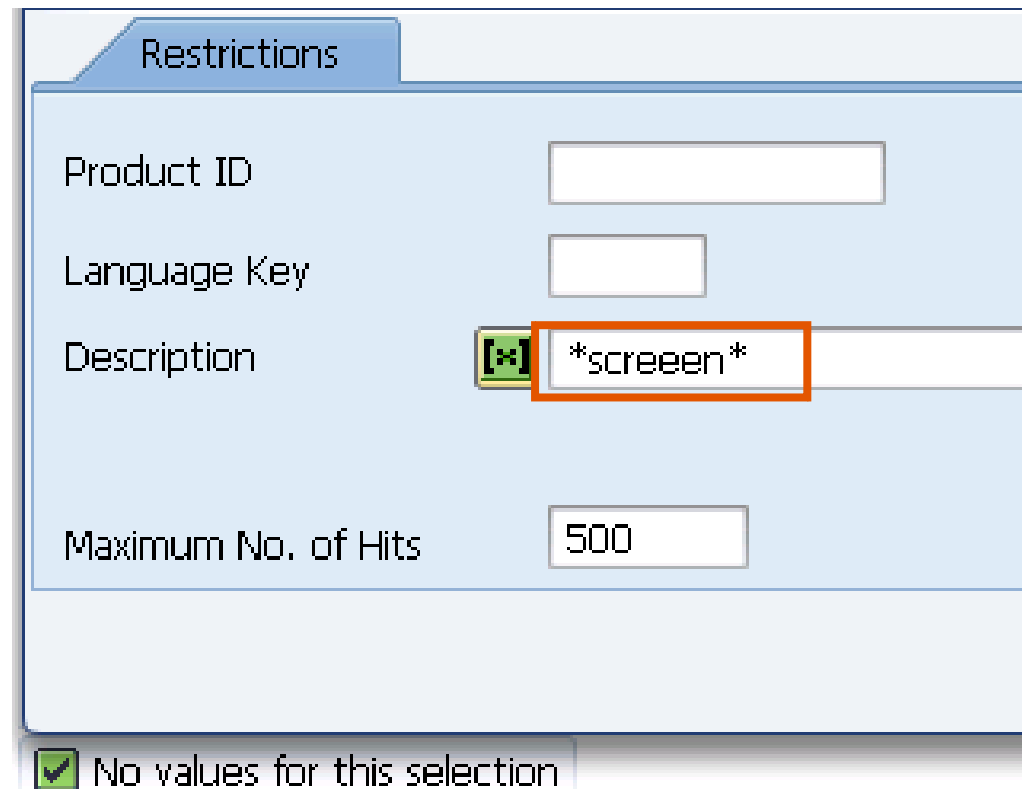
This presentation outlines our general product direction and should not be relied on in making a purchase decision. This presentation is not subject to your license agreement or any other agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or to develop or release any functionality mentioned in this presentation. This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP intentionally or grossly negligent.

HANA Text Search

Typical Search Issues

Search helps currently

- Require correct spelling
- Require the search term to be entered into the correct search help field



The screenshot shows a search help dialog box with a tab labeled "Restrictions". It contains four input fields: "Product ID", "Language Key", "Description", and "Maximum No. of Hits". The "Description" field contains the text "*screen*" and is highlighted with an orange border. A green checkmark icon is visible to the left of the "Description" field. At the bottom of the dialog, there is a checkbox labeled "No values for this selection" which is checked.

Field	Value
Product ID	
Language Key	
Description	*screen*
Maximum No. of Hits	500

☒ No values for this selection

Full Text Search in SAP HANA – What Can it Do for You?

Integrated enterprise applications delivered with SAP Business Suite software enable enterprises like yours to execute and optimize business and IT strategies.

SAP HANA SQL: Text Search Query

```
SELECT * FROM "MYTABLE" WHERE CONTAINS ("F1", 'SAP', EXACT)
```

Column Table
Or View

Column
Specification

Type of Search

Search
String

Search String options

Full-text Indexing

A full-text index is defined on a table column

```
CREATE FULLTEXT INDEX [INDEX NAME] ON [SCHEMA] . [TABLE] ( [COLUMN] )
```

Multi-column search

```
SELECT * FROM DOCUMENTS WHERE CONTAINS ( ("TITLE", "ABSTRACT"), 'business' )
```

```
SELECT * FROM DOCUMENTS WHERE CONTAINS ( *, 'business software' )
```


Search Types : Exact Search and Linguistic Search

```
SELECT * FROM "MESSAGES"  
WHERE CONTAINS ("MESSAGE", 'businesses', EXACT)
```

ID	MESSAGE
2.541	The best run <u>businesses</u> run SAP

```
SELECT * FROM "MESSAGES"  
WHERE CONTAINS ("MESSAGE", 'go', LINGUISTIC)
```

ID	MESSAGE
3	I <u>went</u> to London

Search Type : Fuzzy Search

```
SELECT "PRODUCT_ID", "NAME", "DESCRIPTION" FROM "VPRODUCTS" WHERE CONTAINS("DESCRIPTION",  
    'screen', FUZZY(0.8) )
```

PRODUCT_ID	NAME	DESCRIPTION
IT-1113	Screen clean	10 separately packed screen clean cloths
IT-2000	7" Widescreen Portable DVD Player w MP3	7" LCD Screen, storage battery holds up to 6 hours!
IT-2001	10" Portable DVD player	10" LCD Screen, storage battery holds up to 8 hours
IT-2002	Portable DVD Player with 9" LCD Monitor	9" LCD Screen, storage holds up to 8 hours, 2 speakers included
IT-1023	Easy Power	High resolution 320x480 transfective color screen - 32MB of memor
IT-1020	Easy Hand III	High resolution 320x320 transfective color screen - 16MB of memor
IT-1021	Easy Hand V	High resolution 320x320 transfective color screen - 32MB of memor
IT-1022	Easy Hand VII	High resolution 320x480 transfective color screen - 16MB of memor
IT-9997	e-Book Reader ReadMe	6-Inch E Ink Screen, Access To e-book Store, Adjustable Font Style
IT-9999	Maxi Tablet	10.1-inch Multitouch HD Screen (1280 x 800), 16GB Internal Memor

Term mapping now possible

Use Native SQL and ABAP Database Connectivity API

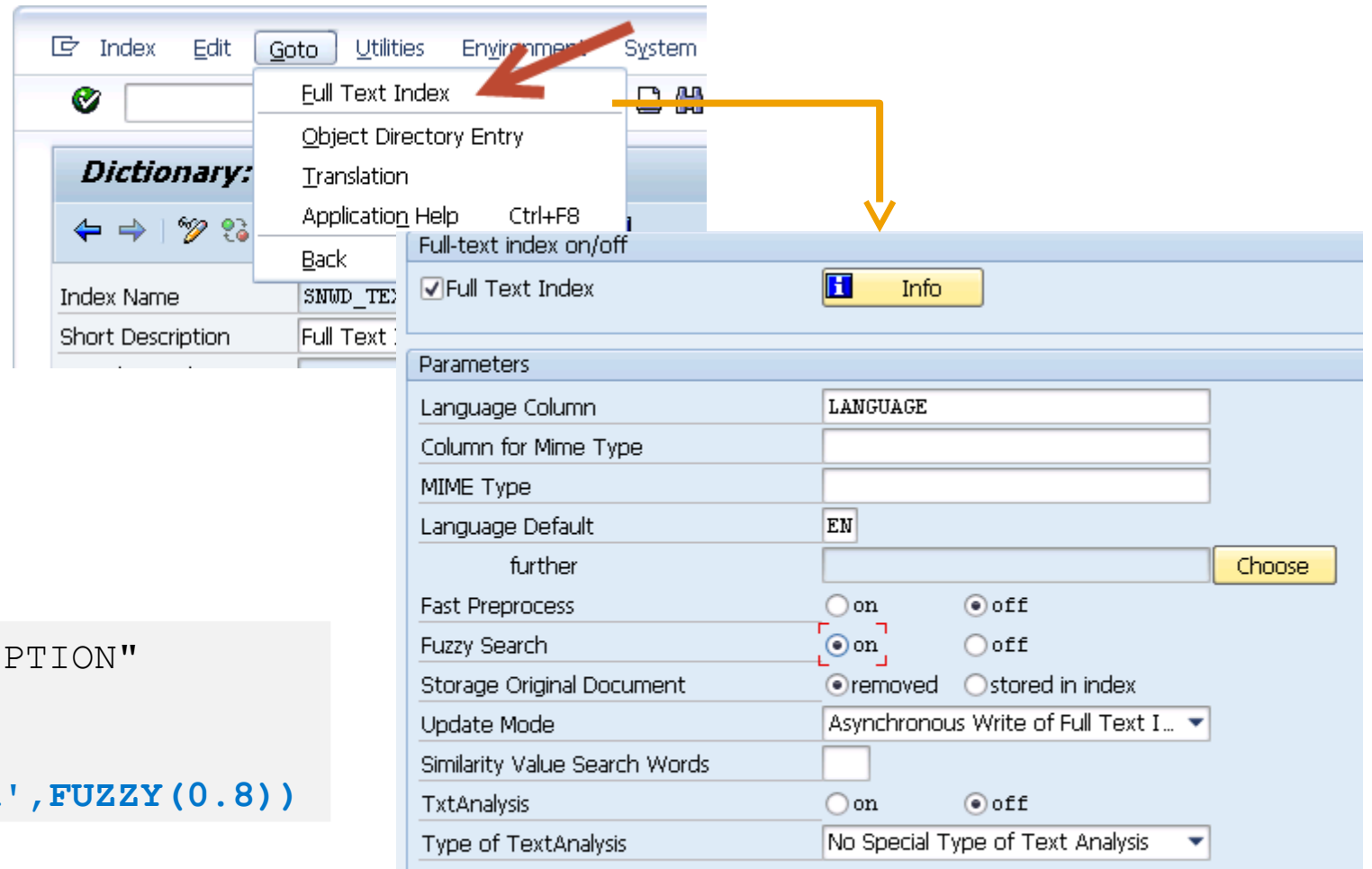
Fast text search requires full-text indexes

- Can be created using ABAP Dictionary

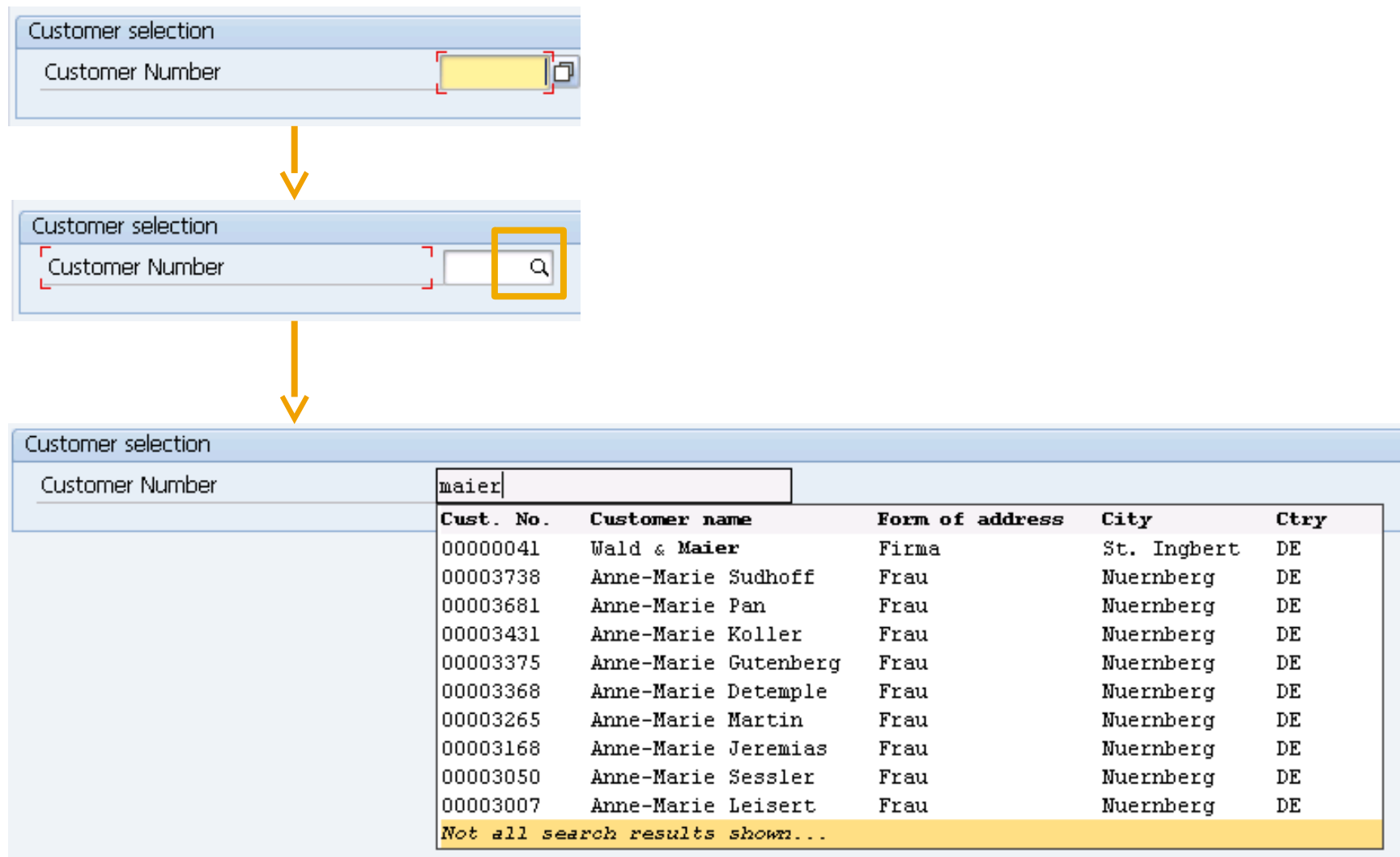
Text search query syntax is SAP HANA-specific

- No support in Open SQL \Rightarrow Use native SQL again

```
SELECT "PRODUCT_ID", "NAME", "DESCRIPTION"  
FROM "VPRODUCTS"  
WHERE CONTAINS (  
    "DESCRIPTION", 'screen', FUZZY(0.8) )
```



Search Helps with Type-Ahead



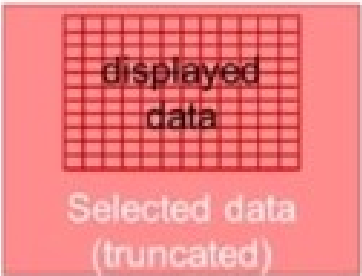
SAP ALV IDA

ABAP on HANA – Paradigm shift

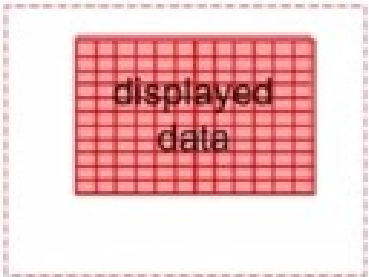
Classical ALV

Calculations &
Transformations

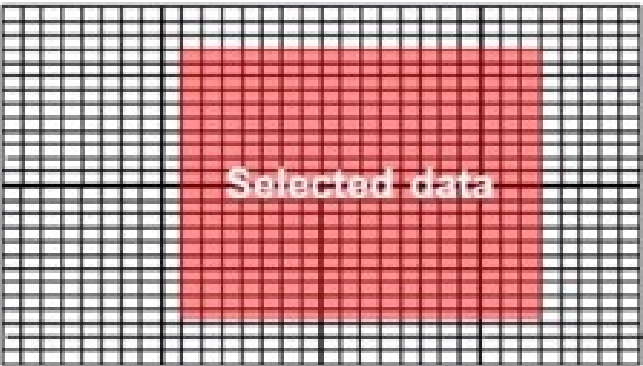
AS ABAP



ALV on HANA



SAP HANA



Calculations &
Transformations

SAP ABAP List Viewer With Integrated Data Access

For Short: SALV IDA

Basic Principles

- Only retrieve from the database data which is to be displayed on the screen
- Use database services where possible - ALV features pushed down to the database

Consumption

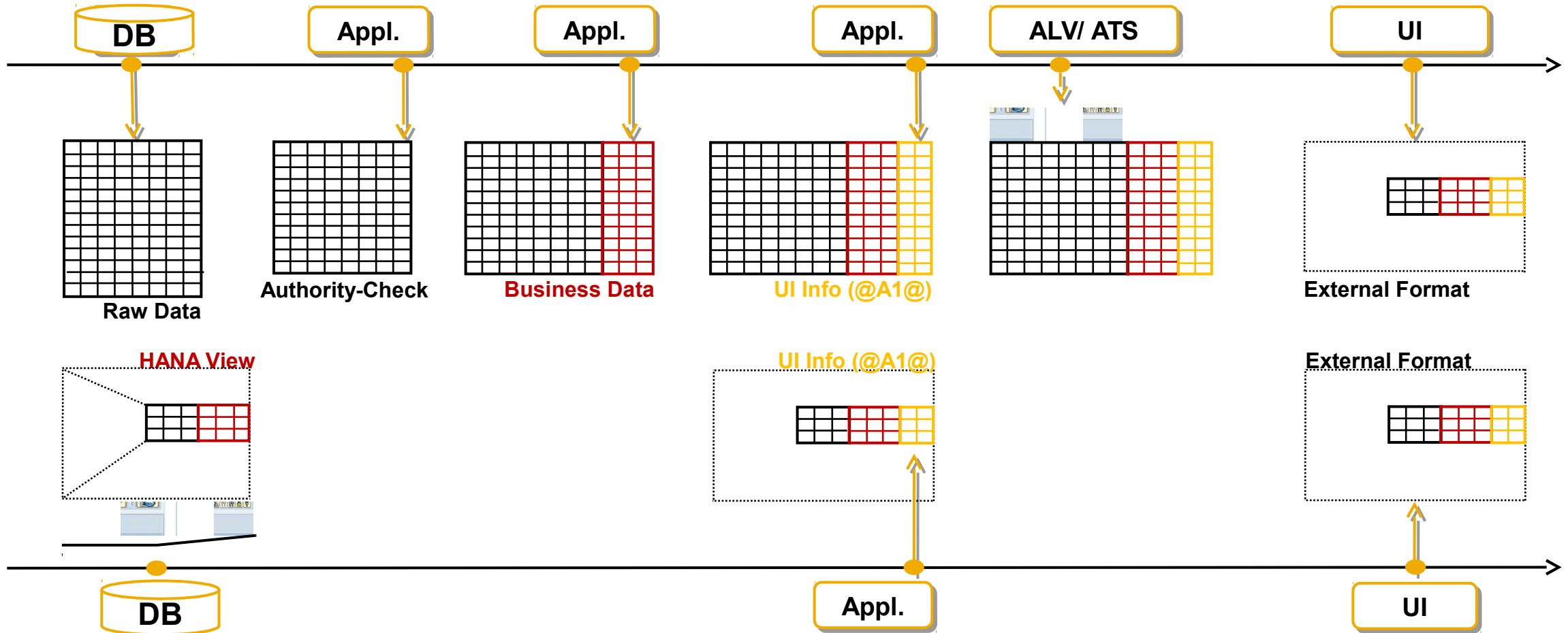
- Data described declaratively instead of passing big internal tables
- Usable in SAP GUI and Floorplan Manager

Experience

- Retrieval of results is much faster
- Better performance and reduced memory consumption
- Improved user experience

SAP GUI ALV / FPM List – Data Flow

Classic ALV/FPM vs. ALV/FPM@HANA



- Application Logic / View Building
- Projection / Selection
- Paging, Sorting, Filtering, Authority-Check

Demo



New type of applications

by the power of HANA

Example App : Customer Segment Prediction

User Story

Role

- The marketing manager of one supermarket

Abstract Story

The marketing manager wants to predict segmentation of new customers for a supermarket. First he uses Kmeans algorithm to discover the customer segmentation based on the existing customers. The output can be then used as the training data for Decision Tree algorithm to predict new customers' segmentation.

Goal

- The marketing manager can do the customer segmentation for the existing customers based on the historical dataset.
- Once a new customer comes, the marketing manager can predict which segmentation the customer would belong to.

Example App : Customer Segment Prediction

Simplicity of SAP Fiori

+

Power of HANA

+

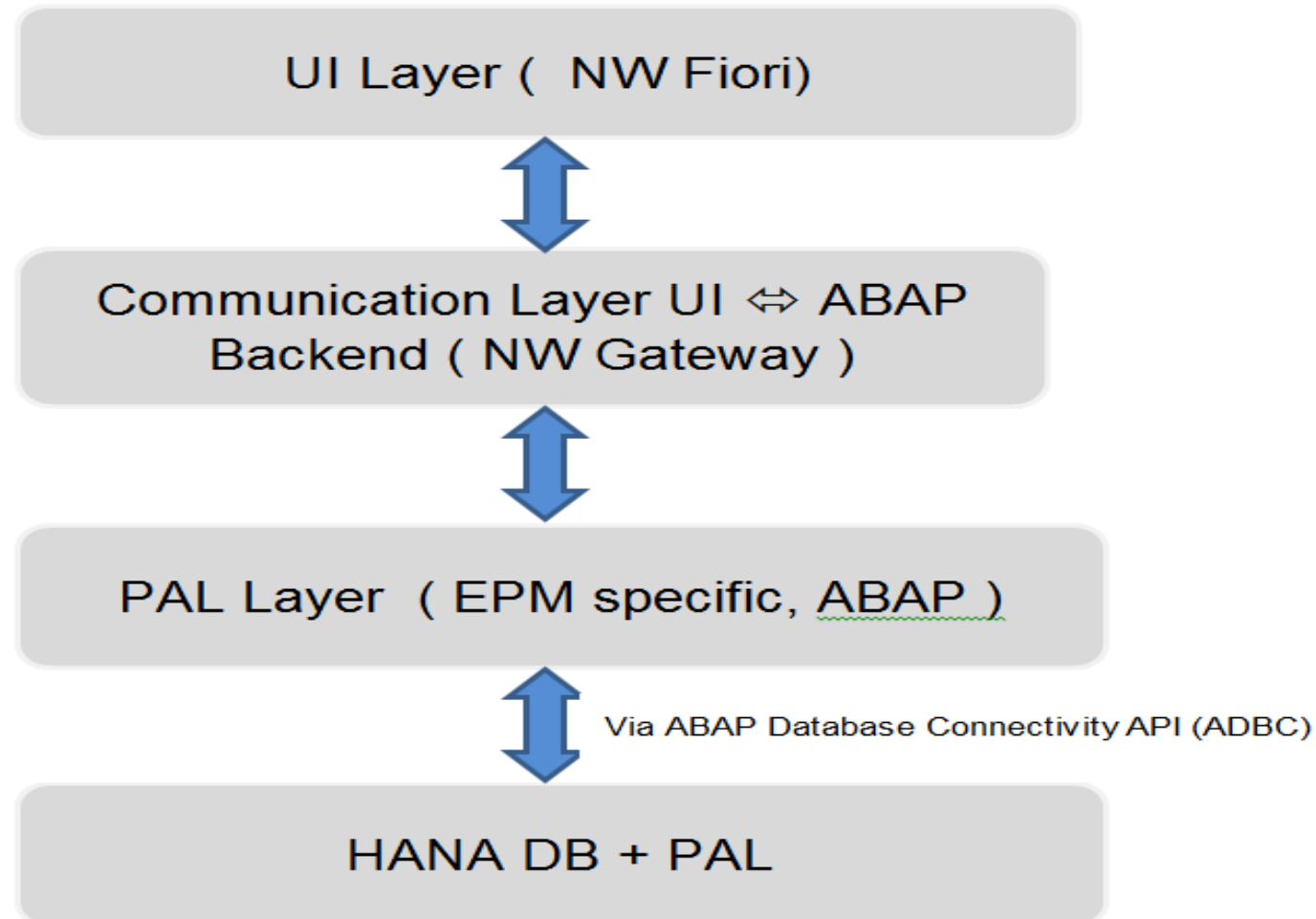
Functionality of Business Suite

=

Unmatched Value to the Customer

Example App : Customer Segment Prediction – How

Consume PAL in ABAP - Scenario



Demo



NW EPM HANA Demo Applications

Customer Segment
Prediction
Demo



EPM PAL Demo



Thank you

Contact information:

Manjunath Baburao
manjunath.baburao@sap.com