



# ABAP-based Extensibility Options

## Overview and Use Cases

Dr. Safa Golrokh Bahoosh, Product Management ABAP Platform, SAP SE

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# Extensibility Options Today

User Interface Layer



Application Layer



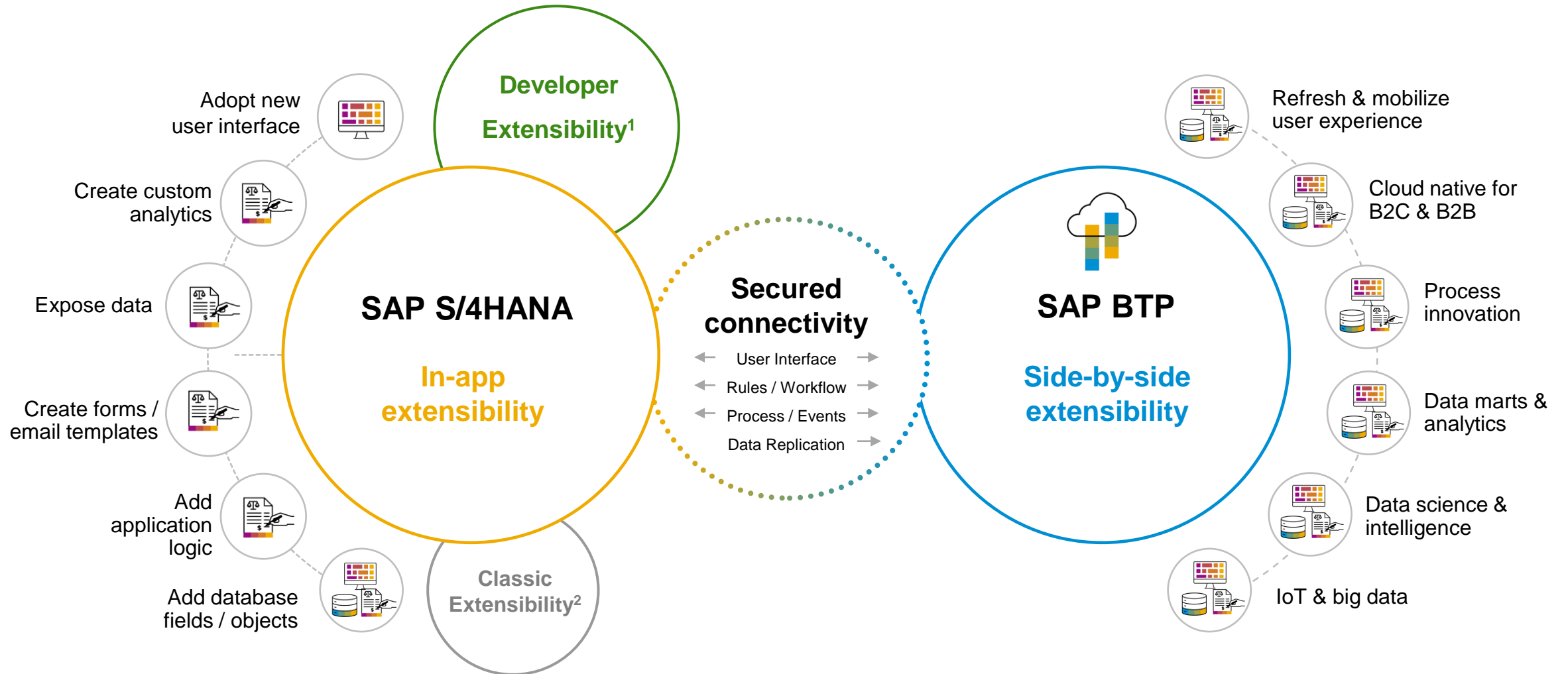
Database Layer



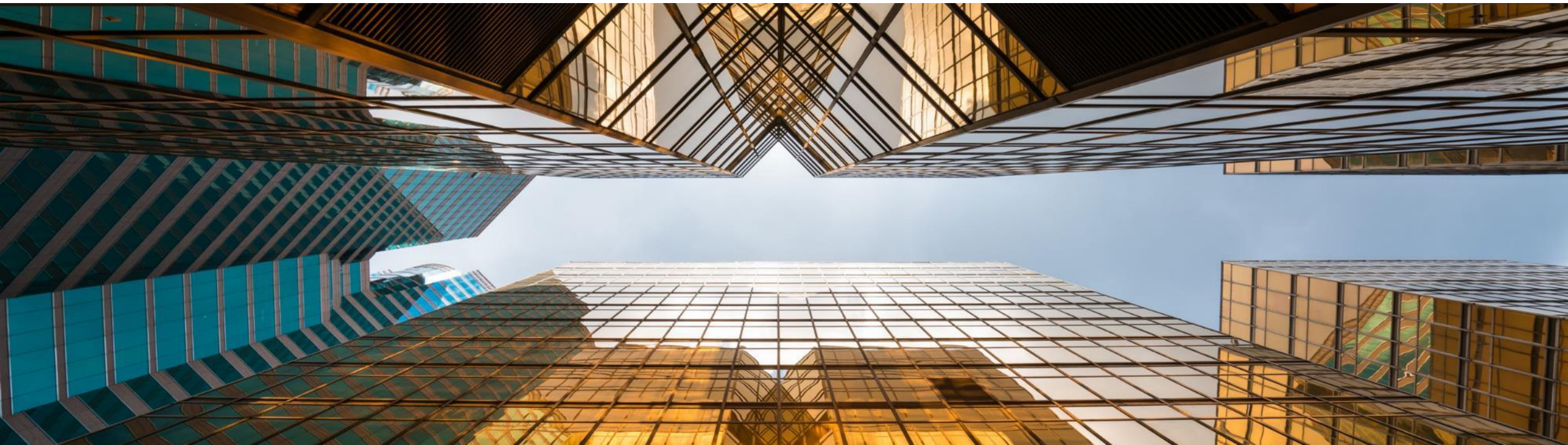
In-App Extensions



Cloud Extensions



# Side-by-side extensibility



# Value of SAP BTP ABAP Environment

## ► Cloud ERP

Transform your existing ABAP assets to the cloud

## ► Innovation Platform

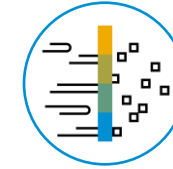
Develop and run innovative ABAP apps on a PaaS in the Cloud

- use always the newest version of the ABAP Platform
- use always the newest version of SAP HANA
- use always the newest SAP BTP services
- Delegate the operation of the ABAP PaaS to SAP

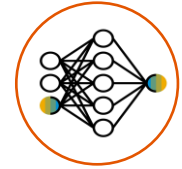
## ► Clean Core

Decouple from your core business system

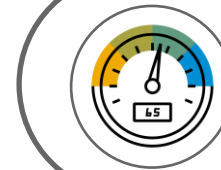
- Delegate cloud integration scenarios to a cloud hub
- Reduce upgrade costs with decoupled cloud extensions
- Delegate non ERP user roles like consumer to a cloud solution



TRANSFORMATION  
TO CLOUD



MARKET  
OPPORTUNITIES  
FOR PARTNERS

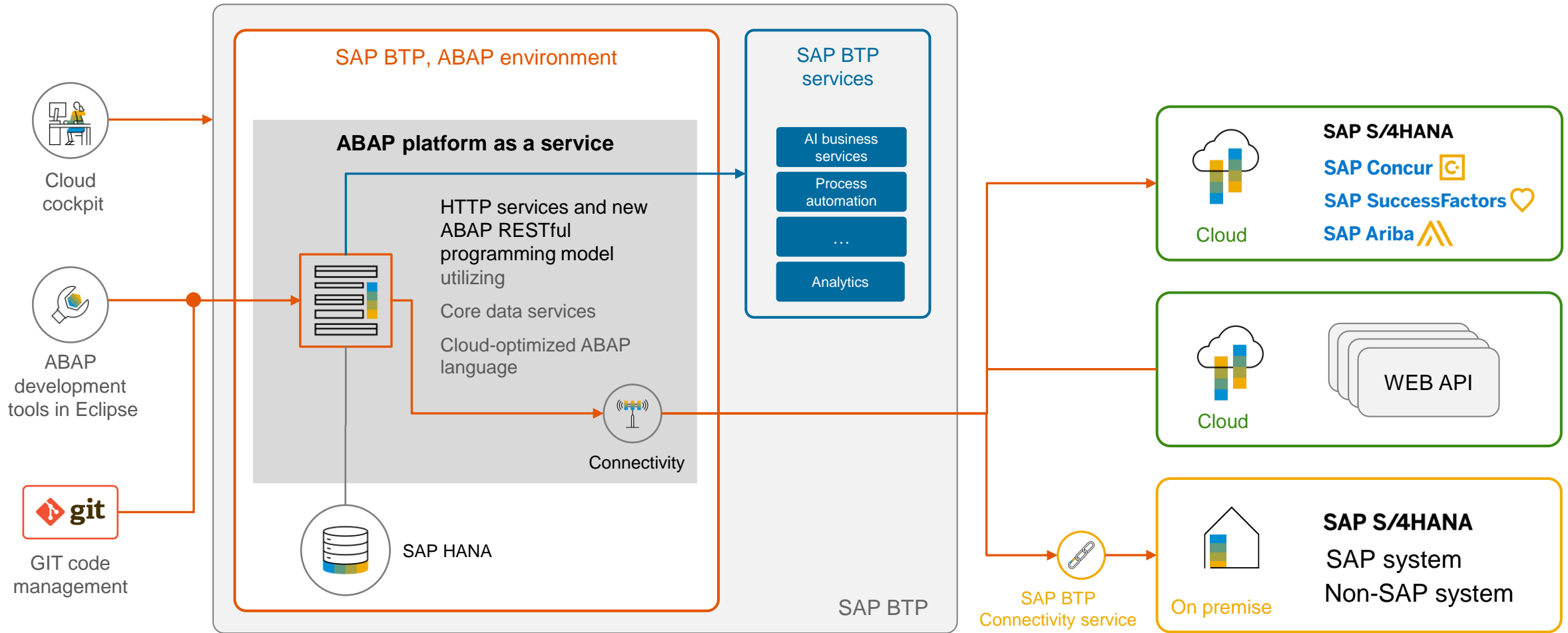


AGILE INNOVATION ON NEWEST  
TECHNOLOGY POWERED BY  
SAP HANA



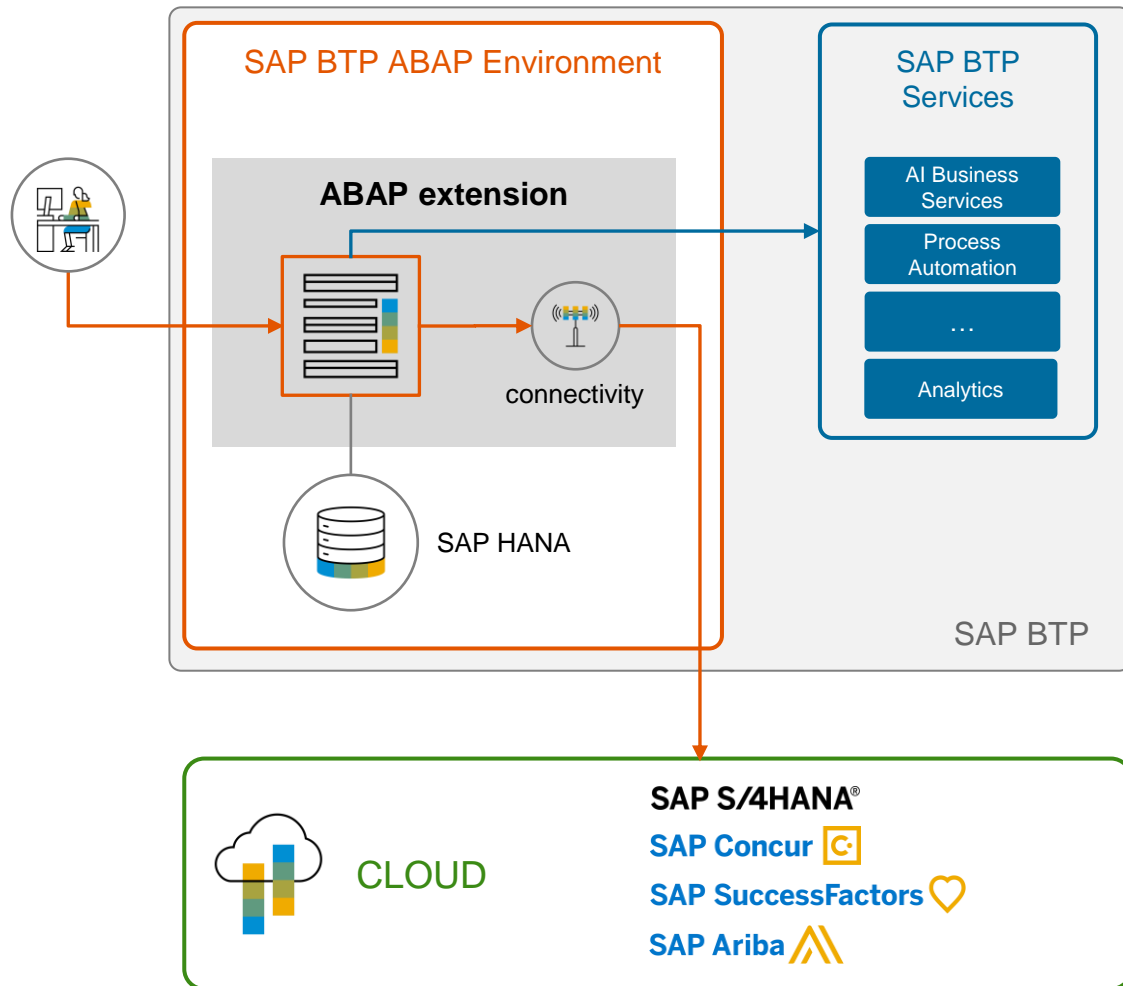
DELEGATE INFRASTRUCTURE  
AND  
SYSTEM OPERATIONS

# Vital parts of SAP BTP, ABAP environment ('Steampunk')



# Extension scenario 1: Cloud ERP

Extend SAP S/4HANA Cloud or other SAP cloud offerings with cloud extensions

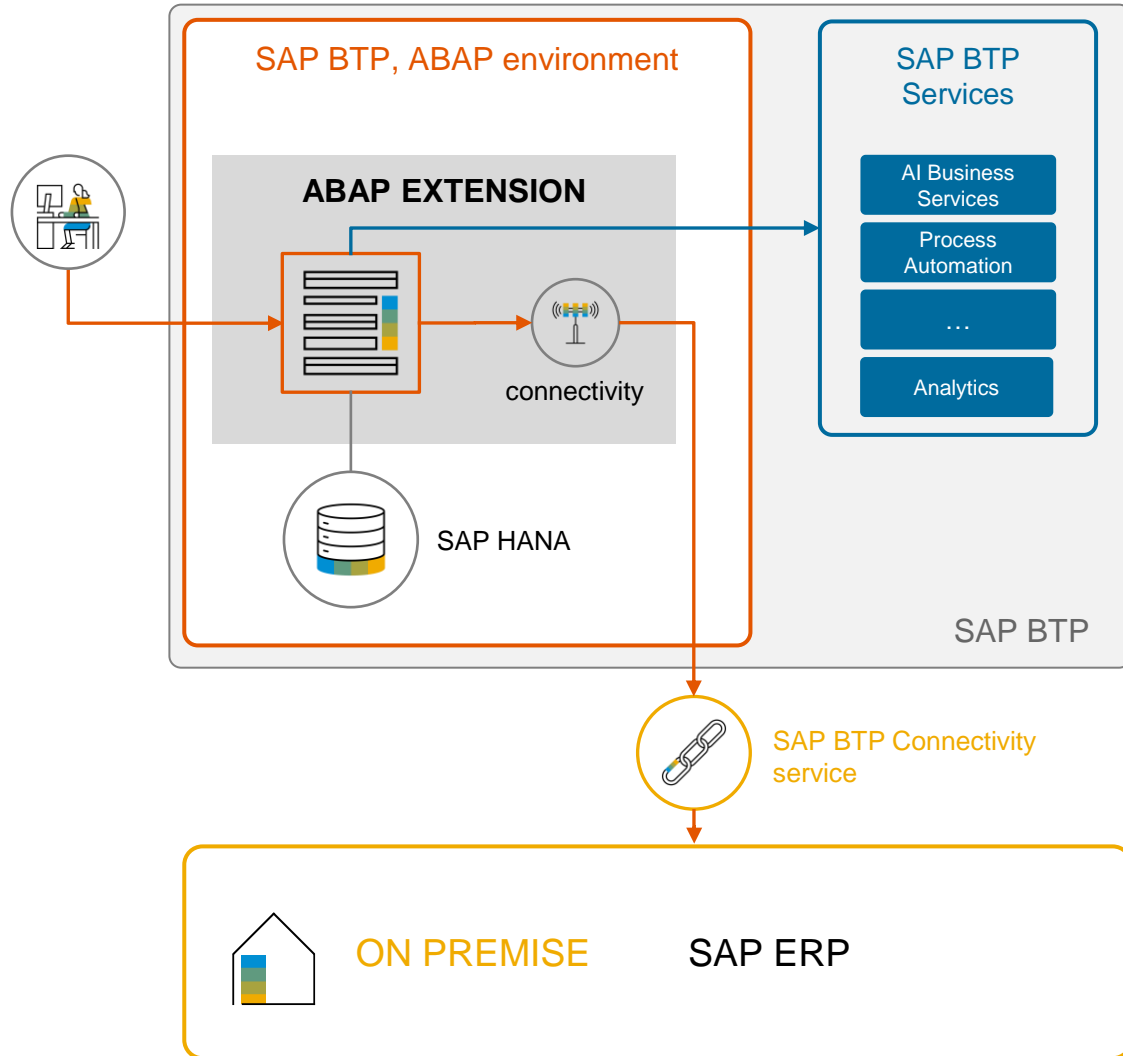


Use SAP BTP, ABAP environment, to extend SAP S/4HANA Cloud or other cloud solutions from SAP.

- ▶ Cloud solutions from SAP such as SAP S/4HANA Cloud provide in-app extensibility to extend SAP applications and processes. But there is no support for classic custom ABAP development on top of SAP S/4HANA Cloud.
- ▶ SAP BTP is the foundation to develop and run custom cloud extensions. The ABAP environment shall be used for ABAP-based cloud extensions.

# Extension scenario 2: Innovation Platform

Develop and run innovative ABAP apps on a PaaS in the Cloud

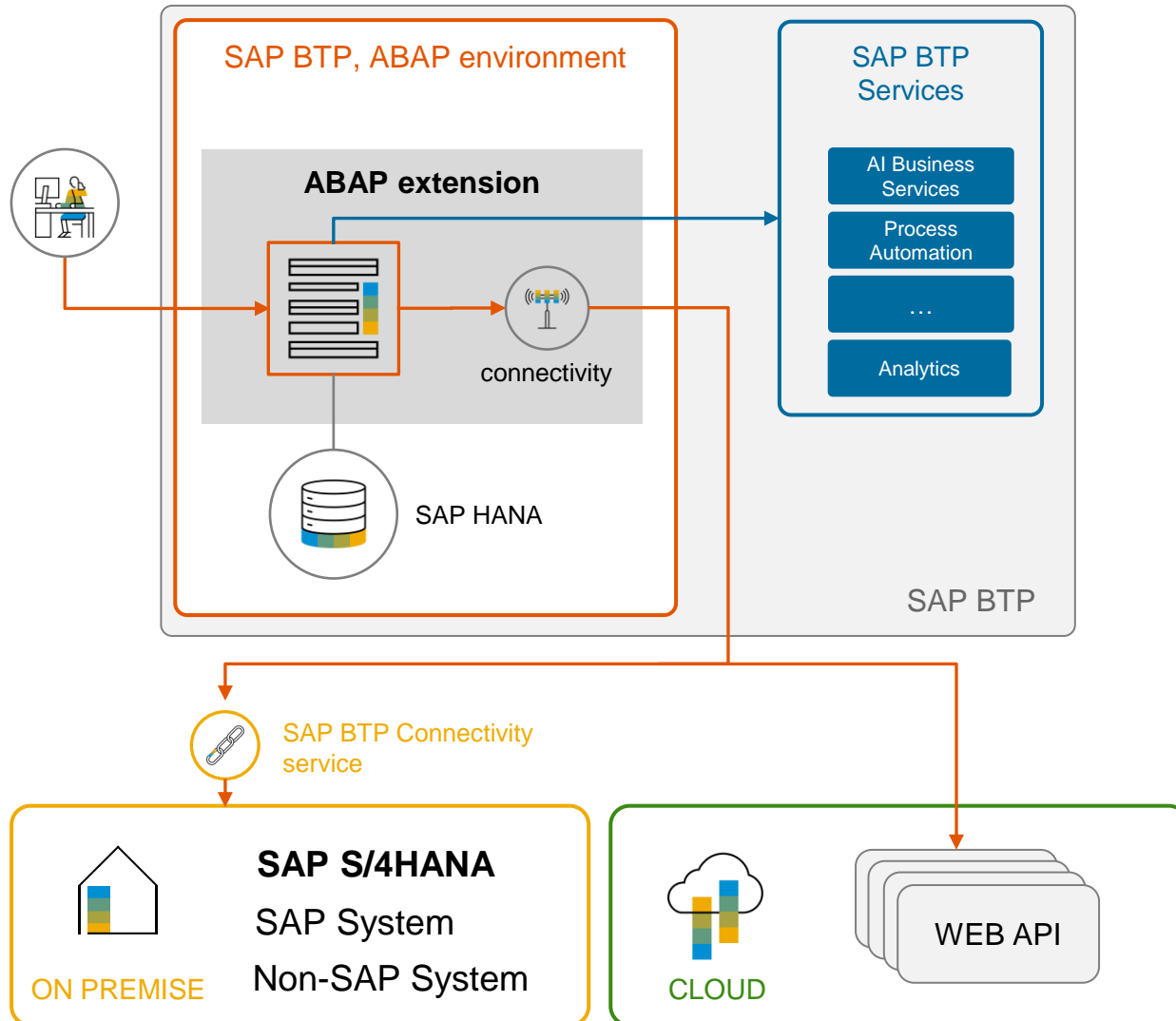


- ▶ Benefit from the newest ABAP Platform and SAP HANA database technologies independent from your existing on-premise system landscape
- ▶ Build your Fiori apps with the new future proof ABAP RESTful Programming Model
- ▶ Utilize SAP BTP services like IoT, machine learning etc. in your cloud extension
- ▶ Delegate operation of the ABAP PaaS and new technologies to SAP



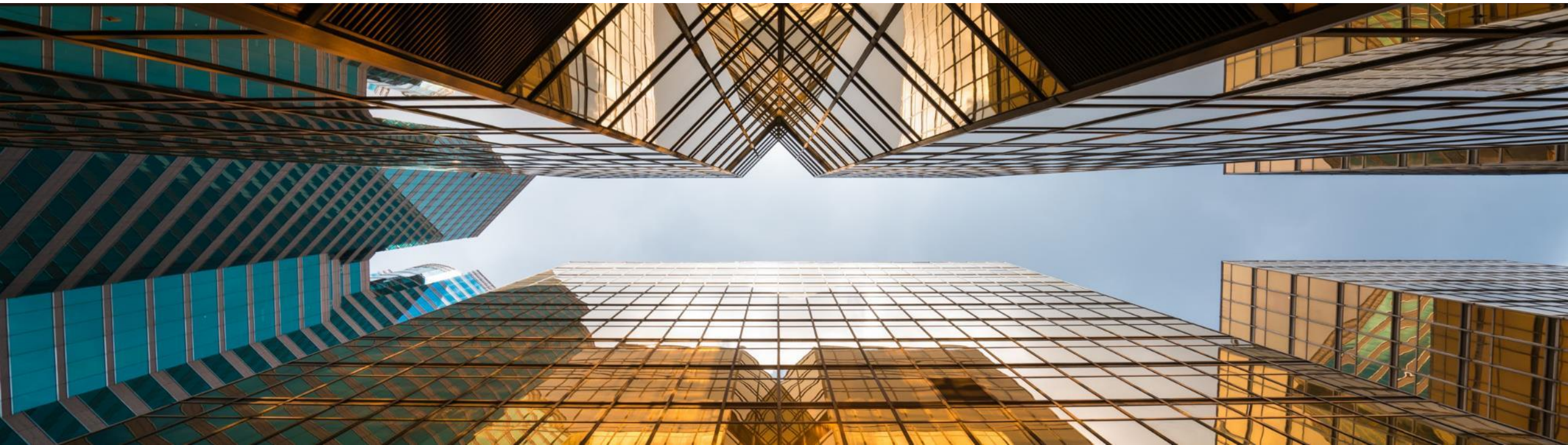
# Extension scenario 3: Hub-like usage

Decouple ABAP implementations from your core business systems

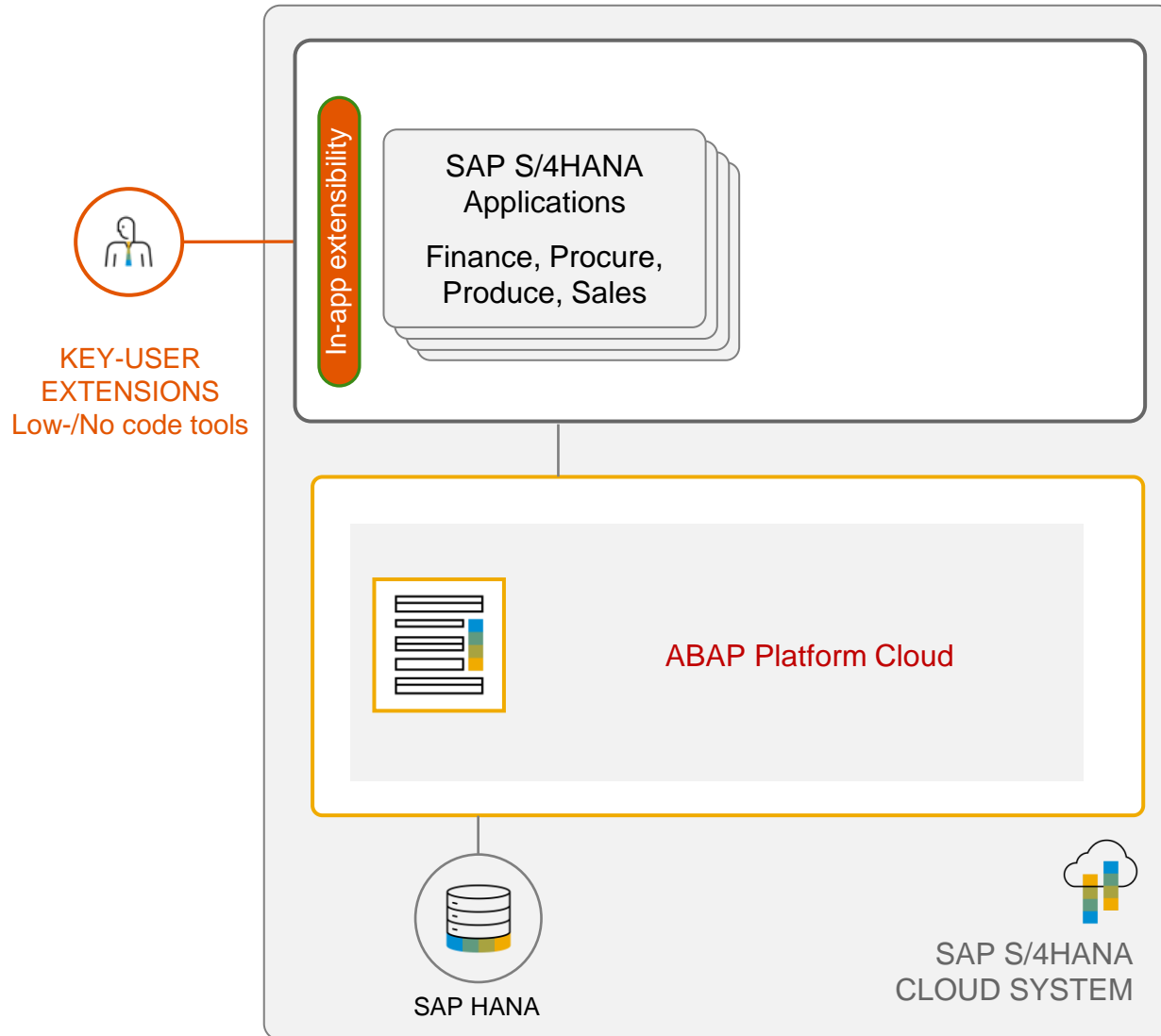


- ▶ **External user group**  
Make your cloud app available to a broader audience that does not have access to your core business systems (e.g. consumer apps)
- ▶ **Integration hub**  
Integrate in your cloud extension multiple cloud/on-premise systems with SAP/non-SAP cloud services
- ▶ **Data integration**  
Collect data from multiple sources in your cloud extension for further processing and analysis
- ▶ **Decoupled extension**  
Cloud extensions use only well defined (remote) APIs of the Business system. This reduces the risk and effort for business system upgrades.

# Embedded Extensibility



# SAP S/4HANA Cloud extensibility today - Key user extensibility



## EXAMPLE: FIELD EXTENSIBILITY

Create and maintain custom fields that can be used to enhance applications and APIs

Choose different data types (e.g., Number, Text)

Custom fields can be used in applications and their UIs, Reports, Email templates, Form Templates, OData APIs and other

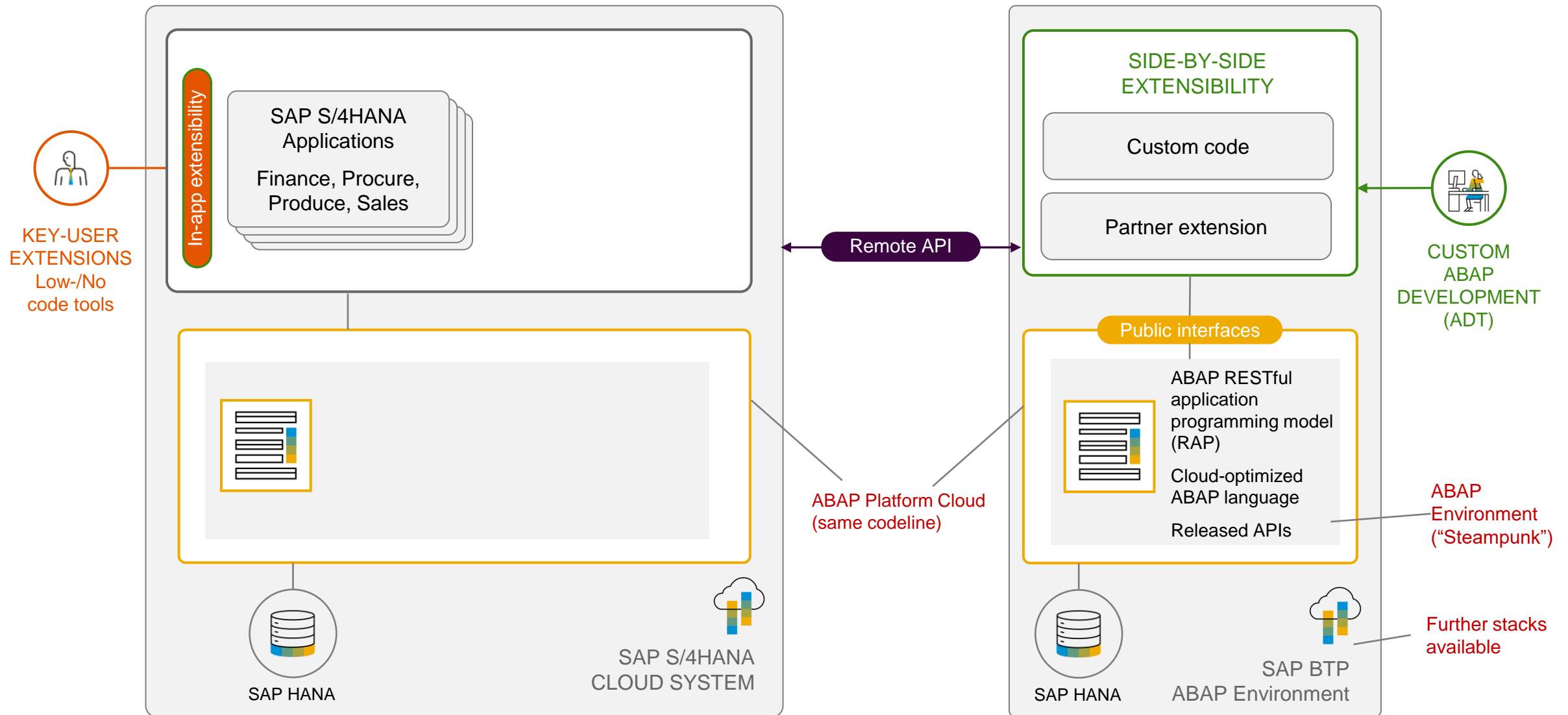
The screenshot shows the 'New Field' configuration screen in SAP. The title is 'New Field'. Below it is the 'Field Properties' section. The properties are as follows:

*Business Context:	Sales: Sales Document Item
*Label:	SalesDocumentExtensionTest
*Identifier:	YY1_ SalesDocumentExten
*Tooltip:	SalesDocumentExtensionTest
*Type:	Text
*Length:	20

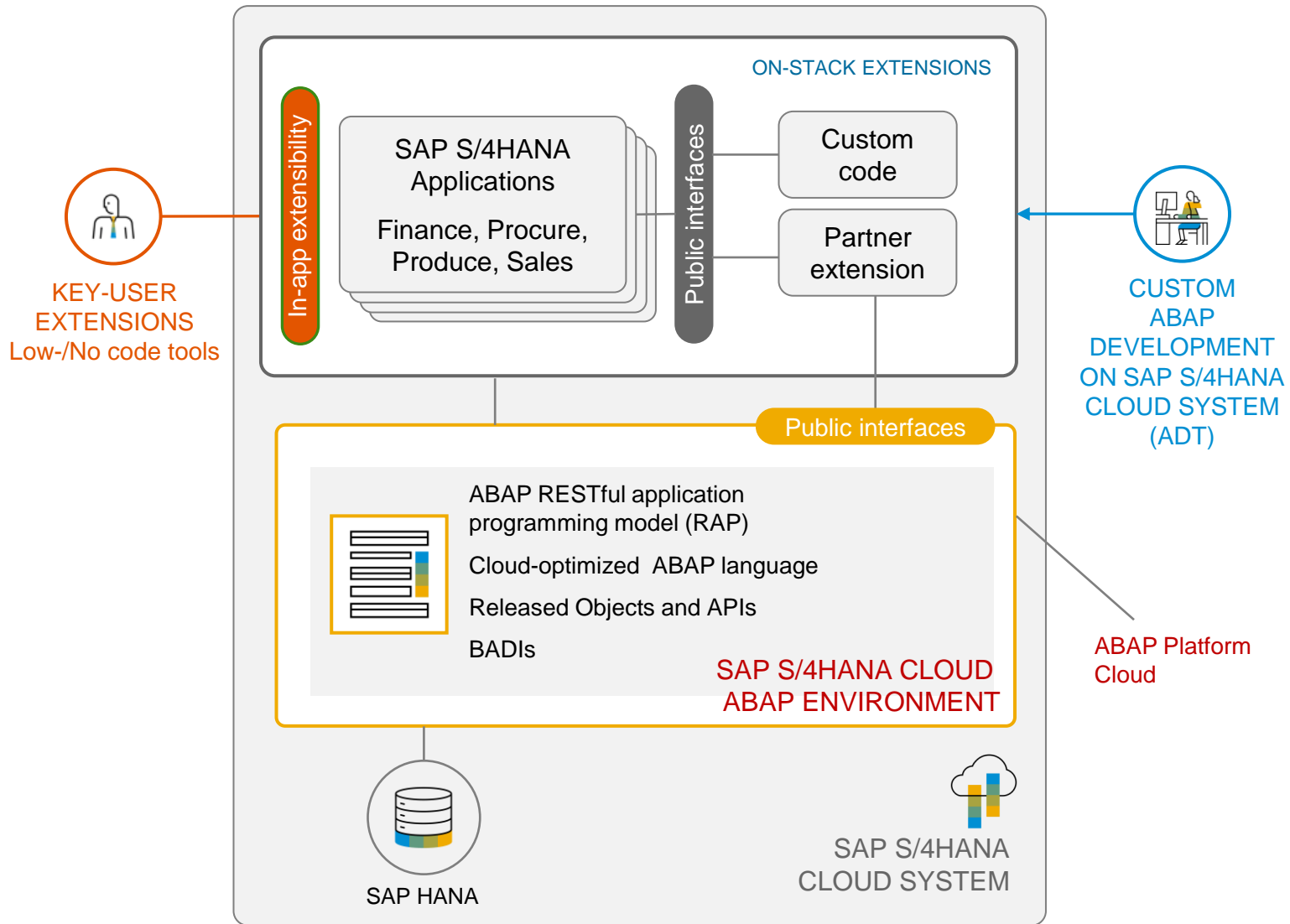
Business Context Capacity: 6%

Buttons: Create, Create and Edit, Cancel

# SAP S/4HANA Cloud extensibility today - SAP BTP ABAP Environment



# SAP S/4HANA Cloud ABAP Environment (*Embedded Steampunk*)



**ENABLE CUSTOM ABAP DEVELOPMENT DIRECTLY ON SAP S/4HANA CLOUD STACK**

## MODERN ABAP DEVELOPMENT

**SAP, customers and partners use the same development model**

**High developer productivity**

**ABAP RESTful application programming model**

- Development of SAP HANA-optimized apps and services
- Eclipse-based ABAP development tools

**SAP Fiori tools for UI Development**

**Proven Lifecycle Management**

## RULES OF THE GAME

- Clear separation between SAP solutions and extensions
- Only stable and reliable public interfaces and released objects from both ABAP platform and SAP S/4HANA Cloud applications can be used
- No modifications

# Extensibility options for SAP S/4HANA Cloud

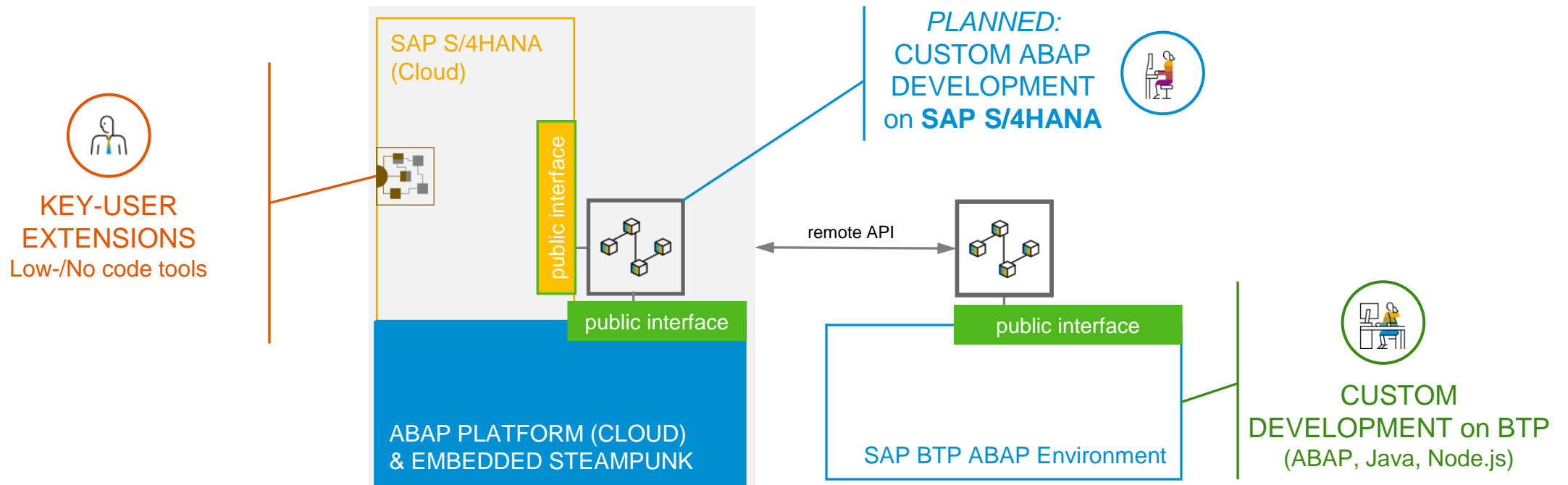
	Custom development integrated in SAP S/4HANA Cloud		Custom development on SAP Business Technology Platform
	Key User Extensibility	Developer Extensibility	Side-by-Side Extension
Scenario	Smaller low-/no-code extensions of SAP solutions	Tightly coupled more complex extensions and apps	Loosely coupled extensions and apps
Target environment	Fully integrated in SAP S/4HANA Cloud stack		SAP Business Technology Platform
Use cases	UI field layout, custom forms and templates Custom analytics via CDS views Custom Business Objects Custom business logic using Cloud BADIs	ABAP based ... custom app development extensions of SAP S/4HANA Cloud solutions partner extensions	Custom or multitenant applications ABAP and non-ABAP (Java, Node.js,) development SaaS solutions developed by partners Apps for separate target groups
Persona	Key user	ABAP developer	Developer
Benefits	Fully managed and integrated in SAP S/4HANA Cloud No or only very basic development skills required	Development of extensions inside the SAP S/4HANA Cloud system No remote access and data replication Use and extend released SAP S/4HANA Cloud objects	Decoupled extensions independent of SAP S/4HANA Cloud operation and lifecycle management

# Vision: One common extensibility model for cloud and on premise

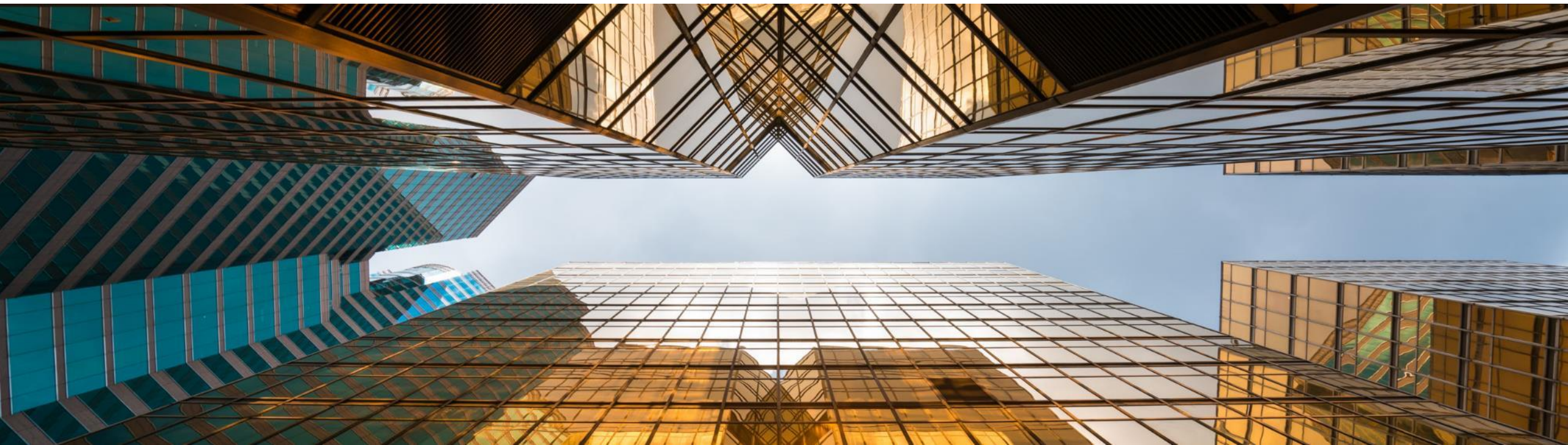


On-stack extensibility

Side-by-side extensibility



# SUMMARY





# Summary

SAP S/4HANA Cloud is SAP's strategic cloud ERP solution offering tailor-made extensibility options

In app-extensibility tools support the key user to create extensions and adapt the SAP S/4HANA Cloud applications with no or very low-code skills

SAP BTP ABAP Environment provides side-by-side extensibility for loosely coupled extensions such as multitenancy enabled SaaS applications by partners

SAP S/4HANA Cloud ABAP Environment – *a.k.a Embedded Steampunk* - offers the development of tightly coupled extensions running directly on the SAP S/4HANA Cloud technology stack

Future direction: Add the the new extensibility option of SAP S/4HANA Cloud ABAP Environment to SAP S/4HANA on-premise as well, to establish a common development model for custom code deployments

# Thank you.

Contact information:

**Safa Golrokh Bahoosh**

Product Management ABAP Platform

SAP SE

[safa.golrokh.bahoosh@sap.com](mailto:safa.golrokh.bahoosh@sap.com)

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