A Hitchhiker's Guide to
SAP Fiori User Experience and its Technologies

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THE BEST RUN SAP

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Flow of this session (2h)

1. A Hitchhiker's Guide to SAP Fiori UX (1)

2. Break / Exercise (10 min)

3. A Hitchhiker's Guide to SAP Fiori UX (2)

4. Q&A
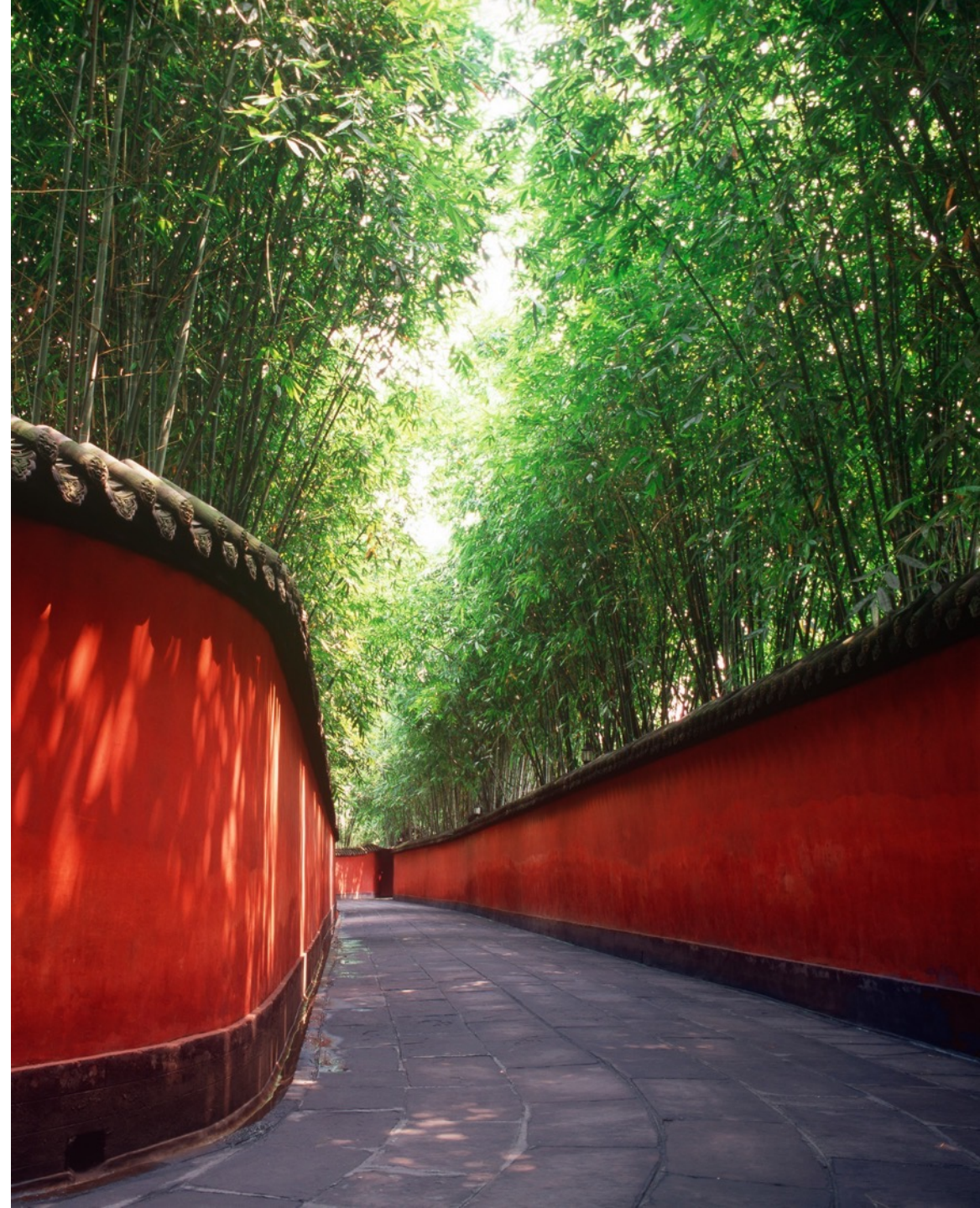
The Hitchhiker's Guide to the Galaxy

A comedy science fiction story created by Douglas Adams. Originally a 1978 radio comedy broadcast on BBC Radio 4, it was later adapted to other formats, including stage shows, novels, comic books, a 1981 TV series, a 1984 text-based computer game, and 2005 feature film.

The broad narrative of Hitchhiker follows the misadventures of the last surviving man, Arthur Dent, following the demolition of the Earth by a Vogon constructor fleet to make way for a hyperspace bypass.

Dent is rescued from Earth's destruction by Ford Prefect—a human-like alien writer for the eccentric, electronic travel guide The Hitchhiker's Guide to the Galaxy—by hitchhiking onto a passing Vogon spacecraft.

Following his rescue, Dent explores the galaxy ...

4

SAP Fiori User Experience

How we live determines how we want to work.

We care about **your needs**

"If you start with a **technology** then it just becomes a **feature list**, but when you start with a **person** then really **amazing things happen**."

Mike Vanis - Interaction Designer

SAP Fiori – in a nutshell

SAP Fiori is our user experience for the intelligent enterprise, enabling users to get their job done in an easy and delightful way. It is the target user experience for each and every product developed at SAP.
SAP Fiori can be implemented on various UI technologies and platforms.

SAP Fiori design system

- Design principles, design languages, guidelines & artefacts

SAP Fiori user experience provided by SAP products

- Responsive apps and native ones
- Helping users get their job done easily and intuitively

SAP Fiori development tools

- Such as SAP Fiori tools, SAP Fiori for mobile SDKs,
  SAP Business Application Studio / SAP Web IDE

SAP Fiori technology

- Such as the SAP Fiori launchpad, SAP Fiori elements, SAPUI5
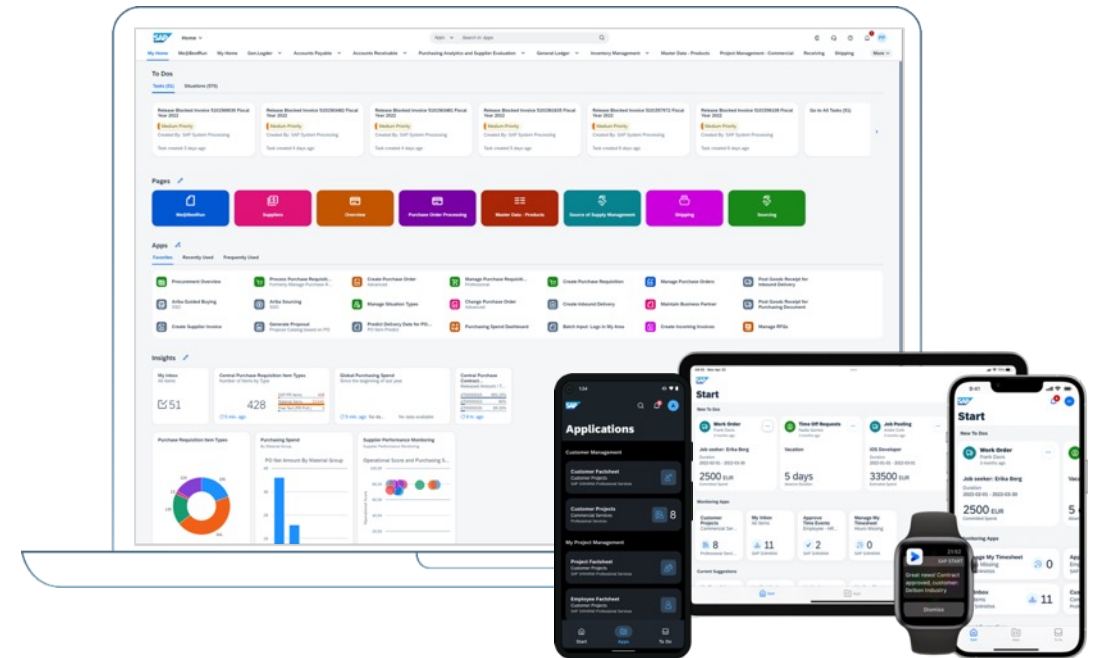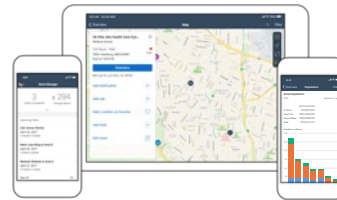
SAP Fiori continues to evolve

Casual users
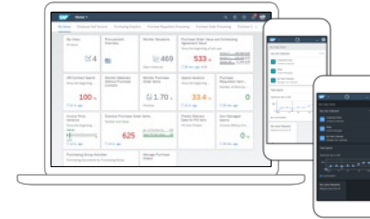Self-service apps
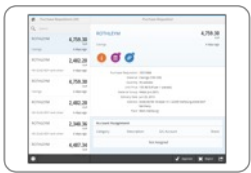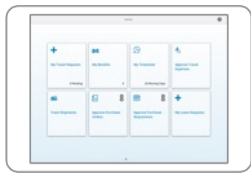
Desktop user
The new face of SAP S/4HANA
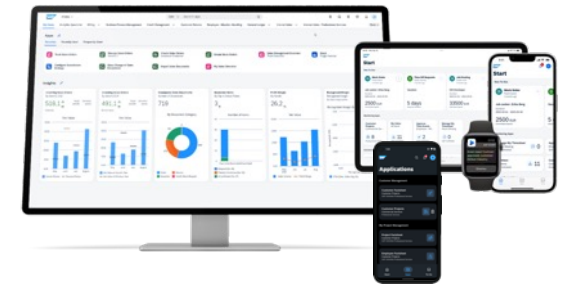
Native mobile
for iOS & Android

Next steps of the SAP Fiori evolution
SAP Fiori with Quartz   SAP Fiori with Horizon

Conversational

Consistent - - - - - - - - - - - - ->

Intelligent - - - - - - - - - - - - ->

Integrated - - - - - - - - - - - - ->

Collaborative - - - - - - - ->

2013

2016

2019

2022+

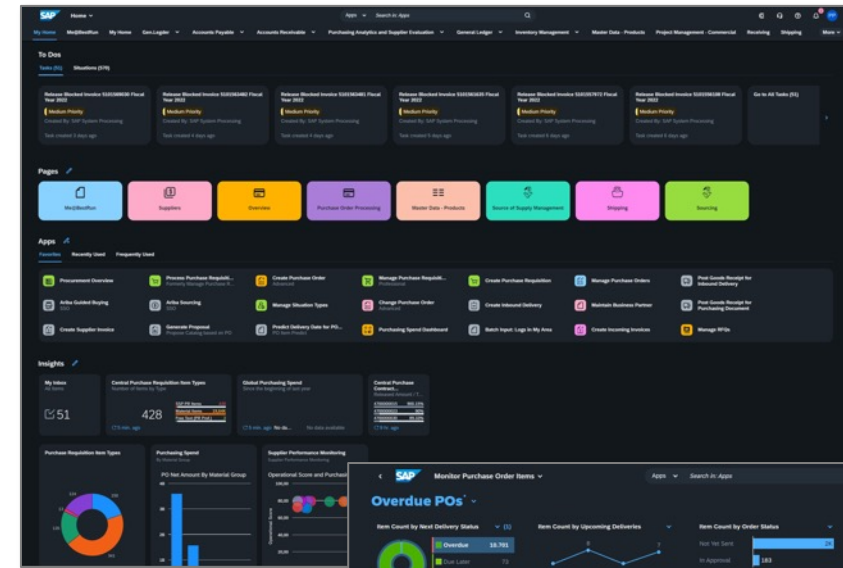**SAP Fiori**   **SAP Fiori 2.0**   **SAP Fiori 3**   **SAP Fiori with Horizon**

SAP Fiori visual design: Horizon themes
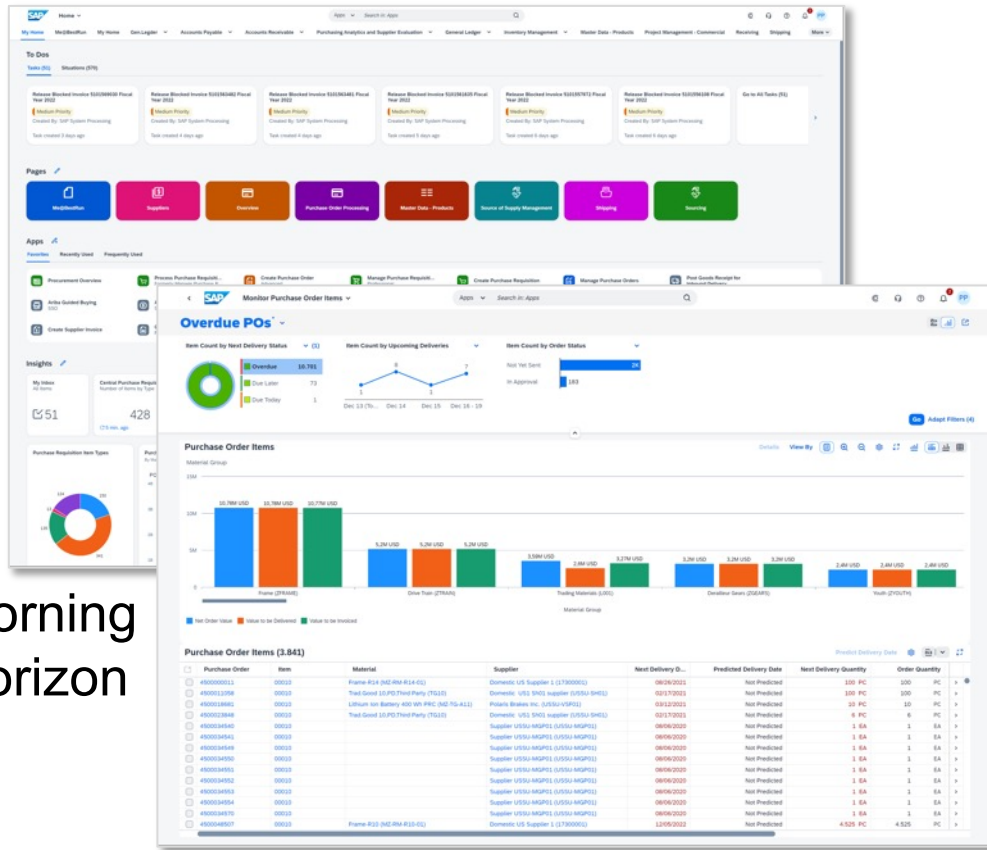
Morning
Horizon

Evening
Horizon

For low-light
environments

SAPUI5 supports:
- Morning / Evening Horizon
- High Contrast White / Black

SAP SuccessFactors with Horizon

SAP Concur: Horizon preview
Hotel booking

SAP Labs preview

SAP Labs preview

This is the current state of planning and may be changed by SAP at any time without notice.

Horizon support by UI Technologies used by SAP S/4HANA
SAP S/4HANA Cloud and SAP S/4HANA
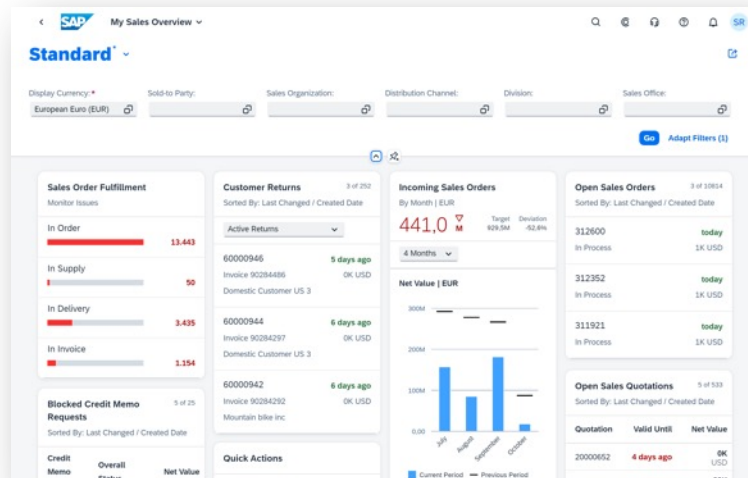
SAPUI5
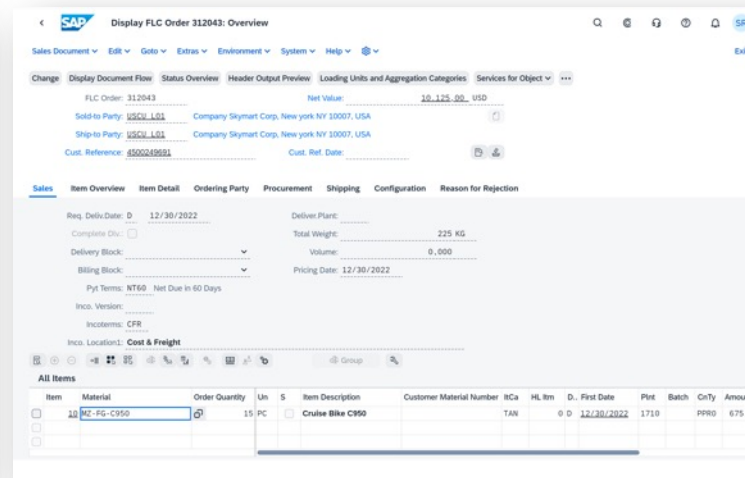
SAP GUI for HTML
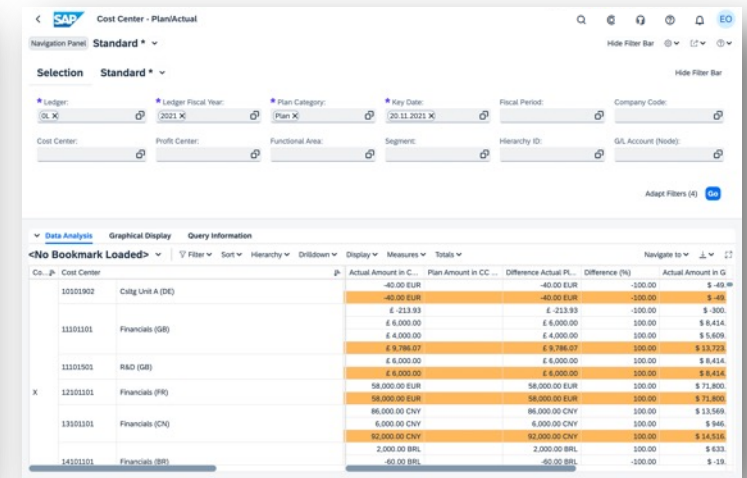
Web Dynpro for ABAP

Availability of Horizon themes of SAP Fiori

Horizon is available in SAP S/4HANA Cloud 2208
- [SAP Fiori Update: Major Horizon Next Steps Available Now – SAP S/4HANA Cloud 2208 and More](#)

Developers can use Horizon on SAP Business Technology Platform
- [Horizon theme of SAP Fiori: productive usage for web applications](#)

Horizon themes in SAP Launchpad service and SAP Work Zone
- [Horizon themes now available with the SAP Launchpad service and SAP Work Zone](#)

Horizon themes in UI Theme Designer
- [Video](#)

Horizon themes for Android & iOS mobile applications
- [SAP Fiori for Android & iOS: An all-new user experience for enterprise-ready mobile applications](#)
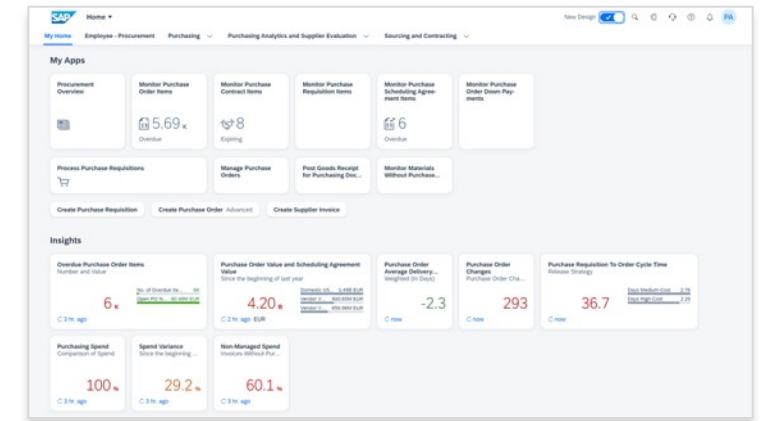
Fiori 3 provides UX Consistency
Current home page designs

SAP Labs preview
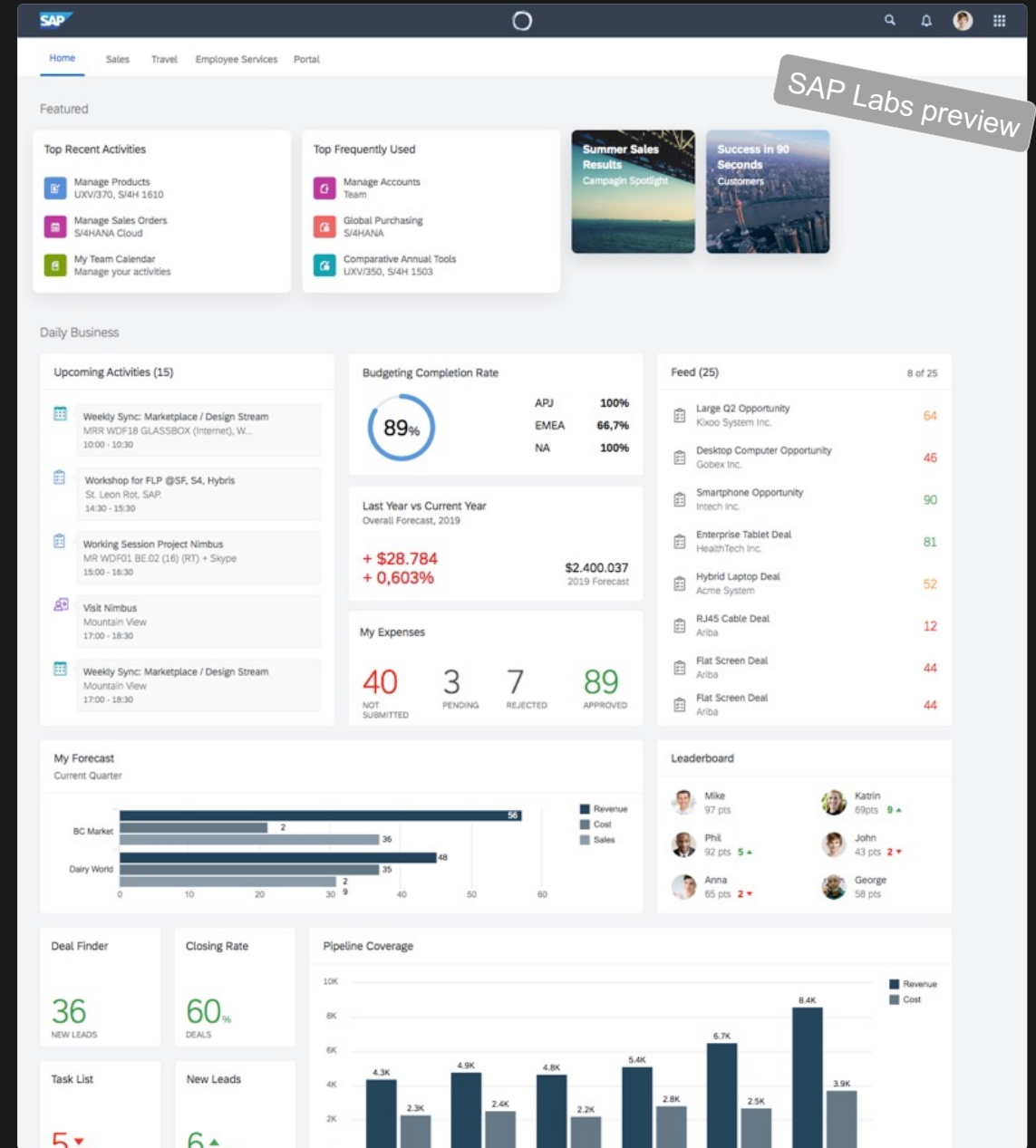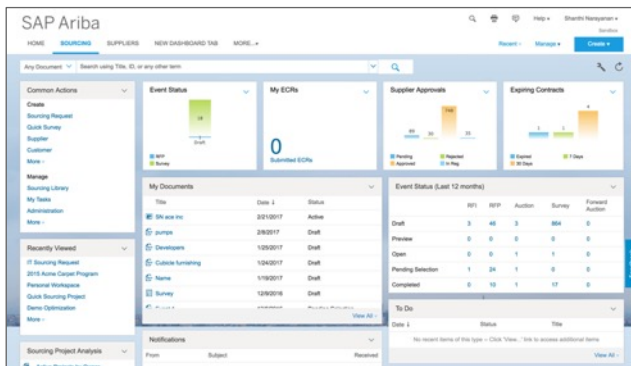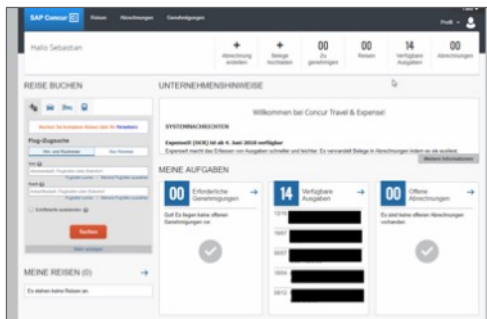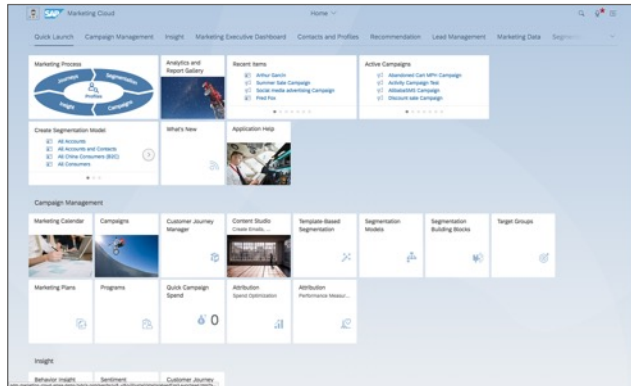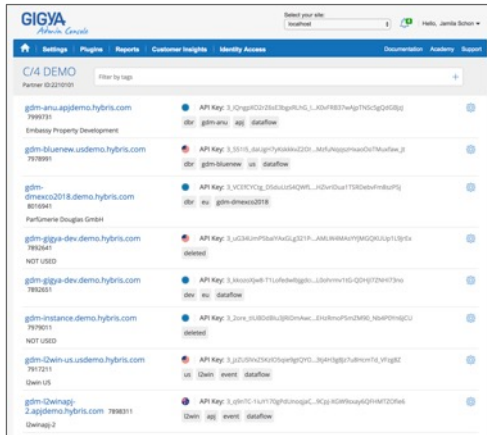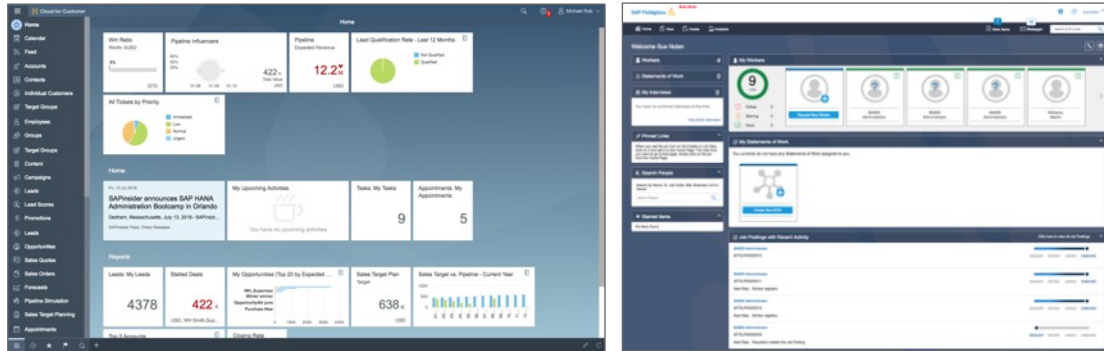
SAP Fiori Design System

[SAP Fiori Design Guidelines](#)

[SAP Fiori's Horizon visual theme in SAP S/4HANA Cloud 2208 (video)](#)

Source: https://en.wikipedia.org/wiki/Marvin_the_Paranoid_Android

Learn more

General information on SAP User Experience

► [SAP Fiori product page](#) get an overview

► [SAP Fiori topic page in the SAP community](#)
links to detailed information and blogs, e.g.
design guidelines, road map, documentation, rapid
development with SAP Fiori elements

Additional information for this presentation

► [openSAP course "SAP Fiori overview"](#)

► SAP Fiori road map: [Technology](#); [Applications and Technology](#)

► Blog posts:

   ► [SAP Fiori: What's new SAP S/4HANA 2022 (on-premise & private cloud)](#)

   ► [SAP Fiori Update: Major Horizon Next Steps Available Now…](#)

   ► [SAP Fiori Evolution: Horizon Now GA in UI Technologies…](#)

   ► [SAP Fiori 3: How to put intelligence into your user experience](#)

   ► [How to use SAP Fiori elements, SAPUI5 freestyle or a mix of both...](#)

► [SAP Fiori apps reference library](#)

SAP Fiori User Experience Enabled by Technologies & Tools

Teaching concept

Developer | Citizen Developer | Key User | Business User

Pro-Code

Develop/ Extend/ Deploy

Low-Code No-Code

Adapt

Desktop / Web
SAPUI5
SAP GUI for HTML, Web Dynpro

Run

Mobile
Native
Android / iOS

Local Laptop	SAP Business Technology Platform			
Visual Studio Code (non-ABAP) / SAP Fiori tools	SAP Business Application Studio / SAP Fiori tools	SAP Build Apps		
ABAP Development Tools in Eclipse	SDK for iOS / Android	Mobile Development Kit		

SAPUI5 Flexibility

SAP Screen Personas (SAP GUI / WD ABAP)

SAP Work Zone

SAP Fiori launchpad

SAP Mobile Start

SAP Business Technology Platform

Backend

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

SAP Fiori User Experience Enabled by Technologies & Tools

Business User

Desktop / Web
SAPUI5
SAP GUI for HTML, Web Dynpro

Run

SAP Work Zone

SAP Fiori launchpad

SAP Business Technology Platform

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

Backend

Digital Experience for SAP Fiori:
SAP Work Zone

Our vision:

Increase **user productivity** by intelligently providing access to **applications**, **processes**, and **information** anywhere on any device

How can business users easily access relevant applications and services to get their job done more efficiently?
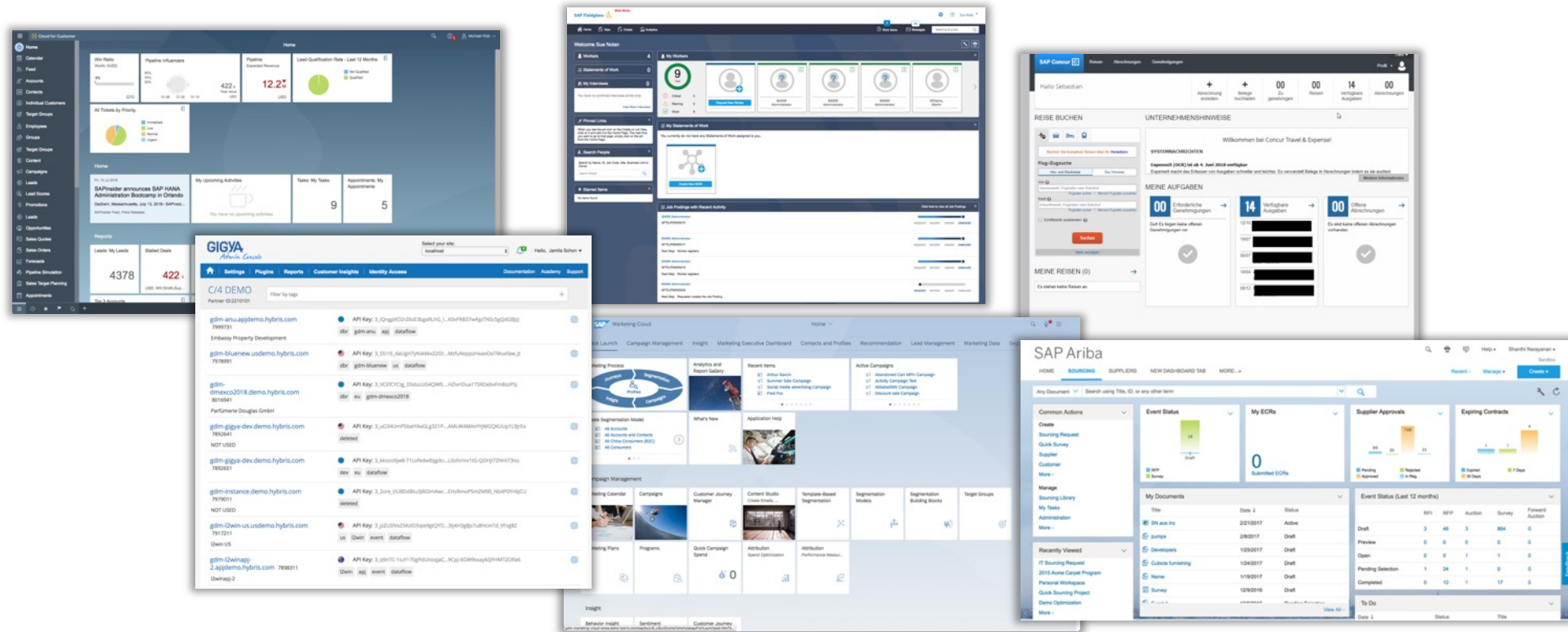
Consistency through harmonized user experience | UX integration via a central point of access

Bringing together SAP's product home pages into a cross-system entry point

Cross-system entry point
Access apps, tasks, notifications, and unstructured content across multiple SAP systems and cloud solutions

Product home pages
Access relevant content across a single SAP system or cloud solution

Organize apps and analytics in pages
Organize resources per business role

Apps
Details and in-depth exploration

SAP Business Technology Platform (SAP BTP)

SAP Start | SAP Build Work Zone

| SAP S/4HANA Cloud | SAP S/4HANA | SAP SuccessFactors solutions | Other SAP products |
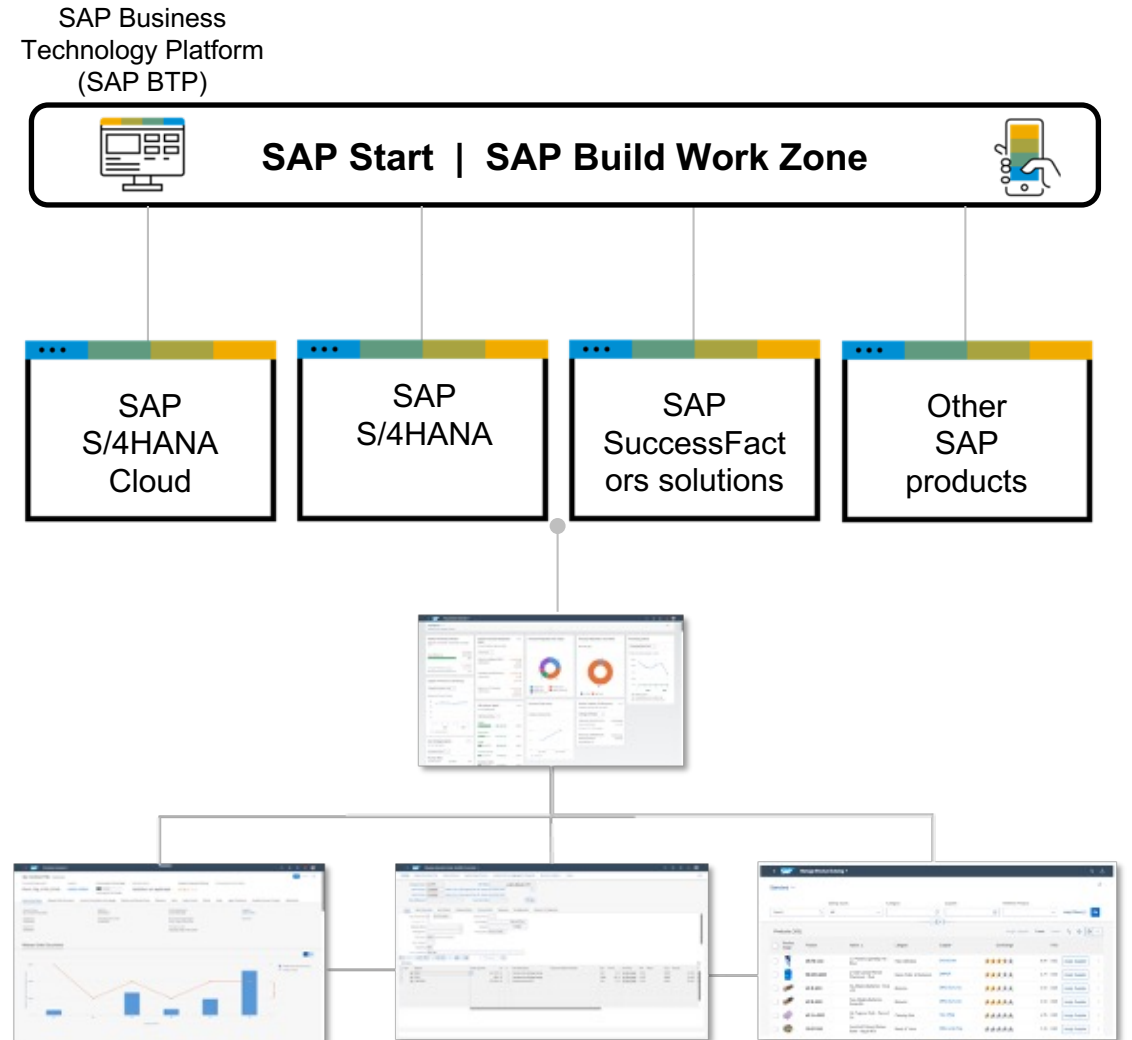
A modular offering for the central entry point from SAP

SAP Fiori with the Horizon theme
SAP Mobile Start

SAP Build Work Zone,
advanced edition

SAP Build Work Zone,
standard edition

Upgrade

SAP Start[1]

Upgrade

- Extend the standard offering with enhanced capabilities for content management, Web content, team workspaces, and integration with third-party solutions (such as Microsoft Teams)
- Empower business users to create and publish content
- Provide solution-specific, premium content

- Provide central access to multiple cloud and on-premise systems
- Integrate custom low-code/no-code apps[2]
- Access multiple pages through the navigation menu[2]
- Leverage customizations and extensions (such as branding, translations, shell plug-ins, and domains)

- Pre-configured home page for SAP cloud solutions
- Access apps and tasks from the connected systems
- Tap into preconfigured cross-LOB business content

[1] Beta | [2] Road map item

Best practice: Choosing the right solution for your business

	Product home page	SAP Start	SAP Build Work Zone, standard edition	SAP Build Work Zone, advanced edition
Number of integrated systems	1	2 +	1 +	1 +
Integration with cloud-only, cloud, and on-premise systems		cloud	on-premise + cloud	on-premise + cloud
Integration with low-code/no-code apps and custom-defined process automations			✓	✓
Integration of unstructured content such as Web content, documents, news, and multimedia				✓
Interactive workspaces created by business users				✓

upgrade path

Excursus: SAP Fiori deployment options and recommendations

On-premise

- Launchpad as part of SAP Fiori front-end server
- SAP S/4HANA with embedded SAP Fiori experience for standard applications
- SAP Business Suite: SAP Fiori front-end server as hub for multiple back-end systems possible

Cloud

- Launchpad based on SAP BTP
- SAP BTP tools to develop and extend apps
- Central launchpad to integrate applications from cloud and on-premise

Guide updated in August 2022

SAP Fiori FES* embedded

FLP content
Fiori UIs
SAP backend

SAP Fiori FES* as standalone server / hub

FLP content
Fiori UIs
SAP backend

SAP Business Technology Platform

FLP content
Fiori UIs
Cloud connector
SAP backend
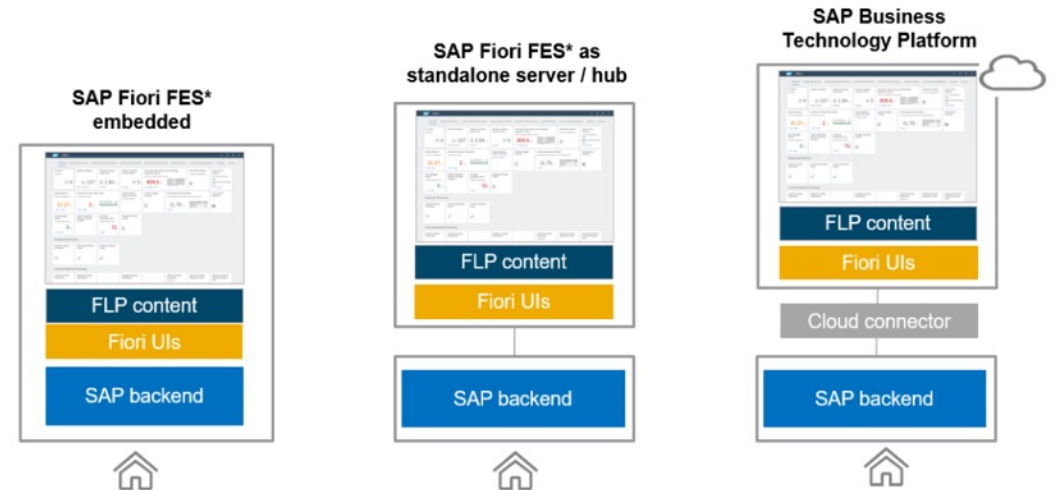
[SAP Fiori Deployment Options and System Landscape Recommendations](#)

SAP Build Work Zone
Demo

See how you can quickly build business sites with drag & drop simplicity.

Click to check the demo
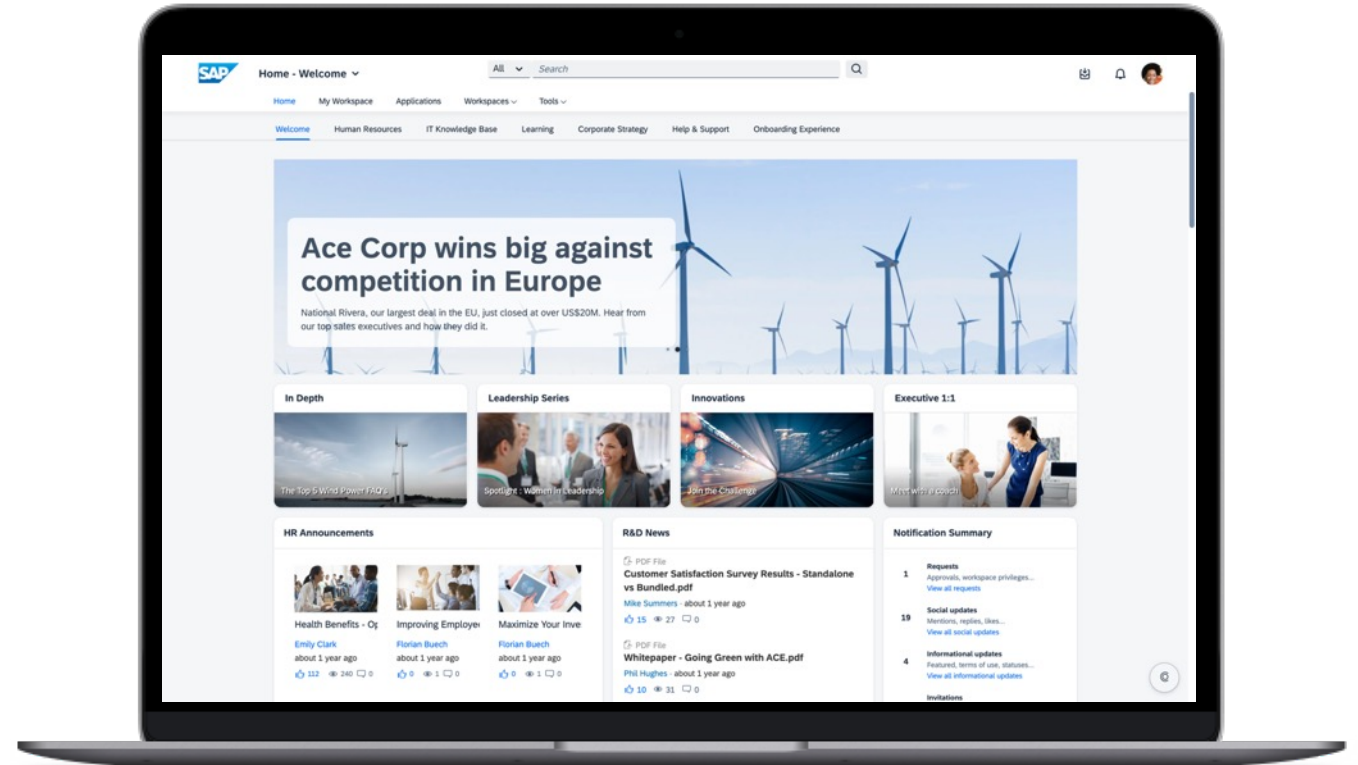
Entry points to SAP Fiori

[My Home in SAP S/4HANA Cloud (video)](#)

[SAP Fiori Deployment Options and System Landscape Recommendations](#)

The Strategic UI Technology of SAP Fiori:
SAPUI5

Building Modern Web Applications with SAPUI5

SAPUI5 is an HTML5 framework for creating cross-platform, enterprise-grade applications

- **Consistent UX**: SAPUI5 enables the SAP Fiori design evolution across SAP solutions (and beyond).

- **Use anywhere**: SAPUI5 allows a single, responsive app implementation for all browsers, platforms, and devices.

- **Hundreds of enterprise UI elements** to build professional UIs. UI5 Web Components extend UI5 to all web technology stacks.

- **Powerful extension options**: You can adapt SAP standard apps and customize UIs without coding.

- **Flexible tools for any developer**: SAPUI5 comes with tools to efficiently build, test, and deploy apps. Both in pro-code as well as low-code ways.

- **Innovations**: SAPUI5 brings a separation of apps and framework to centrally innovate while staying upgrade-compatible.

- **Open-Source**: SAPUI5 qualities available as OpenUI5.
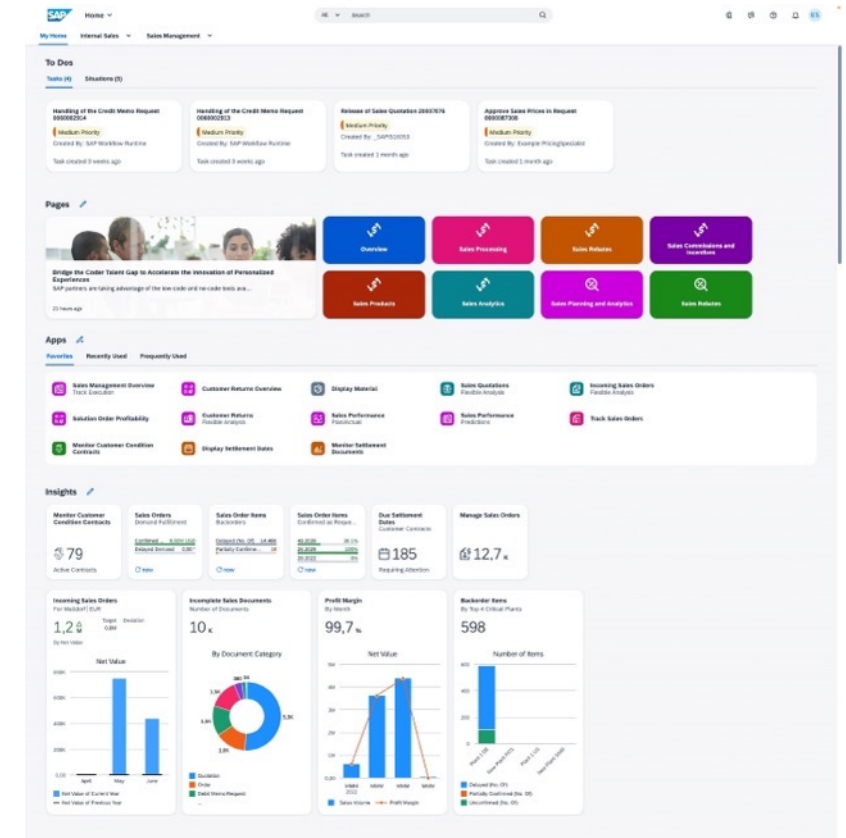
Video: What is SAPUI5?

SAPUI5 applications

A single app
implementation
for all

- Browsers
- Platforms
- Devices

Browsers

Platforms

Devices
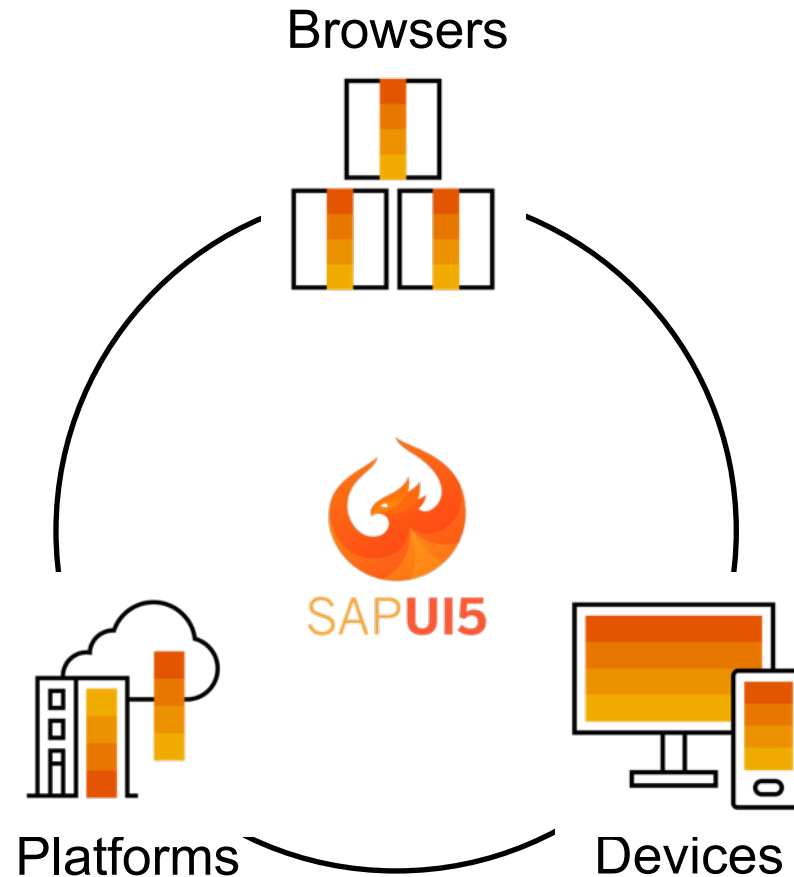
SAPUI5 Browser and Platform Support

UI5 Web Components provide reusable UI components


```
28    <body class="sapUiBody">
29        <h2>UI5 Web Components</h2>
30
31        <button>add</ui5-button><br>
32        <input placeholder="Hello"></input>
33        <ul>
34            <li>Apples</li>
35            <li>Oranges</li>
36            <li>Bananas</li>
37        </ul>
38    </body>
```

```
28    <body class="sapUiBody">
29        <h2>UI5 Web Components</h2>
30
31        <ui5-button>add</ui5-button><br>
32        <ui5-input placeholder="Hello"></ui5-input>
33        <ui5-list>
34            <ui5-li>Apples</ui5-li>
35            <ui5-li>Oranges</ui5-li>
36            <ui5-li>Bananas</ui5-li>
37        </ui5-list>
38    </body>
```

UI5 Web Components

add

Hello

- Apples
- Oranges
- Bananas

UI5 Web Components

+ add

Hello   ✕

Apples   Available ›
Oranges   Re-stock ›
Bananas   Re-stock ›

UI5 Web Components home page
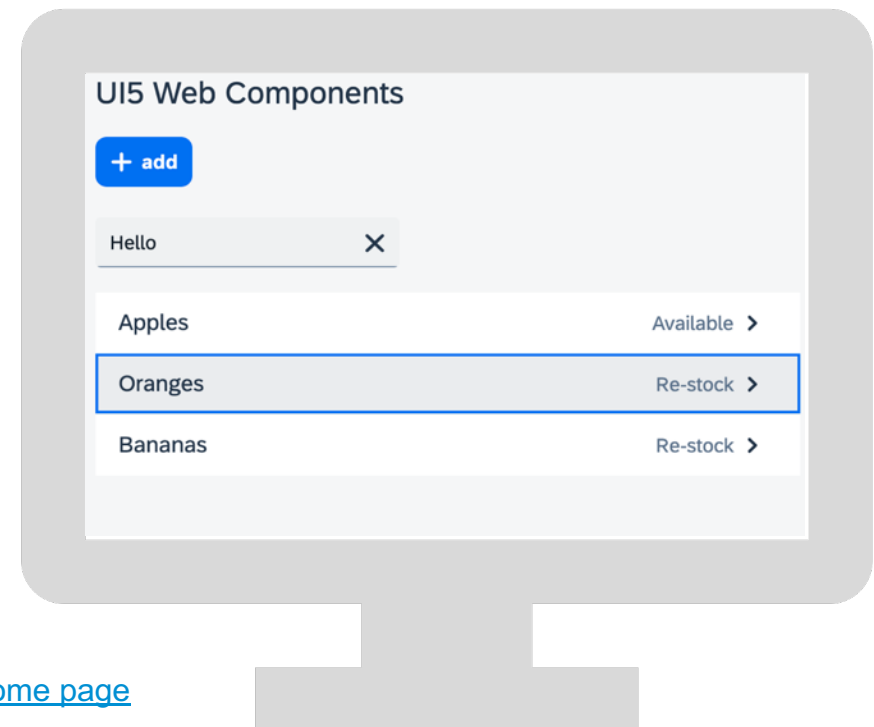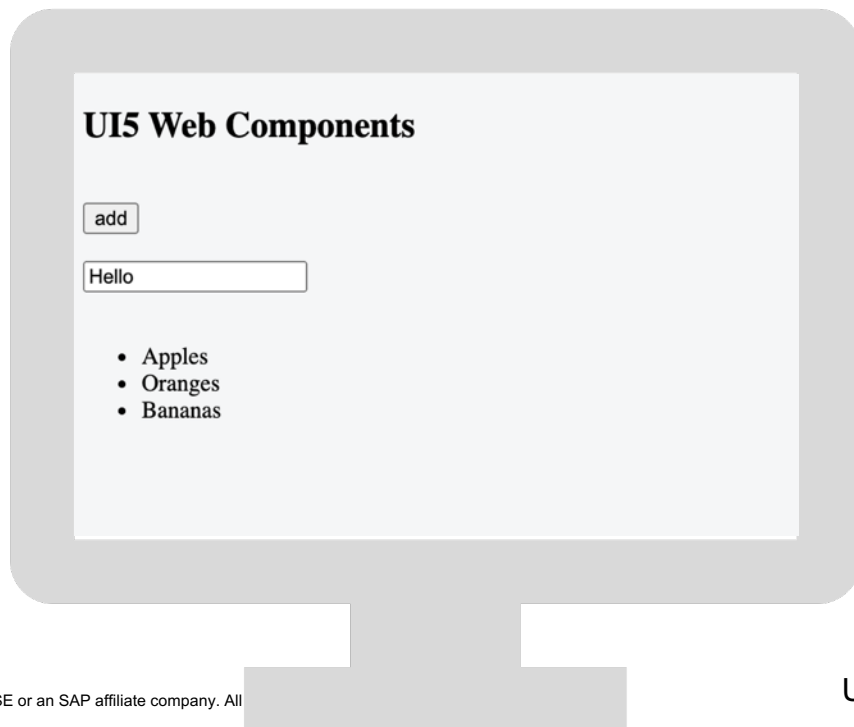
SAPUI5 is innovating with feedback from large-scale usage

2.150+

SAPUI5 apps with millions of users in SAP S/4HANA

18M+

unique users of SAPUI5 in SAP SuccessFactors

1.110+

SAP S/4HANA Cloud customers using SAPUI5 apps productively

SAPUI5 in

SAP Business Technology Platform
SAP Integrated Business Planning
SAP Business ByDesign
SAP Launchpad service
SAP S/4HANA Cloud
SAP Fiori launchpad
SAP Analytics Cloud
SAP Business One
SAP Cloud ALM
SAP Work Zone
SAP S/4HANA
SAP for Me
SAP IT
…

14M+

unique users of Web Components in SAP SuccessFactors

Web Components

SAP Business Technology Platform
SAP S/4HANA Procurement

1.536+

SAP BTP customers building SAP Fiori apps in SAP Business Application Studio

Design

Bringing the SAP Fiori design system

Partner

Enabling a thriving partner ecosystem

Open Source

growing developer community

SAPUI5

Integration cards expose application content in a consistent and unified way

UI integration with cards allows users to:

- Embed cards in different host environments, such as applications, dashboards, or HTML pages

- Use a variety of available card types

- Configure cards with a simple JSON configuration – No need to write code

- Create cards according to their needs, regardless of coding ability

Card explorer: Learn, explore, and integrate cards

SAPUI5

[What is SAPUI5?](#)

[SAPUI5 Demo Kit (https://ui5.sap.com)](https://ui5.sap.com)

Source: https://en.wikipedia.org/wiki/Marvin_the_Paranoid_Android

Efficiently Developing SAPUI5 apps:
SAP Fiori elements

SAP Fiori elements provides enterprise-ready apps out of the box

Variant Mgmt

Search

Data Lists

Filtering

Actions

Sorting

Personalization

Export to Excel

Editing (incl. draft mgmt.)

Navigation

Object Details

Additional enterprise readiness features included are:

- Accessibility
- Internationalization
- Mobile compatibility
- Responsiveness
- Performance optimizations
- Integration
- Security checks
- Lifecycle stability
- Test automation support
- …and more

OData annotations are metadata that define attributes and relationships

Business data

How is it displayed?

SAP Fiori elements patterns
- Overview page
- List Report page
- Object page
- Analytical list page
- Worklist page

Provided by:
SAP framework development

at runtime

What is displayed?

- Semantic metadata / annotation
- Behavior
- Consumption hints

Provided by:
Application Developers

"Consumption hints"

Which fields allow a human to identify the entity?

Which fields are clickable?

"This entity can be edited"

"This is the currency for the amount"

"These fields shall be displayed together in a form"

"Behavior like creatable, updatable"

SAP   Page Title ▾

Robot Arm Series 9
PO-48865

Edit   Delete   Simulate Assembly

Manufacturer: Robotech   Status: Delivery Time: Assembly Option: Monthly Leasing Instalment:
Factory: Florida, OL   Delivery   12 days   To Be Selected   379.99 USD
Supplier: Robotech (234242343)

General Information   Assembly Options   Contact Information

Order Details   Configuration Details

Order ID: Expected Delivery Date: Model:
589946637   June 23, 2018   Robot Arm Series 9

Contract: Factory: Color:
10045876   Florida, OL   White (default)

Transaction Date: Supplier: Socket:
May 6, 2018   Robotech   Default Socket 10

                                                        Axis:
                                                        6 Axis

                                                        Leasing Instalment:
                                                        379.99 USD per month

Assembly Options

Work Items with Errors (23)   Search   ↑↓ ▽ [×] ⚙

Document Number	Company	Contact Person	Posting Date	Amount (Local Currency)
1022388200182O	Jologa		11/15/19	12,897.00 EUR
10223882001820	DelBont Industries		11/15/19	234,197.00 EUR
1022388200182O	Jologa	Denise Smith	11/15/19	11,865.99 EUR
10223882001820	DelBont Industries	Richard Wilson	11/15/19	12,897.00 EUR

SAPUI5 View

Choose the right UI development approach for your SAPUI5 app

SAPUI5 freestyle		SAP Fiori elements
Flexibility	Overall approach	Efficiency
Freestyle designs	Design requirements	SAP templates
Web Development	Development knowledge	Annotations
Own coding, own UI logic	App ownership / maintenance	Own annotations, SAP's UI logic
Higher	Total cost of development	Lower

Flexible Programming Model blends SAP Fiori elements and SAPUI5 freestyle

Developers have a continuum of options instead of an either/or decision

SAP Fiori elements
Metadata-driven development using annotations

SAPUI5 freestyle
JavaScript framework and UI library

Flexible Programming Model

Standard floorplans

Standard floorplans + custom artifacts*

Custom layout* + standard building blocks

Custom layout

Efficiency ← → Flexibility
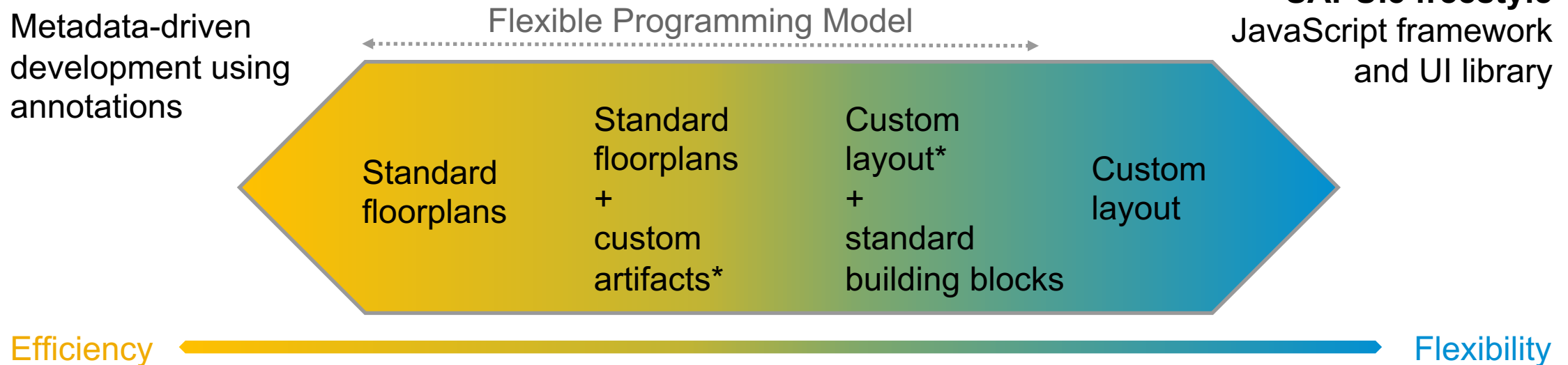
How to use SAP Fiori elements, SAPUI5 freestyle or a mix of both with the Flexible Programming Model

*leveraging standard building blocks and/or SAPUI5 controls / custom code

SAPUI5 brings scalability and flexibility to SAP Fiori app development

Efficient development based on metadata

Framework for application development

UI element with visual design & behavior

UI5 Web Components

SAPUI5
OpenUI5
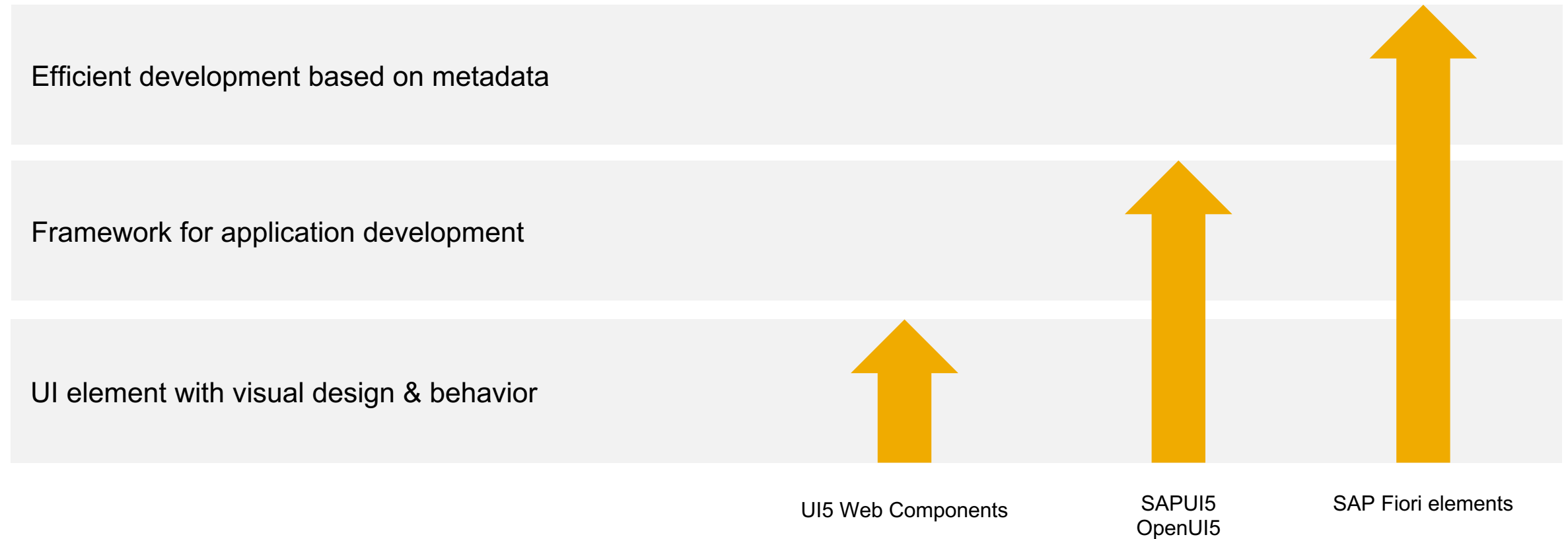
SAP Fiori elements

SAP Fiori elements

[Developing Apps with SAP Fiori Elements](#)

[SAP Fiori Elements: Flexible Programming Model Explorer](#)

Source: https://en.wikipedia.org/wiki/Marvin_the_Paranoid_Android

Knowledge

SAP Launchpad service
- Getting started using [free tier](), personal trial, or regular enterprise account
- Try out the [tutorials]()
- Read the [blog posts]()
- Check the [documentation]() for details

SAP Work Zone
- Product page: [SAP Work Zone]()
- Read the [blog posts]()
- Check the [documentation]() for details

SAPUI5
- [https://ui5.sap.com/]() with getting started, tutorials,…
- [SAPUI5 Community Topic Page]()
- [SAP Fiori elements]()
- [SAPUI5 Road Map]()
- [Blog post: Learning SAPUI5 for Beginners]()
- [openSAP: Developing Web Apps with SAPUI5]()
- [openSAP: Evolved Web Apps with SAPUI5]()
- [openSAP: Developing and Extending SAP Fiori Elements Apps]()

SAP Fiori User Experience Enabled by Technologies & Tools

	Citizen Developer		Key User	Business User	
Developer					

Pro-Code Develop/Extend/Deploy **Low-Code No-Code** Adapt **Desktop / Web** SAPUI5 SAP GUI for HTML, Web Dynpro Run **Mobile** Native Android / iOS

Pro-Code (Local Laptop)
- Visual Studio Code (non-ABAP) — SAP Fiori tools
- ABAP Development Tools in Eclipse

Low-Code No-Code (SAP Business Technology Platform)
- SAP Business Application Studio — SAP Fiori tools
- SAP Build Apps
- SDK for iOS / Android
- Mobile Development Kit

Adapt
- SAPUI5 Flexibility
- SAP Screen Personas (SAP GUI / WD ABAP)

Desktop / Web (SAP Business Technology Platform)
- SAP Work Zone
- SAP Fiori launchpad

Mobile
- SAP Mobile Start

Backend
- SAP S/4HANA Cloud — ABAP
- SAP S/4HANA — SE80 — ABAP
- ECC — SE80 — ABAP

SAP Fiori User Experience Enabled by Technologies & Tools

Developer

Citizen Developer

Pro-Code

Develop/
Extend/
Deploy

**Low-Code
No-Code**

SAP Business Technology Platform

- SAP Business Application Studio
  - SAP Fiori tools
- SAP Build Apps
- SDK for iOS / Android
- Mobile Development Kit

Backend

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

SAP's Development Environments:
pro-code, low-code and no-code

# What Is SAP BTP?

The platform that brings together application development, automation, data management, analytics and planning, integration, and AI capabilities into one unified environment optimized for SAP applications

It is a comprehensive solution with:

- An intuitive, modern development environment for both, professional IT and citizen/business developers

- Prebuilt data models, integrations, workflows, app templates, and AI business services

- Self-service data discovery, modeling, planning and analytics, for business users in a governed environment

- Availability on Microsoft™ Azure™, AWS™, Google Cloud™ and Alibaba Cloud™
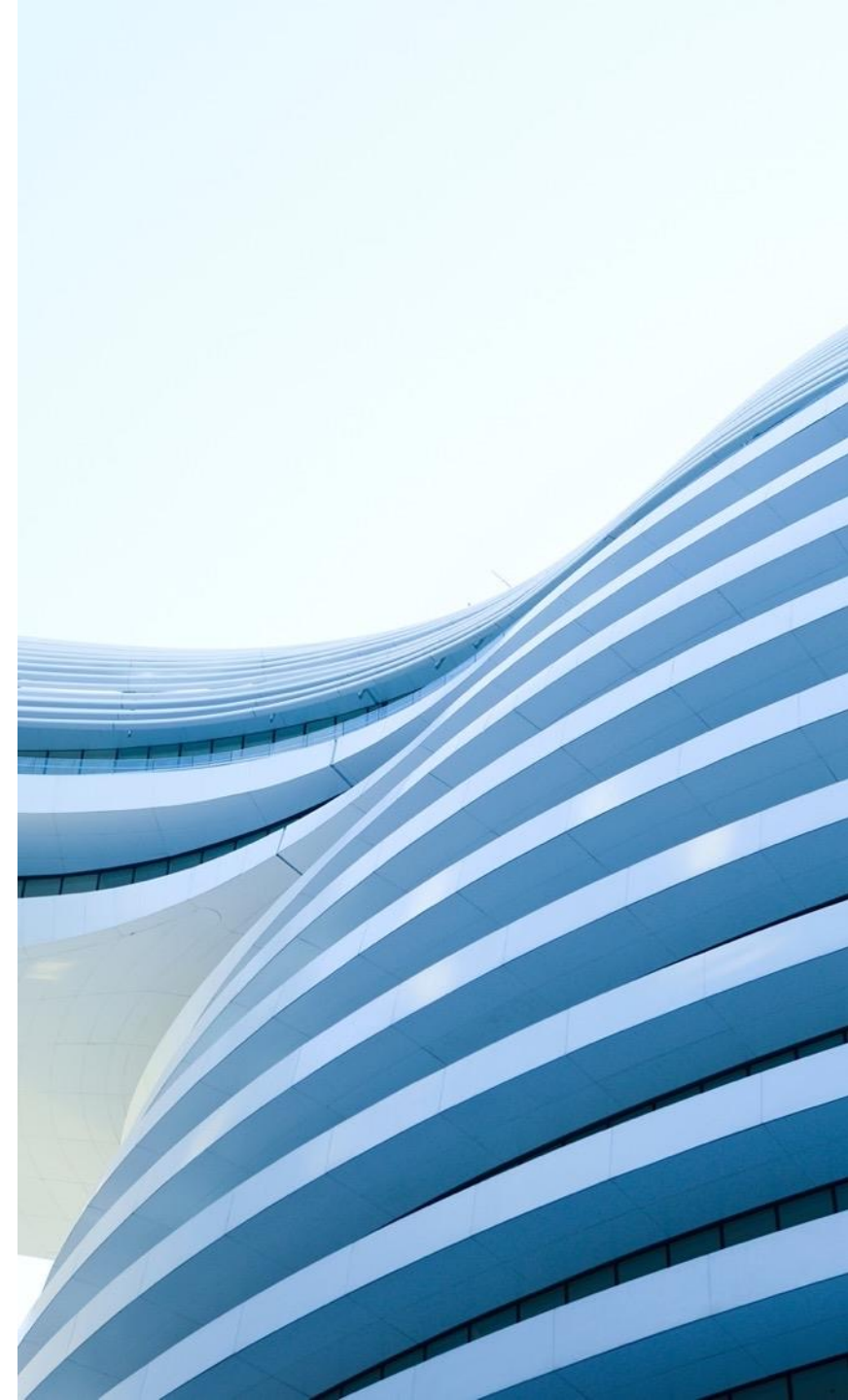
SAP Business Application Studio on SAP BTP

A **modern** development environment, **tailored** for efficient development of business applications for the **Intelligent Enterprise scenarios**
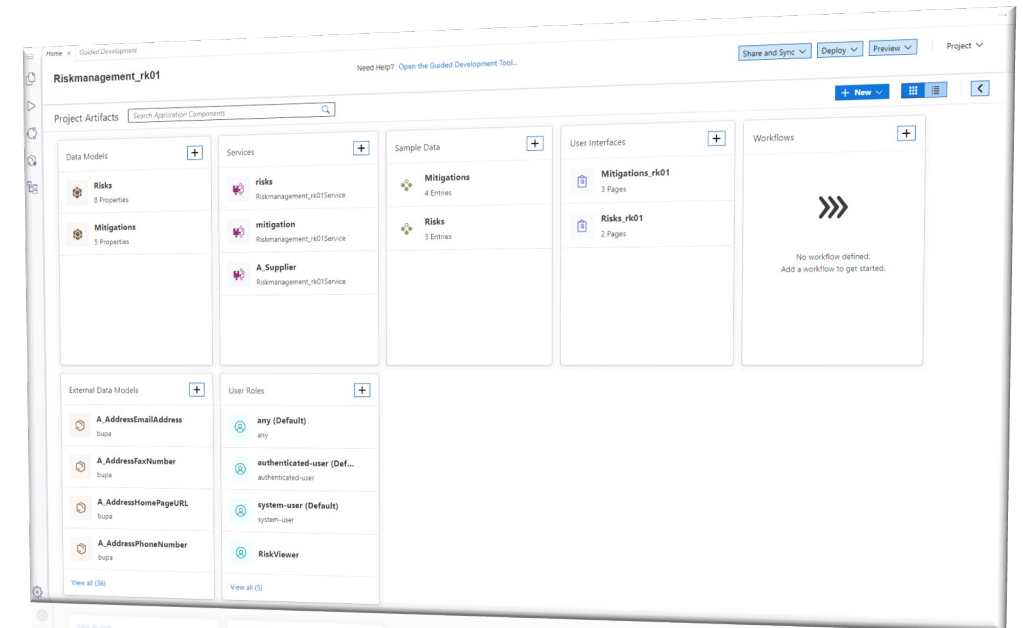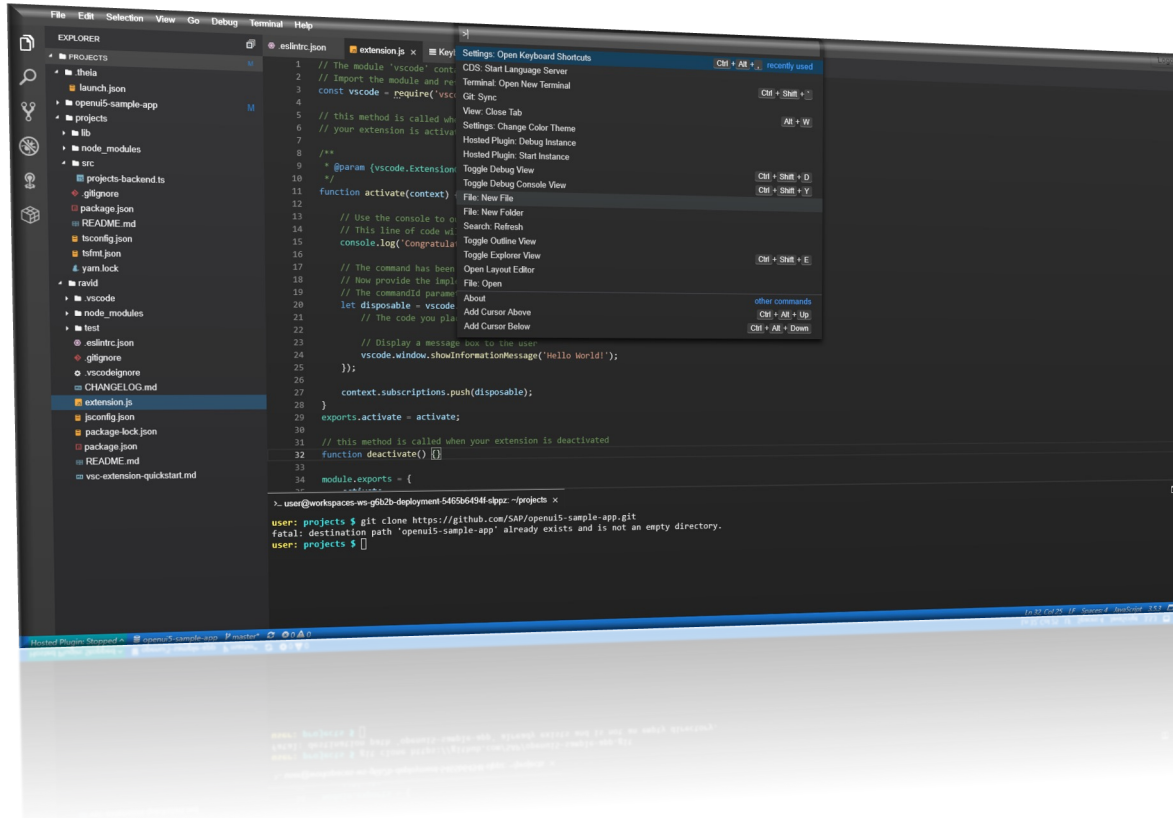
SAP Business Application Studio:

Professional Developer Tooling

Scale your Development and Build Smarter Enterprise Apps.

- Development environment, tailored for efficient development of business applications for the Intelligent Enterprise
- Easy path from visual tools to professional development tools

- Modern and intuitive web user interface
- Simplified, faster setup of the development environment
- Tight integration with SAP services, technologies, and systems

- Accelerated time to market with high-productivity development tools
- Based on industry best of breed IDE and tools, providing full, tool independent, developer flexibility

- #1 adopted SAP BTP service, across all channels, with thousands of paying customers
- Used daily by thousands of SAP customers as well as by SAP internal development teams

Modular Dev Spaces
Tailored for Intelligent Enterprise Development Use Cases

SAP Fiori: Develop SAP Fiori applications based on various environments, including Cloud Foundry, ABAP Cloud, and SAP S/4HANA.

Full Stack Applications with Productivity Toolkit: Easily develop, test, build, and deploy apps using the high productivity toolkit.

Full Stack Cloud Application: Build business services, business applications, and extend S/4HANA e.g. by using the SAP Cloud Application Programming Model, Fiori and Java or Node.js.

SAP HANA Native Application: Build and deploy native SAP HANA applications or analytical models.

SAP Mobile Application: The SAP Mobile Development Kit (MDK) lets you customize, deploy, and manage your customized iOS and Android apps in the cloud.

Basic: Contains the SAP basic tools extension.

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

SAP Business Application Studio - The Big Picture

Browser based access

Data Sources

Additional Extensions
- Workflow
- Open VSX
- Custom

SAP Business Application Studio

Dev-Space

Dev-Space
SAP Cloud Business Application

Dev-Space
SAP Fiori

Additional Extensions

Extensions (per scenario)
- SAPUI5
- Layout Editor
- LSP
- … and more

Development environment

File System

SAP BTP

Internet / Cloud

On-Premise

SAP BTP Cloud Foundry

SAP BTP ABAP

SAP S/4HANA Cloud

SAP HANA Cloud

On-prem ABAP

Source Control

git

SAP Fiori tools guides developers through the full cycle

Application Generator
Creates the project environment for development
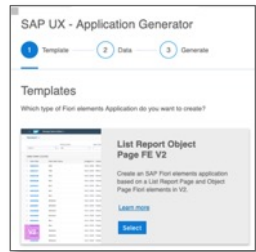
Page Map & Editor
Allows editing of the structure of the app: pages, properties, and navigation

Guided Development
Provides step-by-step development instructions and generates code snippets in-line
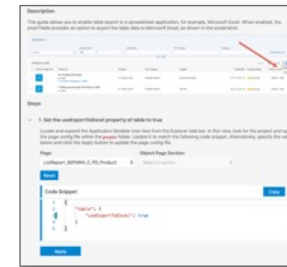
Application Preview
Provides preview of web app in the browser either with mock data or live data
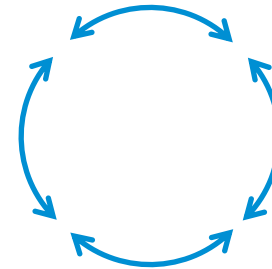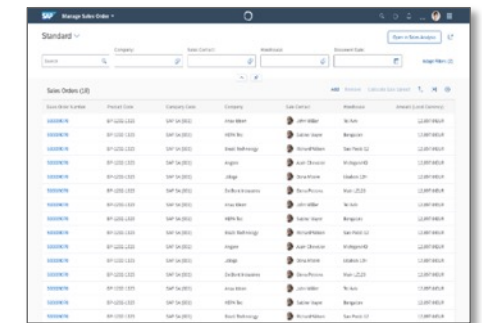
Service Modeler
Visualizes service entities, relations, properties, and annotations
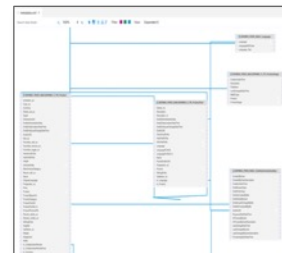
Code Completion
Delivers a language server protocol for annotations with micro-snippets and diagnostics

Available in
SAP Business Application Studio
and
Visual Studio Code

Key Capabilities of SAP Business Application Studio
Productive development environment for SAP centric development

One click preview and deployment

Low-code development perspective, with easy path to professional development tools

GIT based Project Sharing

Simplified Semantic Project view and edit

Guided Development

Visual Entity & Service Modeling using Cloud Application Programming Model
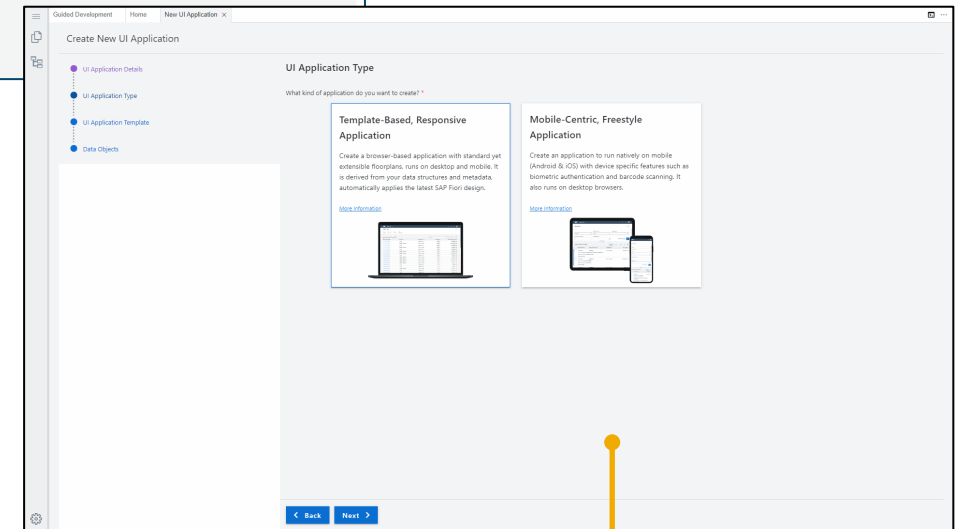
Low-Code Template-based and Freestyle UI Design

SAP Business Application Studio Demo

See how you can quickly create a mobile application for an incident scenario.

Watch the demo
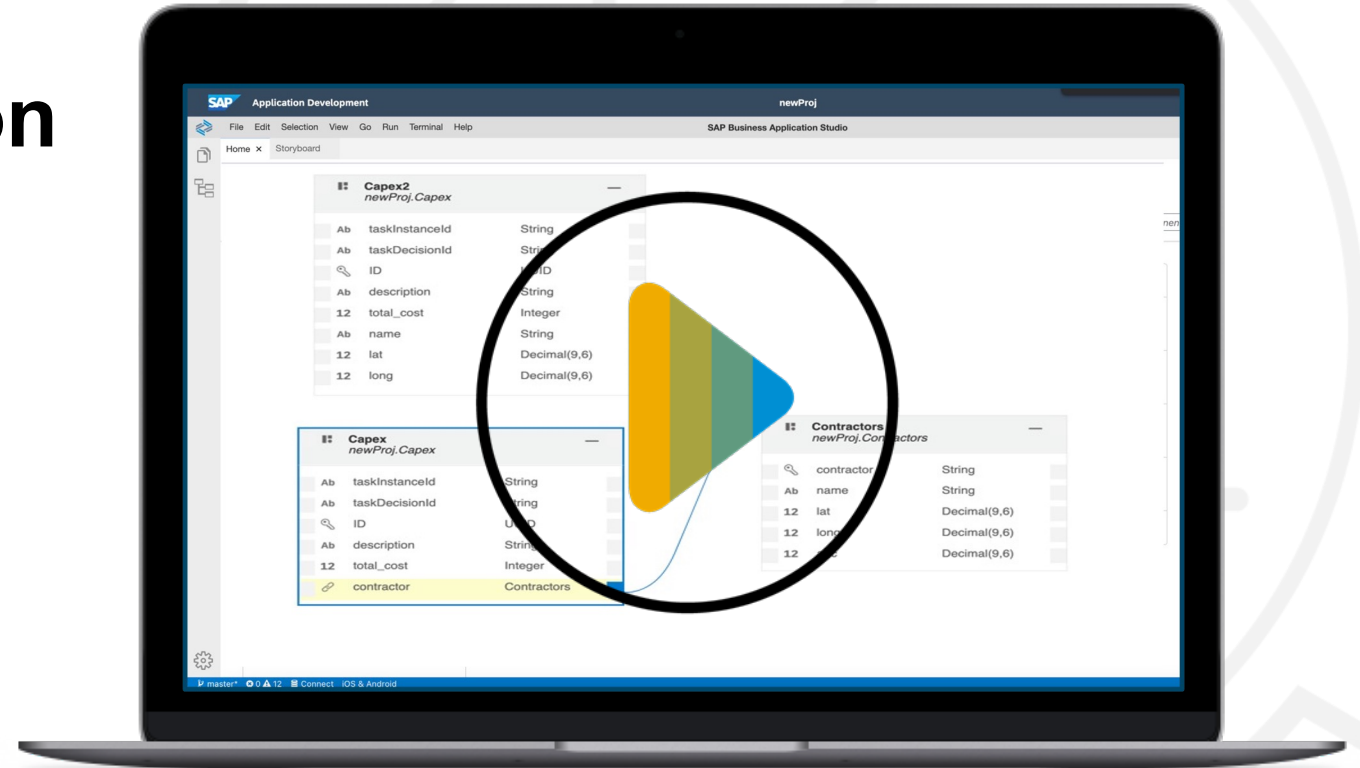
SAP Business Application Studio **Demo**

See how you can quickly create a capital expenditure application.

Watch the [demo](#)
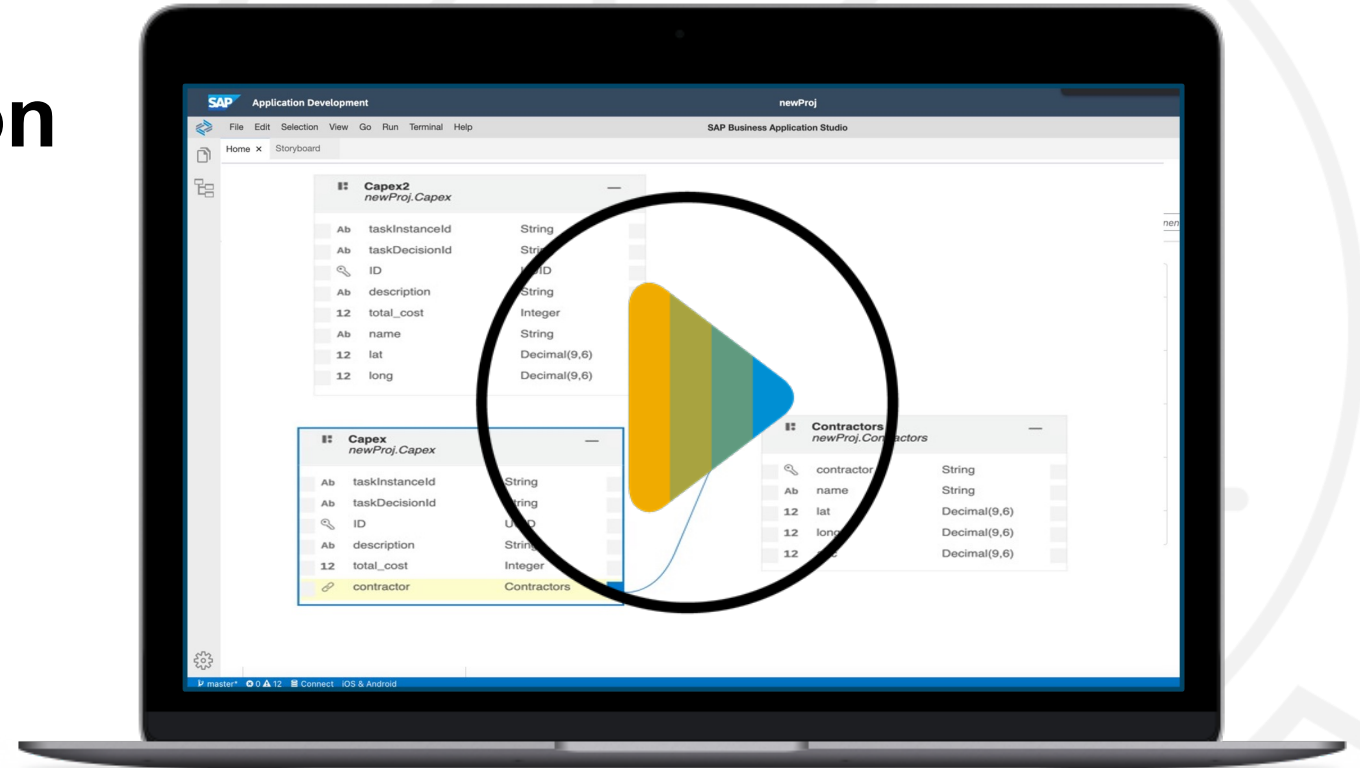
SAP Business Application Studio

SAP BTP Free-Tier / SAP BTP Trial -> SAP Business Application Studio

Recommended

1. Tutorial (BAS)
   Build an SAP Fiori App consuming Data from On-Premise

2. Tutorial (Fiori tools)
   Create a List Report Object Page App with SAP Fiori Tools

3. Tutorial (Flexible Programming Model)
   Boost Your Productivity in Developing SAP Fiori Apps

4. Tutorial (BAS Productivity Tools)
   Develop Full-Stack App Using the High Productivity Tools of BAS

5. Learning Journey (BAS Productivity Tools)
   Develop Full-Stack Apps Using Productivity Tools in SAP Business Application Studio

6. Video (Developing Cloud Apps – Big Picture)
   The Universe of SAP Business Technology Platform in a Nutshell – Cloud Native App Development

More missions / tutorials: SAP Discovery Center / Developer tutorials

Source: https://en.wikipedia.org/wiki/Marvin_the_Paranoid_Android

SAP Business Application Studio

Learn More!

Homepage: SAP Business Application Studio

Introduction Video

Central Info Blog

SAP Fiori tools

Homepage Low-code application development

Low-Code/No-Code Development Tools

Learning Journey: Low-Code / No-Code Applications and Automations for Citizen Developers

Blog post: SAP Gateway Demo System ES5

Contact information: SAPBusinessApplicationStudio@sap.com

Migration: Neo / SAP Web IDE   ->   Cloud Foundry / BAS

- Migrating Fiori Application from SAP Web IDE to SAP Business Application Studio (ABAP)

- Migrating SAP Fiori Applications from Neo to Cloud Foundry Using SAP Business Application Studio

- Migrating from the Neo Environment to the Multi-Cloud Foundation (Cloud Foundry and Kyma)

- Migrating Your CAP Applications from SAP Web IDE to SAP Business Application Studio

- SAP Fiori tools 2108 release simplifies integrating libraries and migrating Web IDE apps

- It's time to plan your move to SAP Business Application Studio

- Migrate SAP Fiori projects from SAP Web IDE to SAP Business Application Studio

Roles

Pro developer is a person who has the ability and expertise to create, maintain as well as upgrade software created for commercial purposes through writing lines of code

Citizen developer is a user who creates new business applications for consumption by others using development and runtime environments sanctioned by corporate IT

New Role

Administrator is a person who has the rights to manage the lifecycle of the applications, grant access, etc.
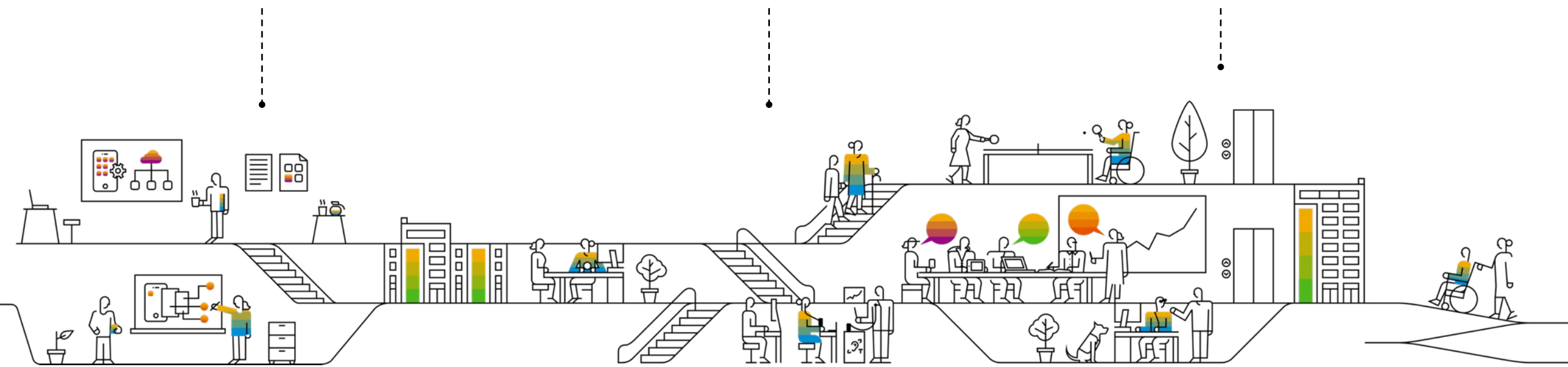
SAP Build

Create and Augment Enterprise Apps, Automate Processes, and Design Business Sites, All Visually

Build apps

Automate processes

Design business sites
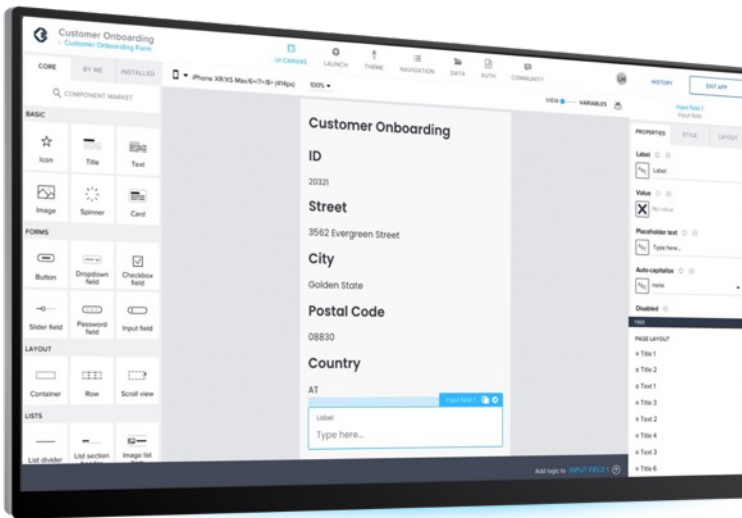
SAP Build Apps
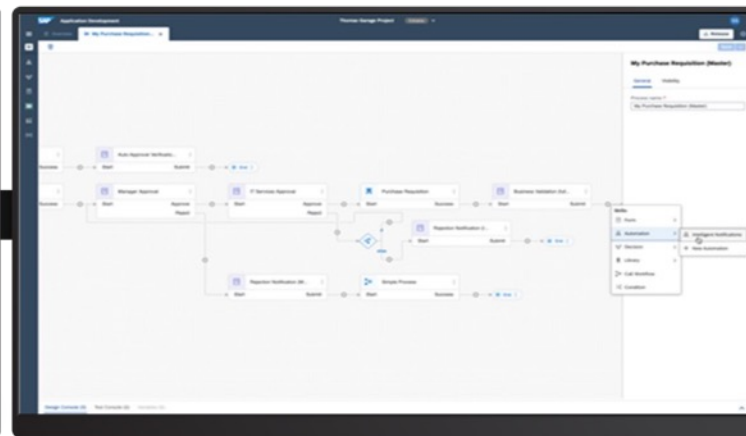
SAP Build Process Automation
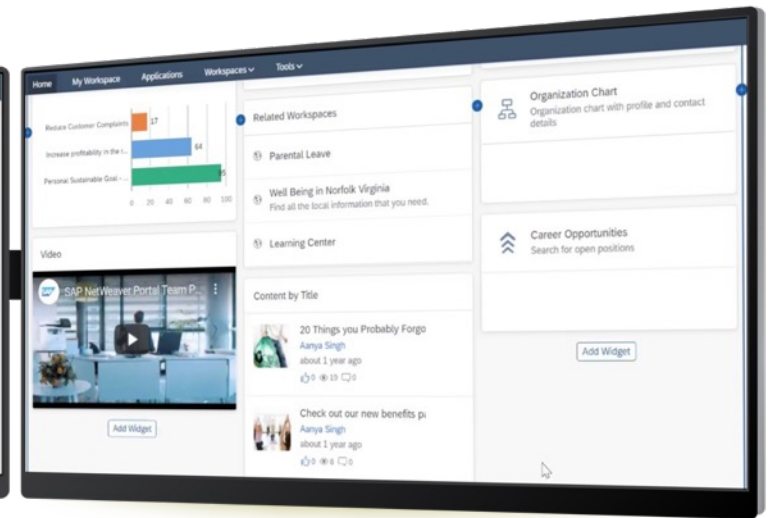
SAP Build Work Zone

Build Visually

Integrate Smoothly

Collaborate Effectively

SAP Build Apps

Build Full-Stack Enterprise-Apps in Minutes - Absolutely Zero Coding Required

Drag-and-drop the user interface
Access a pallet of user interface controls, drag them into place, and preview the final result in real time.
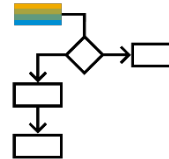
Create any logic without code
Drag-and-drop any logic function – sensors, file operations, data functions, animations, and more – onto a canvas.

Easily integrate data
Easily add your own data integrations or get started with some of ours.

Get started today

Meet your organization's requirements as fast as your business needs.

Build applications and extend SAP systems faster than ever before. To learn more, click the links below.

Test and Evaluation
- SAP Business Application Studio is available for test and evaluation on SAP BTP Free-Tier / SAP BTP Trial environment
- Find available missions in SAP Discovery Center / developer tutorials

Partner & Customer Licenses
- Available in consumption and subscription based pricing

- Join SAP Business Application Studio Community
- SAP's low-code/no-code homepage
- Explore SAP Business Application Studio on Partner Portal
- SAP Build Apps Learning Journey

SAP Fiori for Mobile - Native mobile experience for iOS and Android
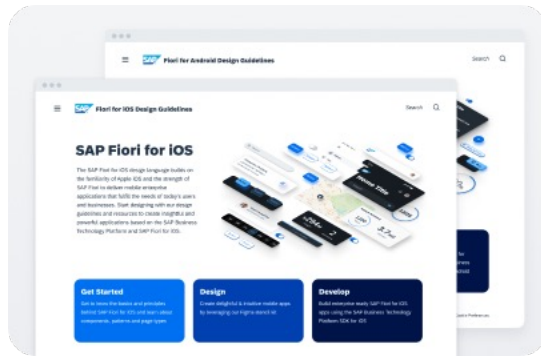
Design Guidelines

Android   iOS
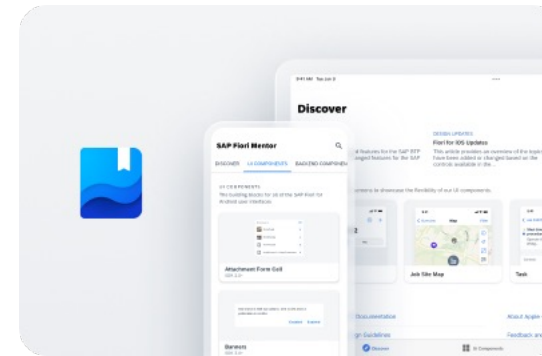
SAP Fiori Mentor App for iOS and Android

Android & iOS
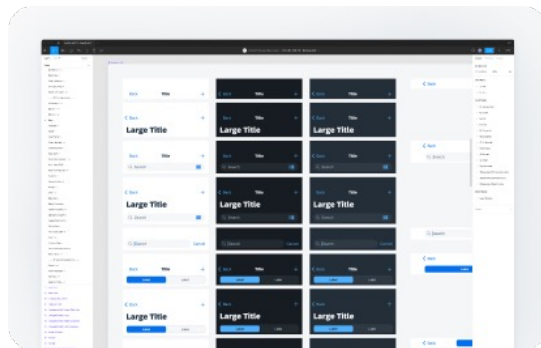
Design Stencil Kits

Android   iOS
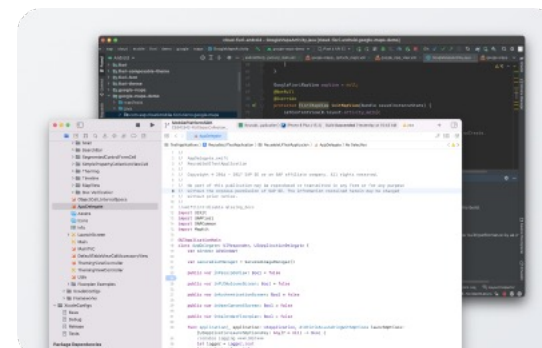
Software Development Kits

Android   iOS   MDK

SAP Mobile Services
Native App Development – SAP BTP SDK for Android

Empower designers and developers with tools to **quickly and efficiently** build Android apps for the enterprise

Enable apps with native Android look and feel **high performance**

Accelerate development with APIs for enterprise communications, security, encryption & onboarding

Innovate by taking advantage of rich **Android device features** like Fingerprint Scanner, location services and notifications
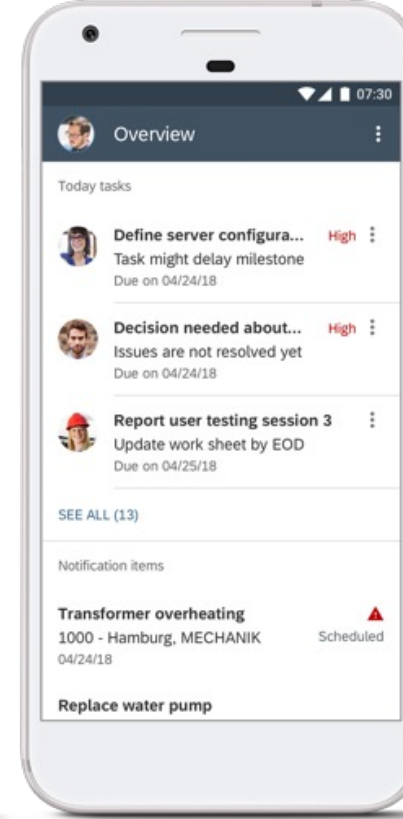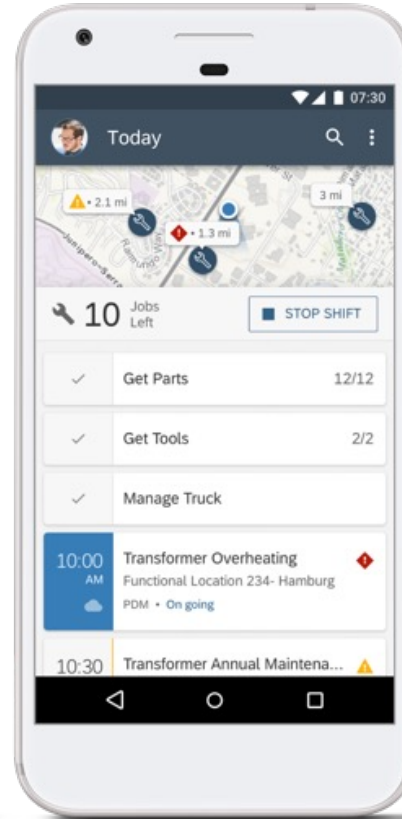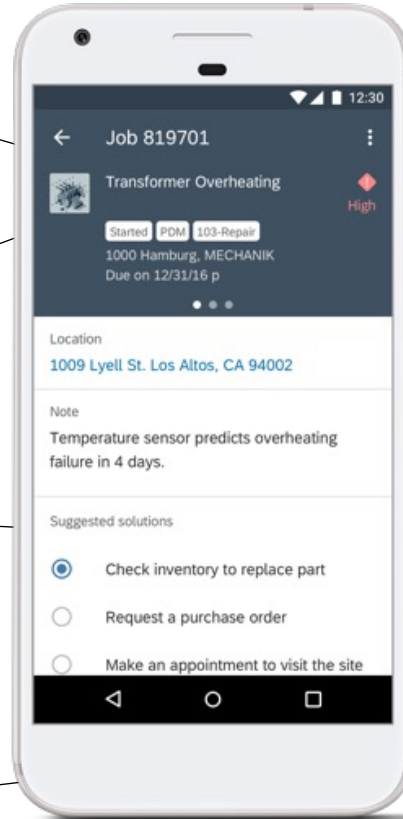
SDK for Android accelerates enterprise app development in Android Studio IDE

Rich set of UI controls, implementing **SAP Fiori for Android design language**

SDK **Wizard** automatically **generates** fully running app scaffolding by reading metadata from backend enterprise APIs

SAP Fiori Mentor for Android

SAP Mobile Services
Native App Development – SAP BTP SDK for iOS

Benefits

Empower designers and developers with tools to **quickly and efficiently** build iOS apps for the enterprise

Enable apps with native iOS look and feel **high performance**

Accelerate development with UI controls, frameworks and tools

Innovate by taking advantage of rich **iOS device features** like ARKit, CoreML, location services and notifications
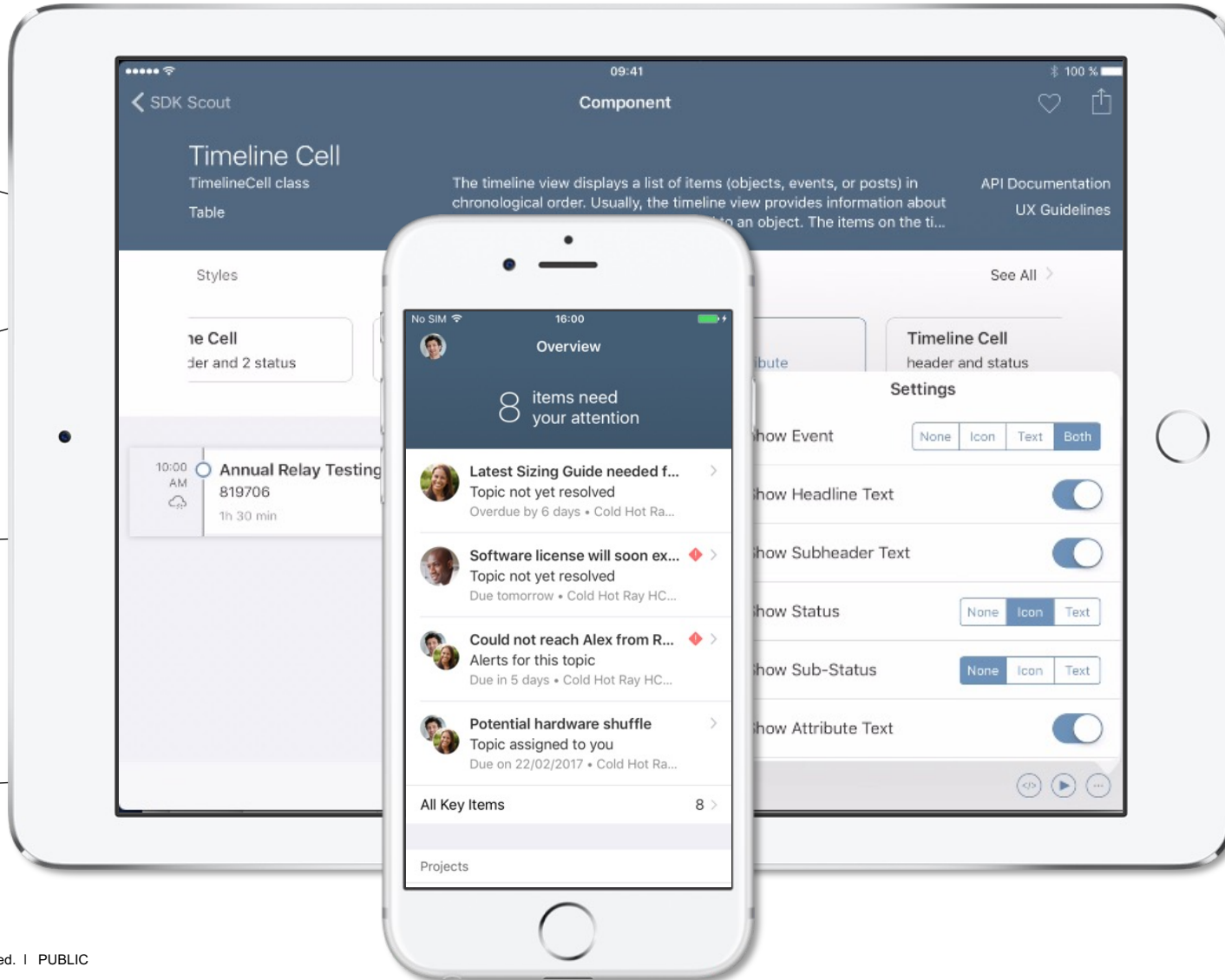
Capabilities

Swift-based SDK for iOS incl. UI controls, frameworks for data access, security, supportability

SAP Fiori for iOS design language

SDK Assistant automatically **generates** fully running app scaffolding by reading metadata from backend enterprise APIs

SAP Fiori Mentor app generates customized UI code snippets for Fiori controls

SAP Mobile Services
Mobile Development Kit
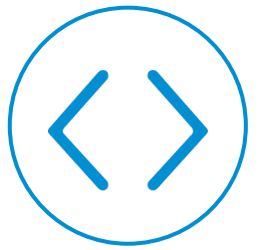
Build, customize, and administer native mobile applications in a highly productive, metadata-driven model

Reduce app development costs and increase productivity with a simple, low-code tool

Customize selected pre-built SAP apps (SAP Asset Manager, etc.) to your business needs

Relieve maintenance burden with easy **lifecycle management**

Easily manage **security** across apps

Visual development of pages, data queries, and business logic

Robust **offline and online support**

Native SAP Fiori user experience

Extend functionality with custom extension controls

Cross-platform development supports iOS and Android

Web- Deployment

Create app configuration in Mobile Services → Use template to generate first metadata → Modify app metadata → Deploy

SAP Fiori User Experience Enabled by Technologies & Tools

Teaching concept

	Developer	Citizen Developer	Key User	Business User

Pro-Code   **Develop/ Extend/ Deploy**   **Low-Code No-Code**   **Adapt**   **Desktop / Web** SAPUI5 SAP GUI for HTML, Web Dynpro   **Run**   **Mobile** Native Android / iOS

Local Laptop	SAP Business Technology Platform		SAP Screen Personas (SAP GUI / WD ABAP)	SAP Business Technology Platform	
Visual Studio Code (non-ABAP) SAP Fiori tools	SAP Business Application Studio SAP Fiori tools	SAP Build Apps	SAPUI5 Flexibility	SAP Work Zone	SAP Fiori launchpad
ABAP Development Tools in Eclipse	SDK for iOS / Android	Mobile Development Kit			SAP Mobile Start

Backend

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	
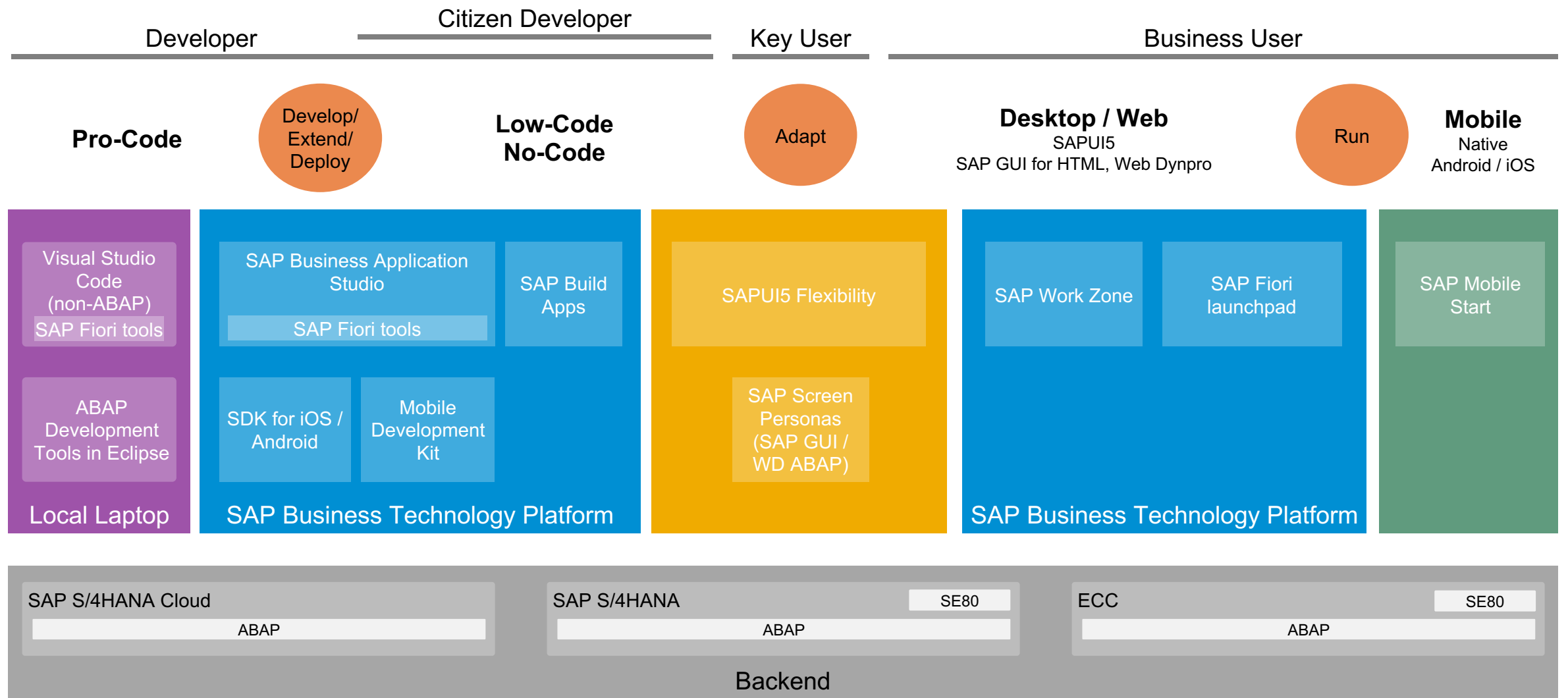
SAP Fiori User Experience Enabled by Technologies & Tools

Developer

Pro-Code

Develop/
Extend/
Deploy

Visual Studio
Code
(non-ABAP)
SAP Fiori tools

ABAP
Development
Tools in Eclipse

Local Laptop

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

Backend
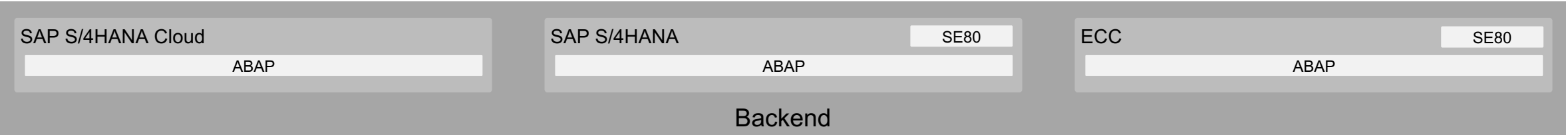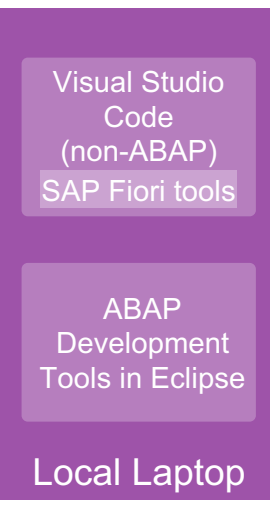
Local Development Environments:
Visual Studio Code (VSCode) & ABAP Development Tools (ADT) / Eclipse

Visual Studio Code and SAP Business Application Studio

Visual Studio Code

- Provides development flexibility with **offline** capabilities

- Features a **developer-controlled**, highly configurable development environment

- Allows access to thousands of extensions from the Visual Studio Code marketplace

- Is part of a fast-growing open source community

SAP Business Application Studio

- Provides a **managed**, preconfigured, **hosted environment**, optimized for SAP application development (including client and server side extensions).

- Can be **centrally administrated** with tools repositories, systems access and company policies

- Integrates with existing SAP solutions, systems & services

- [Easy access to Visual Studio Code-compatible extensions](#) from VSCode

Efficient ABAP development in Eclipse©
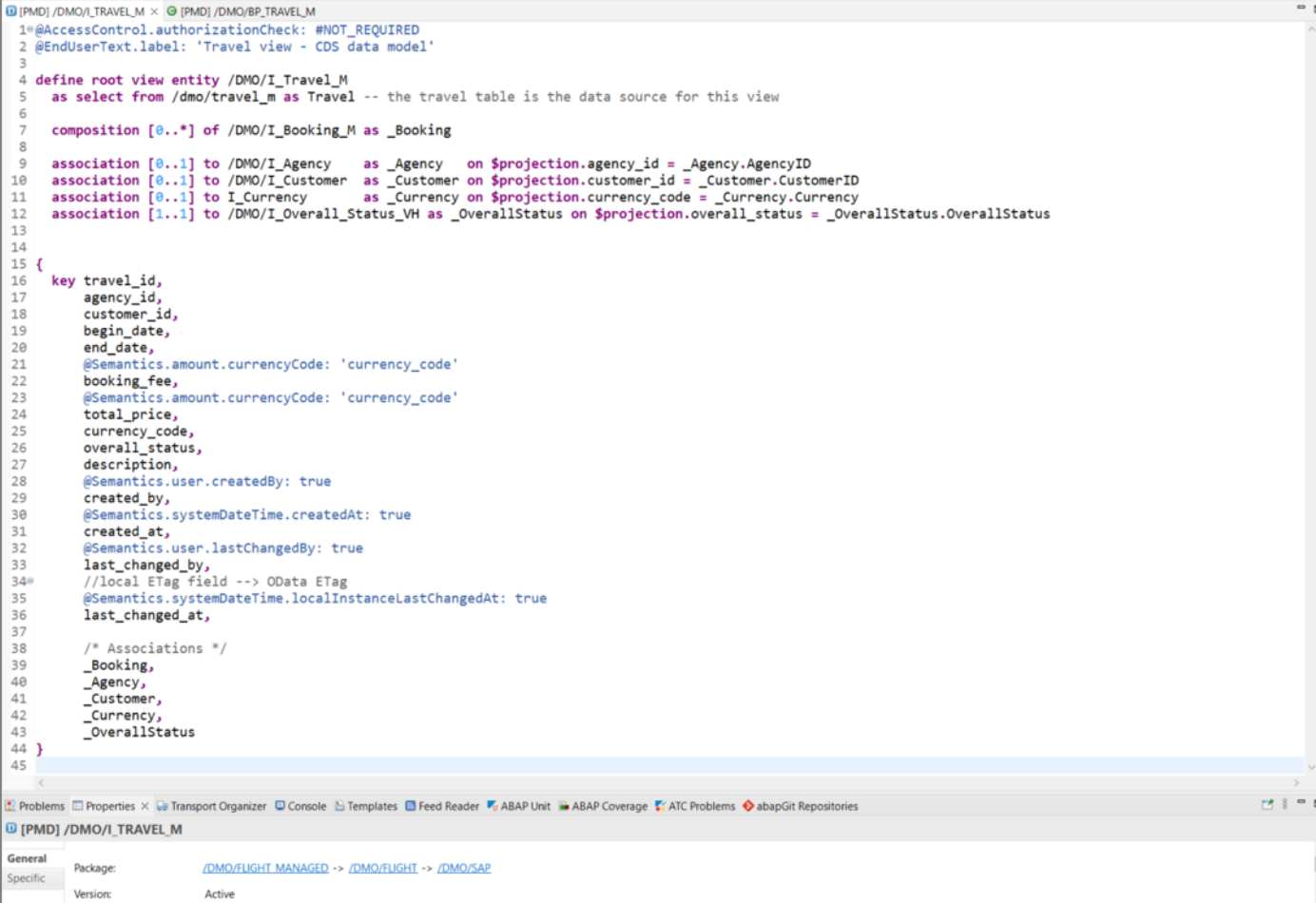
MODERN DEVELOPMENT TOOLSET

Fully eclipse-based
Syntax check, Code completion
Syntax highlighting, Pretty printing
Navigation, Search, Quick Fixes
Available for ABAP releases ≥ 7.31

QUALITY ASSURANCE

Static code checks (ATC, CVA) with remote and local scenarios
Unit testing incl. isolation frameworks
Test seams and injections

SUPPORTABILITY

Debugging, profiling, tracing
Static and dynamic logging
Runtime monitoring and analysis


```
[PMD] /DMO/I_TRAVEL_M  ×   [PMD] /DMO/BP_TRAVEL_M

1  @AccessControl.authorizationCheck: #NOT_REQUIRED
2  @EndUserText.label: 'Travel view - CDS data model'
3
4  define root view entity /DMO/I_Travel_M
5    as select from /dmo/travel_m as Travel -- the travel table is the data source for this view
6
7    composition [0..*] of /DMO/I_Booking_M as _Booking
8
9    association [0..1] to /DMO/I_Agency     as _Agency    on $projection.agency_id = _Agency.AgencyID
10   association [0..1] to /DMO/I_Customer  as _Customer on $projection.customer_id = _Customer.CustomerID
11   association [0..1] to I_Currency        as _Currency on $projection.currency_code = _Currency.Currency
12   association [1..1] to /DMO/I_Overall_Status_VH as _OverallStatus on $projection.overall_status = _OverallStatus.OverallStatus
13
14
15 {
16   key travel_id,
17       agency_id,
18       customer_id,
19       begin_date,
20       end_date,
21       @Semantics.amount.currencyCode: 'currency_code'
22       booking_fee,
23       @Semantics.amount.currencyCode: 'currency_code'
24       total_price,
25       currency_code,
26       overall_status,
27       description,
28       @Semantics.user.createdBy: true
29       created_by,
30       @Semantics.systemDateTime.createdAt: true
31       created_at,
32       @Semantics.user.lastChangedBy: true
33       last_changed_by,
34       //local ETag field --> OData ETag
35       @Semantics.systemDateTime.localInstanceLastChangedAt: true
36       last_changed_at,
37
38       /* Associations */
39       _Booking,
40       _Agency,
41       _Customer,
42       _Currency,
43       _OverallStatus
44 }
45
```

Problems Properties × Transport Organizer Console Templates Feed Reader ABAP Unit ABAP Coverage ATC Problems abapGit Repositories

[PMD] /DMO/I_TRAVEL_M

General
Specific

Package: /DMO/FLIGHT MANAGED -> /DMO/FLIGHT -> /DMO/SAP
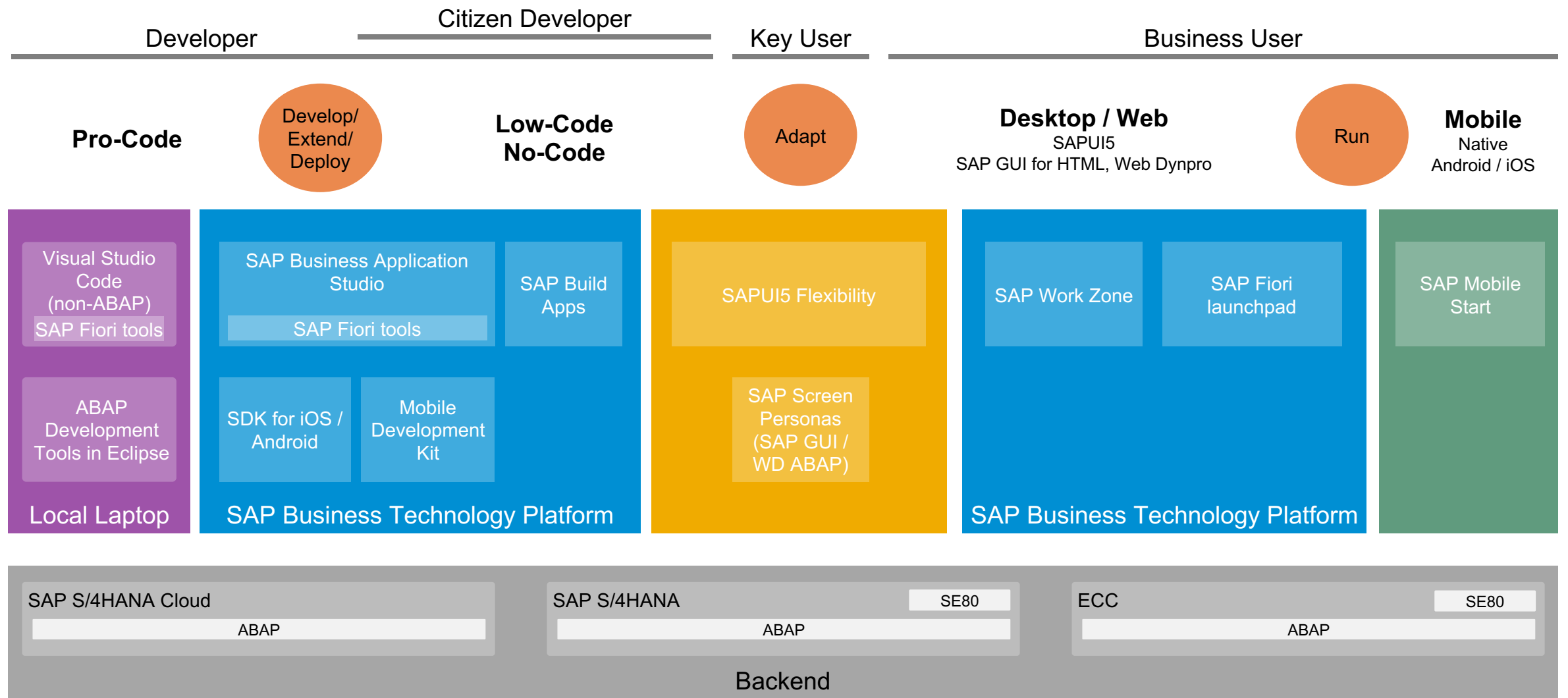Version: Active

Local Development Environments
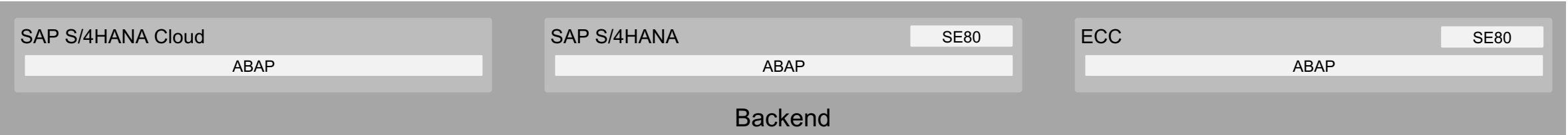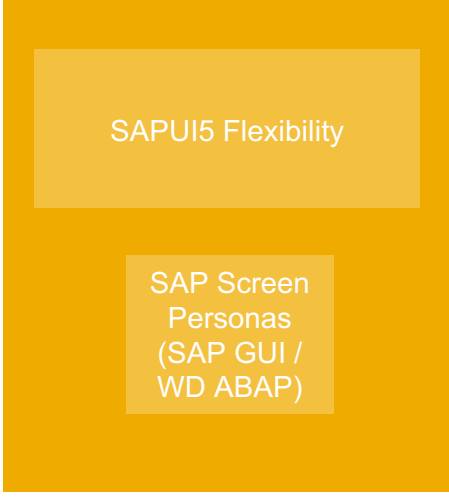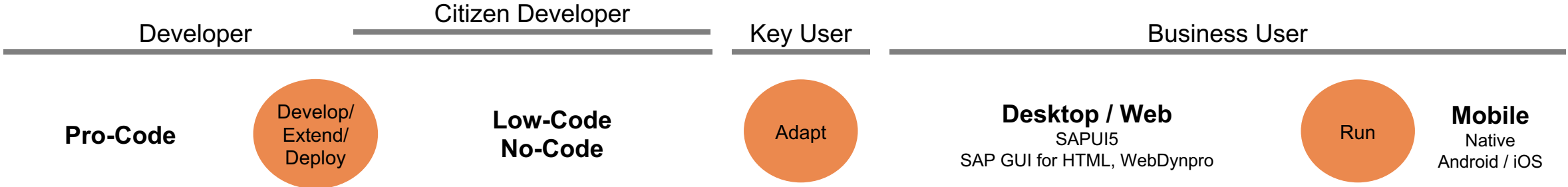
[Set Up SAP Fiori Tools in Your Visual Studio Code](#)

[Install ABAP Development Tools (ADT) in Eclipse](#)

Source: https://en.wikipedia.org/wiki/Marvin_the_Paranoid_Android

SAP Fiori User Experience Enabled by Technologies & Tools

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SAP GUI for HTML, Web Dynpro

Run

Mobile
Native
Android / iOS

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SAP Business Technology Platform
- SAP Work Zone
- SAP Fiori launchpad

- SAP Mobile Start

Backend

| SAP S/4HANA Cloud | | | SAP S/4HANA | SE80 | ECC | SE80 |
| ABAP | | | ABAP | | ABAP | |

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Citizen Developer

Key User

Business User

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SAPUI5
SAP GUI for HTML, WebDynpro

Run

Mobile
Native
Android / iOS

SAPUI5 Flexibility

SAP Screen
Personas
(SAP GUI /
WD ABAP)

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

Backend

Extending / Adapting SAP Standard Apps:
SAPUI5 Flexibility & SAP Screen Personas

SAP Fiori Apps Reference Library

Library of all SAP content for the SAP Fiori launchpad. Explore, plan, and implement SAP Fiori apps as well as classic applications based on SAP GUI and WebDynpro.

- Overview of all SAP Fiori apps

- Information for each app, including technical data for installation and configuration

- Configuration information required to integrate classic SAP GUI and WebDynpro applications into the SAP Fiori launchpad

- Data for previous app versions

- Direct navigation to related resources, such as app documentation, Product Availability Matrix, and Maintenance Planner

- Recommendations for SAP Fiori apps for your needs

SAP Fiori Apps Reference Library

Choose the path to the SAP Fiori user experience based on your needs

I need to adapt an existing SAP Fiori app

I need a new custom app

Yes — SAPUI5 app — **No**

Build app using

SAP Fiori elements — Flexible Programming Model — **SAPUI5 freestyle**

Adapt using **SAPUI5 flexibility**

Adapt using **SAP Screen Personas**

Accelerate development with **SAP Fiori tools**
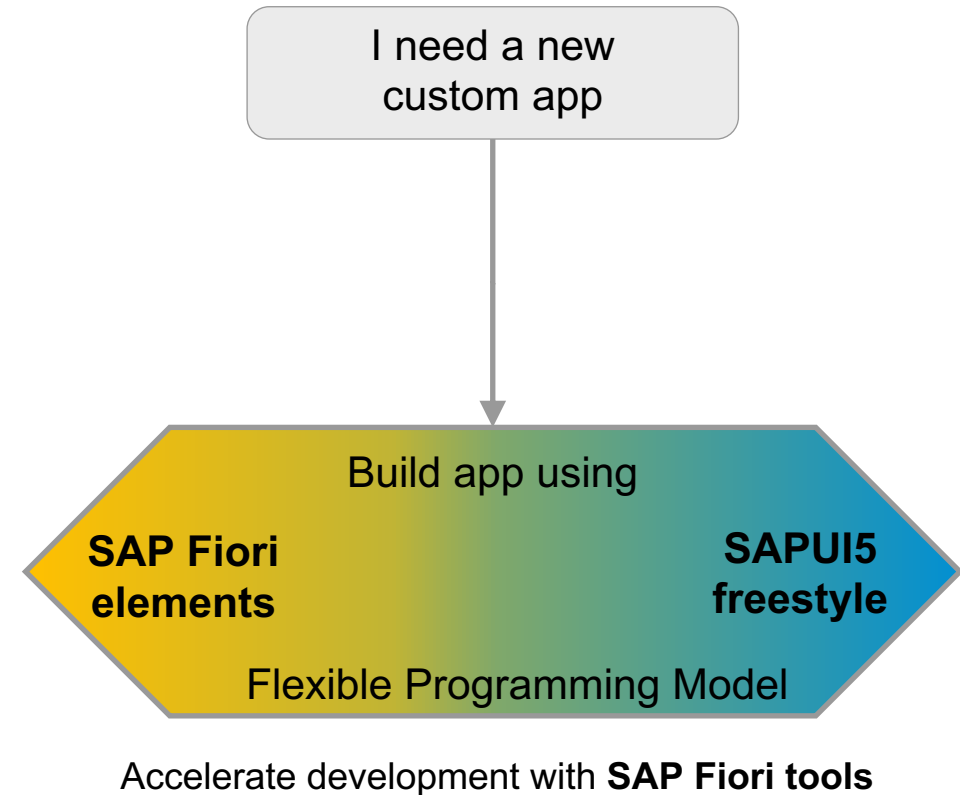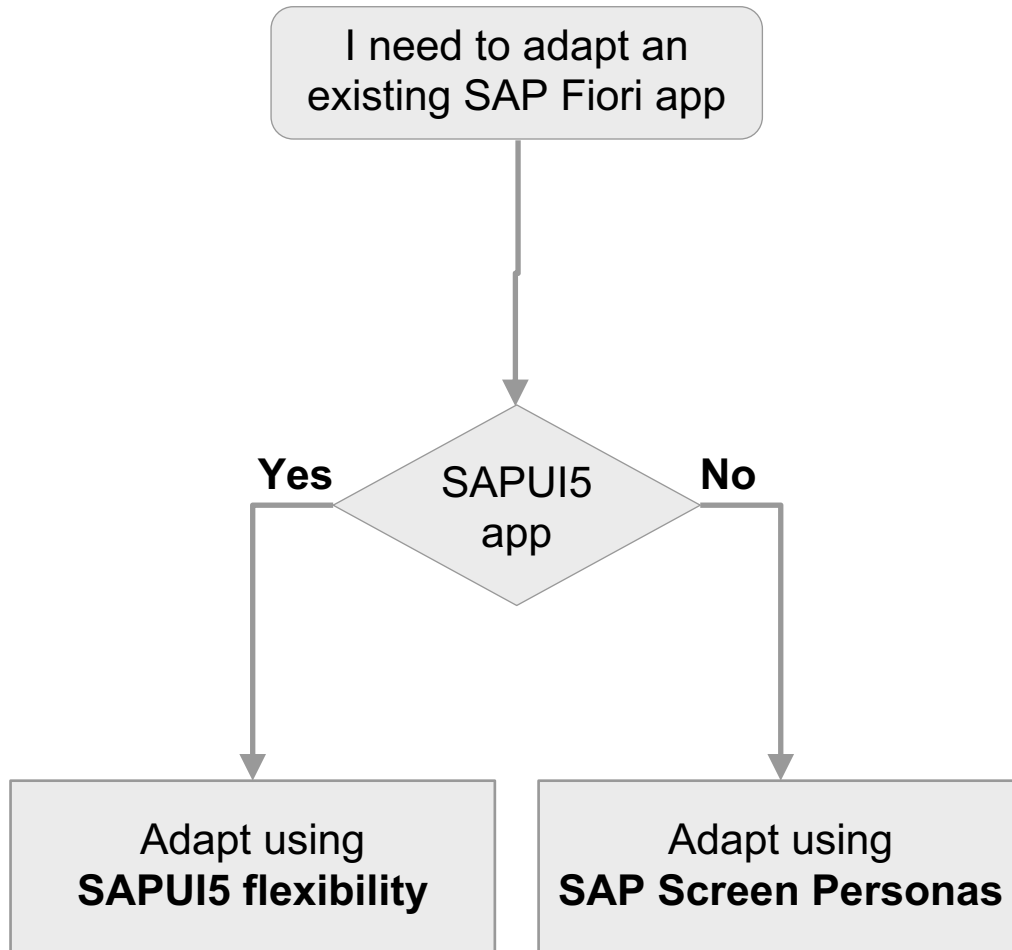
Using SAPUI5 flexibility to deliver a tailored user experience

Adapt standard applications for your own use cases in a **cost-efficient** way

Add **extensions wherever needed** compared to classical "extension points"

Benefit from **standard upgrades** while keeping extensions functional

Explore **intuitive tooling** tailored for different personas
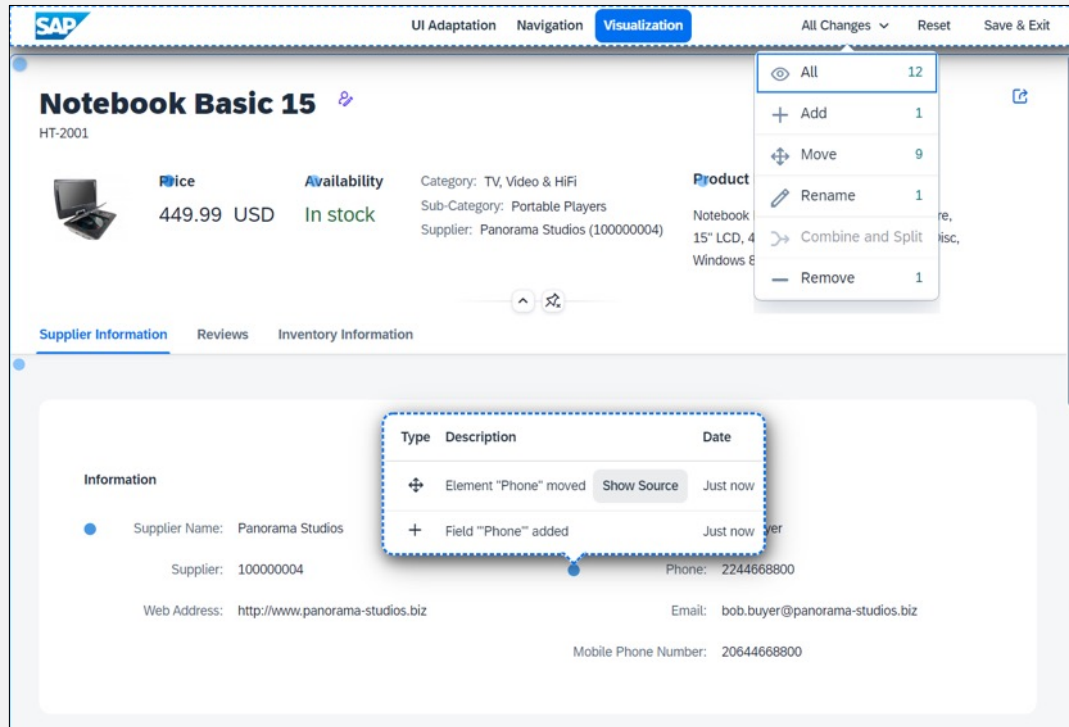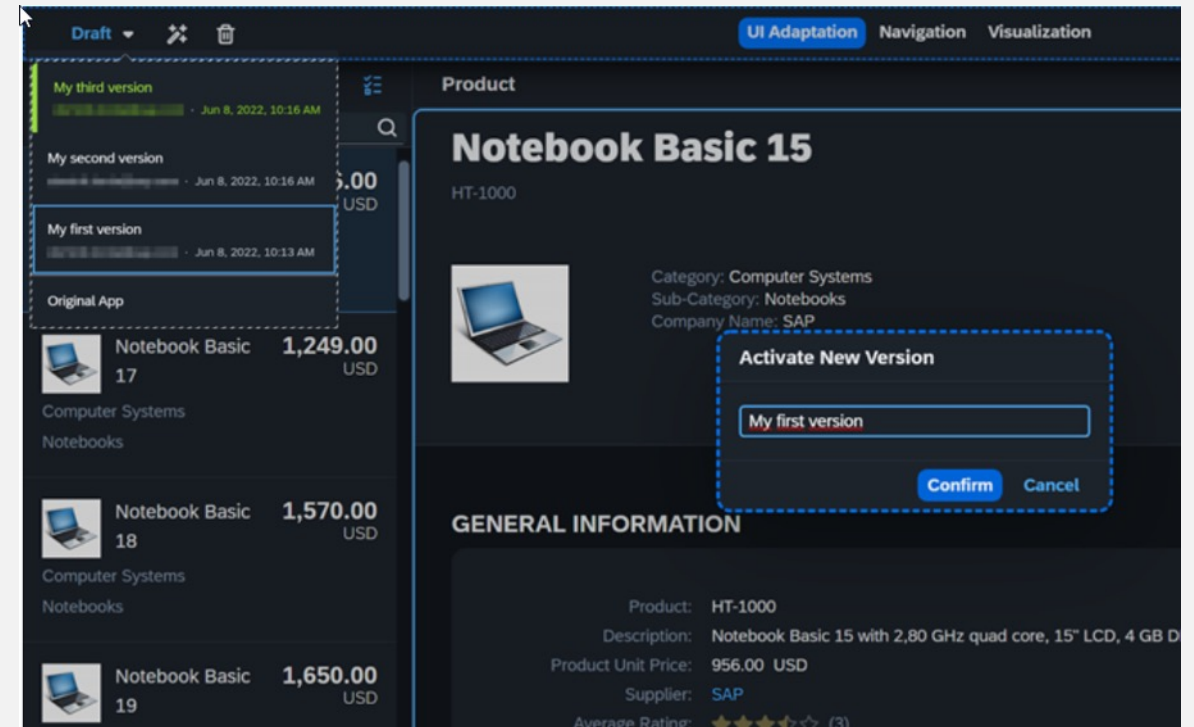
Developer

Key user
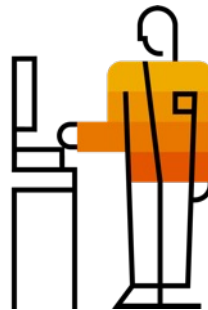
End user

Key user adaptation – Change visualization & Version history

Key users can visualize and manage their changes in an easy-to-understand way.

Key users work with draft adaptations to activate them once reviewed. A version history keeps track of how, when and by whom the app was changed.

Learn more: Easily manage your key user adaptations with SAPUI5 flexibility/ and Key User Adaptation in SAP Launchpad service is available out-of-the-box

Developer adaptation with SAPUI5 flexibility

Adaptation projects allow developers to create code-based extensions of standard applications.

Extension project in SAP Web IDE	**Adaptation project** in SAP Business Application Studio
Leveraging SAPUI5 extension points, controller hooks	Leveraging SAPUI5 flexibility
Extend only in predefined extension point	Extend anywhere, no extension point needed
Does not support SAP Fiori elements applications	Supports SAP Fiori elements as well as SAPUI5 freestyle
Limited options (e.g. no extend of lifecycle methods)	Increased options
One layer only	Multiple layers: Customer -> Industry -> Core (planned)

Migrate from SAP Web IDE to SAP Business Application Studio: Blog post & Mission

SAP is planning to enable the extension pane in BAS in on-prem scenarios for existing extension projects and for apps not enabled for adaptation projects.

SAP Screen Personas simplifies complex classic ERP screens

Benefits

Improve business productivity

Increase SAP adoption by making screens easier to use

Decrease training time for SAP users with intuitive screens

Enhance user satisfaction

Reduce the cost of personalization compared to custom coding

Capabilities

Hide / rearrange screen elements, reduce scrolling

SAP Fiori design creation for custom or standard transactions, including SAP S/4HANA; embed into SAP Fiori launchpad

Adapt Dynpro or Web Dynpro ABAP screens

Pre-filled fields & pull-down menus as well as automation of repetitive tasks

Slipstream Engine renders flavors on desktop, tablet, or mobile phone

www.sapscreenpersonas.com

Extending SAP standard apps: SAPUI5 Flexibility & SAP Screen Personas

SAP Screen Personas - SAP Community topic page

SAPUI5 Flexibility - All You Need to Know

https://ui5.sap.com > Demo apps > SAPUI5 flexibility demo apps

Source: https://en.wikipedia.org/wiki/Marvin_the_Paranoid_Android

Extending / Adapting SAP standard apps
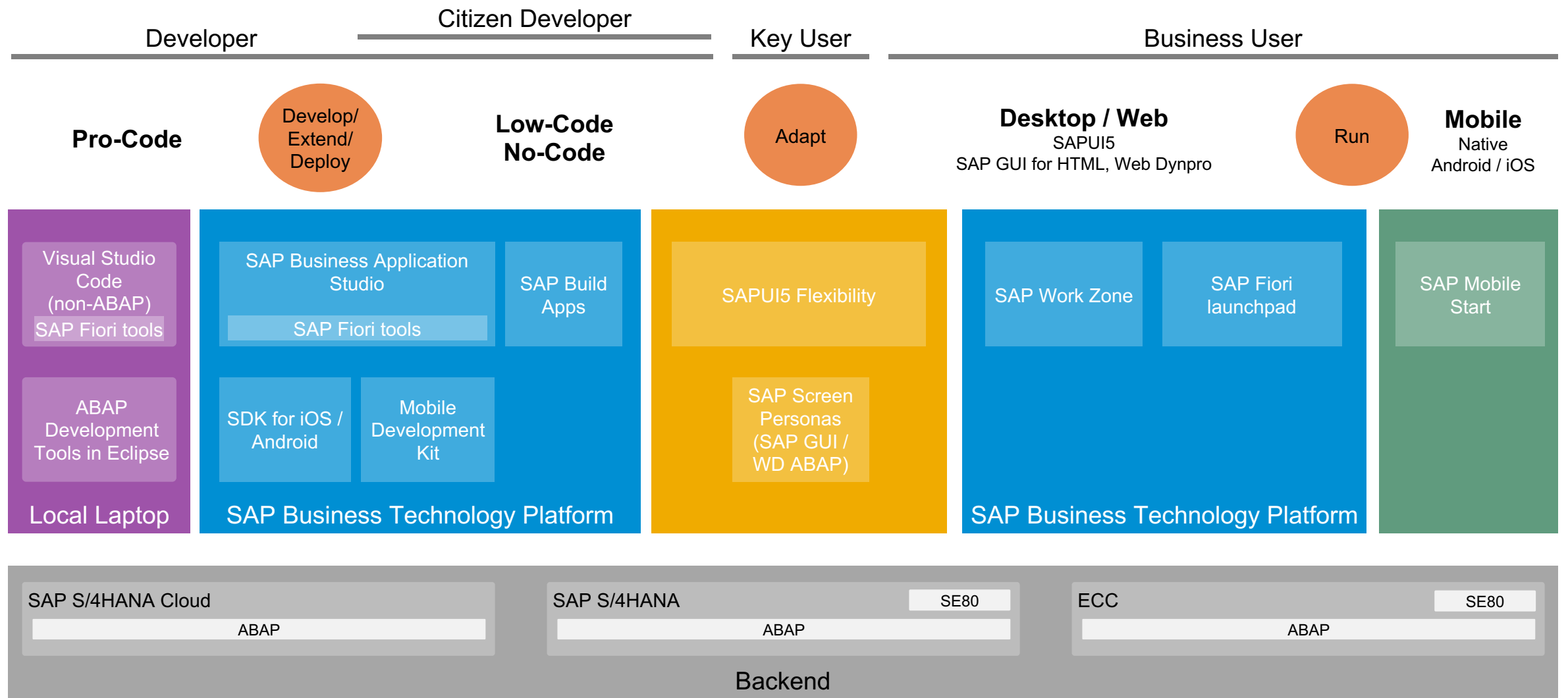
SAPUI5 Flexibility
- ➤ [SAPUI5 Flexibility - All You Need to Know](#)
- ➤ [Blog post: Extending SAP-delivered SAP Fiori elements apps using adaptation projects](#)
- ➤ [Blog post: SAP Fiori Elements: Adaptation Project – Adding a Custom Filter to the List Report](#)

SAP Screen Personas
- ➤ [Tutorials: Get Started with SAP Screen Personas](#)

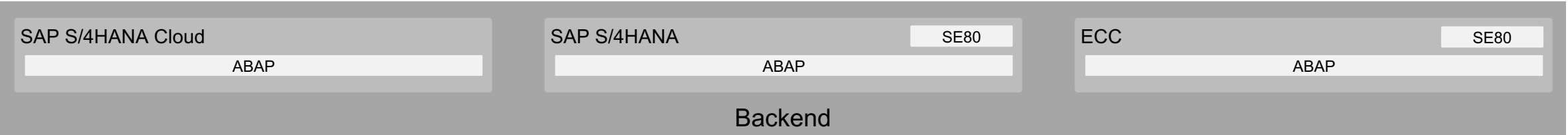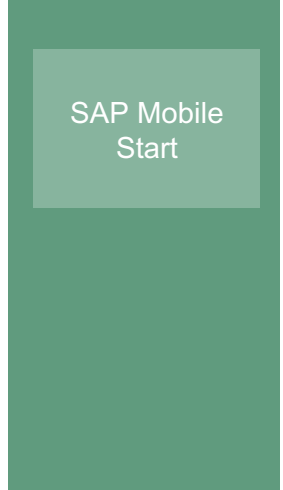# SAP Fiori User Experience Enabled by Technologies & Tools

Teaching concept

Developer   **Citizen Developer**   **Key User**   **Business User**

Pro-Code   Develop/ Extend/ Deploy   **Low-Code No-Code**   Adapt   **Desktop / Web** SAPUI5 SAP GUI for HTML, Web Dynpro   Run   **Mobile** Native Android / iOS

Local Laptop	SAP Business Technology Platform			SAP Business Technology Platform	
Visual Studio Code (non-ABAP)	SAP Business Application Studio	SAP Build Apps	SAPUI5 Flexibility	SAP Work Zone	SAP Fiori launchpad
SAP Fiori tools	SAP Fiori tools				
ABAP Development Tools in Eclipse	SDK for iOS / Android	Mobile Development Kit	SAP Screen Personas (SAP GUI / WD ABAP)		

SAP Mobile Start

Local Laptop   **SAP Business Technology Platform**   **SAP Business Technology Platform**

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

Backend

SAP Fiori User Experience Enabled by Technologies & Tools

Business User

Run

Mobile
Native
Android / iOS

SAP Mobile Start

SAP S/4HANA Cloud		SAP S/4HANA	SE80	ECC	SE80
ABAP		ABAP		ABAP	

Backend

SAP Mobile Start

Native entry point to the Intelligent Enterprise Suite

Start screen
Latest notifications,
& app suggestions
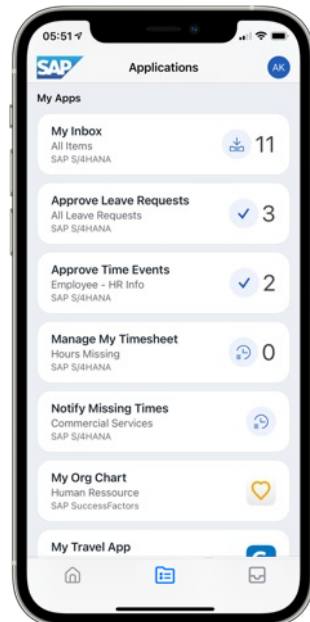
Applications
Native apps,
Web responsive apps,
Web links & News feeds
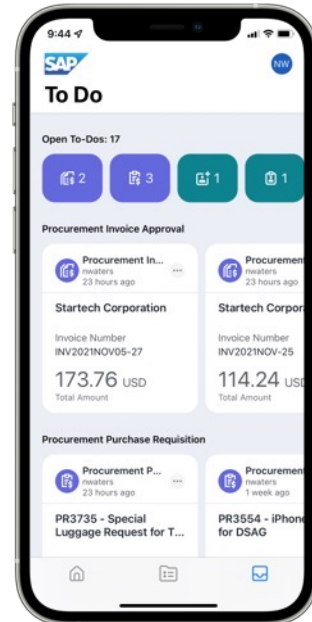
ToDo screen
Tasks and Notifications

Mobile device integration (Android, iOS)

Road Map for 2023*:

Support for Situation Handling for SAP S/4HANA

Widgets iOS Spotlight Search Notifications

New! Watch Companion App for iOS

Complications*
Monitoring information and number of tasks

To Dos
List of your To Dos, with details and filter option

Take Action
Take action on suitable tasks right from your watch

Monitoring Info
Get your monitoring info on your watch

SAP S/4HANA

SAP Ariba

SAP SuccessFactors

SAP Fieldglass

SAP Concur

SAP Customer Experience

*This is the current state of planning and may be changed by SAP at any time without notice.

85

SAP Mobile Start

Video: SAP Mobile Start – Your native entry point to the Intelligent Enterprise
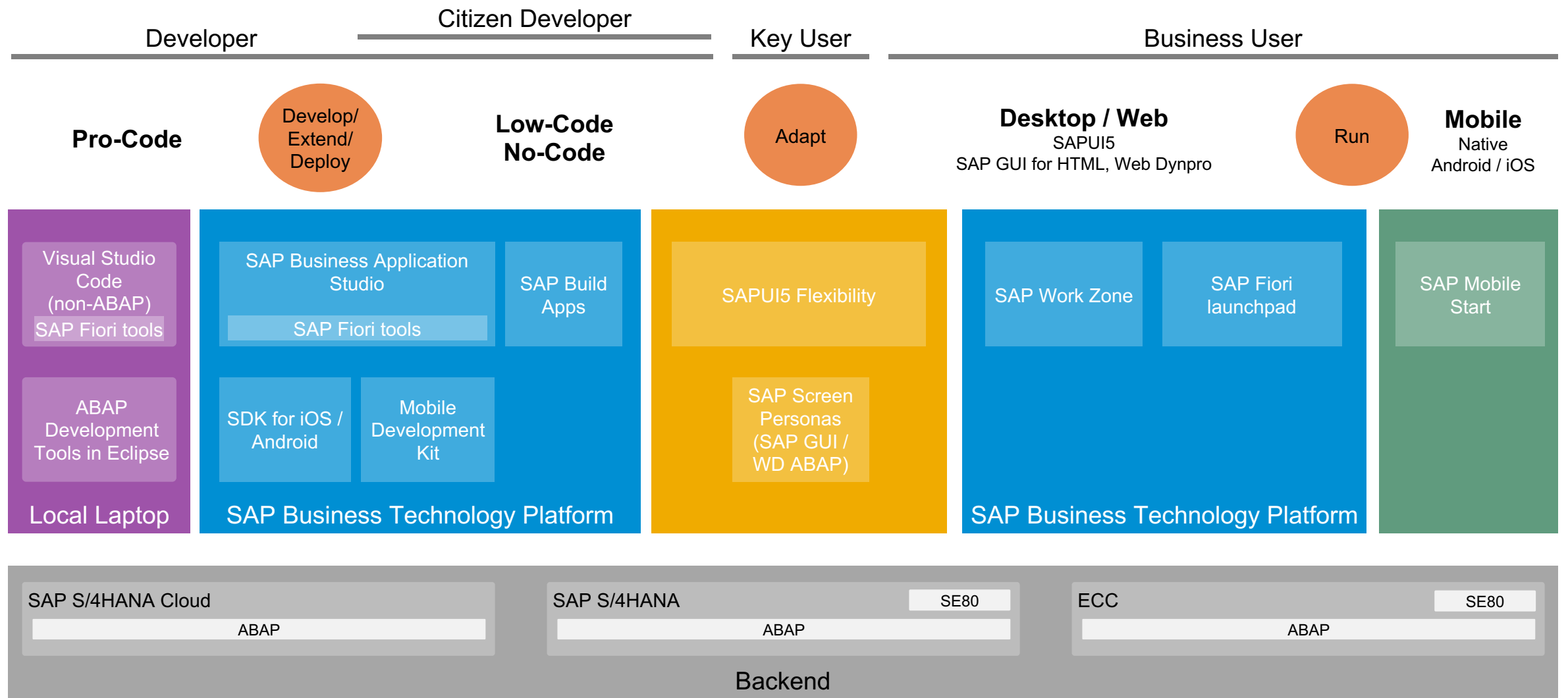
SAP Mobile Start

[SAP Asset Manager is the best-in-class mobile application](#)

Mobile Start
- [News: Hello, SAP Mobile Start](#)
- [Blog post: SAP Mobile Start – Try the new native entry point to the Intelligent enterprise](#)
- [Blog post: SAP Mobile Start – the new native entry point to access applications & contents](#)
- [Blog post: SAP Task Center is now available in SAP Mobile Start](#)
- [Blog post: SAP Business Application Studio for low-code, deploying multichannel app to mobile](#)

SAP Fiori User Experience Enabled by Technologies & Tools

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  - SAP Fiori tools
- ABAP Development Tools in Eclipse

SAP Business Technology Platform (Low-Code No-Code)
- SAP Business Application Studio
  - SAP Fiori tools
- SAP Build Apps
- SDK for iOS / Android
- Mobile Development Kit

Adapt
- SAPUI5 Flexibility
- SAP Screen Personas (SAP GUI / WD ABAP)

SAP Business Technology Platform (Desktop / Web)
- SAP Work Zone
- SAP Fiori launchpad

Mobile
- SAP Mobile Start

Backend

| SAP S/4HANA Cloud | | SAP S/4HANA | SE80 | ECC | SE80 |
| ABAP | | ABAP | | ABAP | |

Thank you.

... and don't panic!

Oliver Graeff

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LinkedIn: olivergraeff

Questions?

Recording + Slides soon available here

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