

# Trends in SAP Tooling

Thomas Jung, SAP  
December 6, 2022

Public



## CodeJam URL

<https://github.com/SAP-samples/cap-hana-exercises-codejam>

# Critical Digitalization Challenges

Organizations Fail to Innovate at the Speed the Business Demands



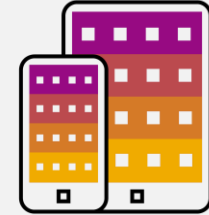
Rapidly evolving customer requirements accelerating demand for cloud solutions

“The pandemic is accelerating cloud demand, with 59% of enterprises expecting cloud use to exceed plans due to COVID-19.”<sup>1</sup>



Limited development resources, inhibiting digitalization

“Lack of skills was cited as the number-one challenge in a recent Gartner Research Circle survey, and CIOs identified the ‘lack of skills and resources’ as the biggest barrier to success.”<sup>2</sup>



Complex IT landscapes, with a growing number of applications maintained by companies

Large companies maintain 129 different applications on average, with the total number increasing by 68% since 2015.<sup>3</sup>

1. “Maximizing the Impact of Technology Investments in the New Normal,” CIO Insider, Deloitte, 03 February, 2021, Khalid Kark, Jagjeet, Gill, and Tim Smith.

2. “Forecast Analysis: Low-Code Development Technologies,” 22 January 2021, Fabrizio Biscotti, Paul Vincent, Jason Wong, Laurie Wurster. GARTNER is the trademark and service mark of Gartner Inc., and/or its affiliates and has been used herein with permission. All rights reserved.

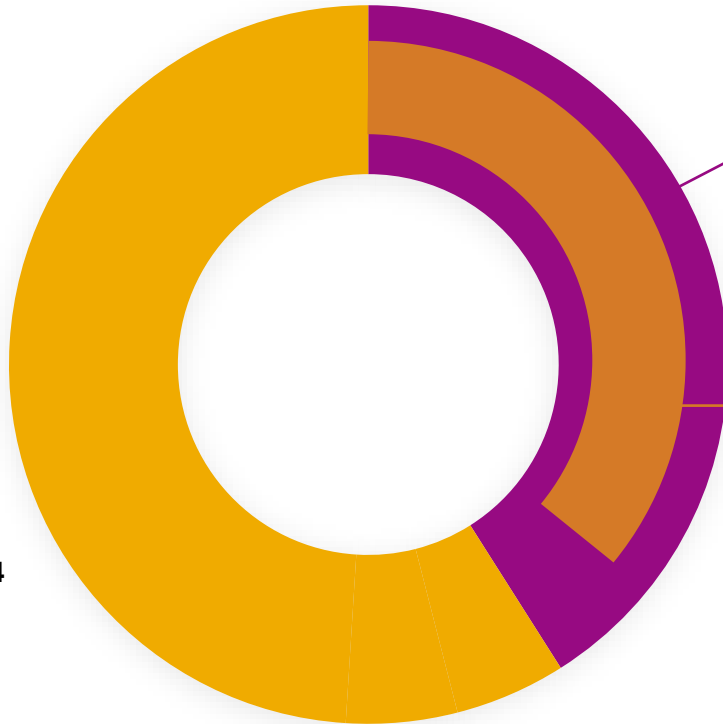
3. “Employees Are Accessing More and More Business Apps, Study Finds,” The Wall Street Journal, 07 February, 2019, Angus Loten.

# Low-Code/No-Code Unleashes Untapped Workforce in Companies

Enabling Citizen Development in Organizations to Increase Business Resilience

## IT Technologists<sup>4</sup>

Gartner®, 2021



“In the 2021 Gartner Reimagining Technology Work Survey, respondents indicated that — on average — **business technologists** make up **41%** of their organization’s workforce.” <sup>4</sup>

Gartner®, 2021

“About **80%** of these users are **citizen technologists** who create technology output as part of (or in addition to) their full-time roles (...). These non-IT personas can independently use **low-code and no-code** technologies to improve business efficiency, efficacy and agility.” <sup>4</sup>

Gartner®, 2021



**Low-Code/No-Code** increases the number of people in an organization that can deliver new apps and extensions and tackle business challenges

4. Gartner, Innovation Insight for Citizen Automation and Development Platforms, Keith Guttridge, Saikat Ray, Jason Wong, 24 September, 2021.  
Charts/graphics created by SAP based on Gartner research. Source: Gartner, Inc., Innovation Insight for Citizen Automation and Development Platforms, Keith Guttridge, Saikat Ray, Jason Wong, 24 September, 2021.  
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# How Can You Meet the Growing Application Need?

Scale Development by Empowering More Employees to Build Software

## Professional developer

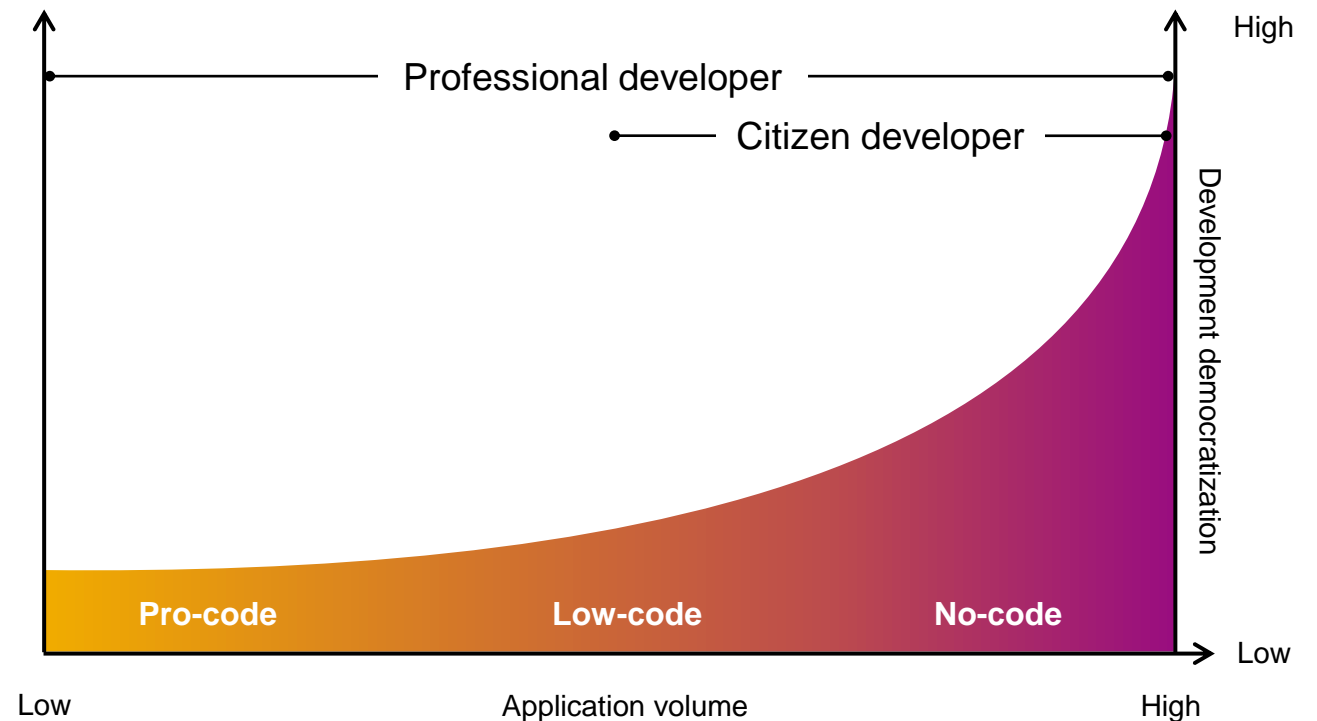


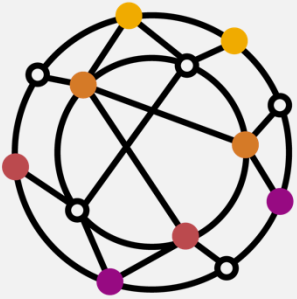
- Uses tools of choice to create cloud native applications and reusable services
- Designs, develops, deploys, tests, and hands over to production
- Understands the concept of a development lifecycle, testing, and versioning
- Ensures governance and security

## Citizen developer

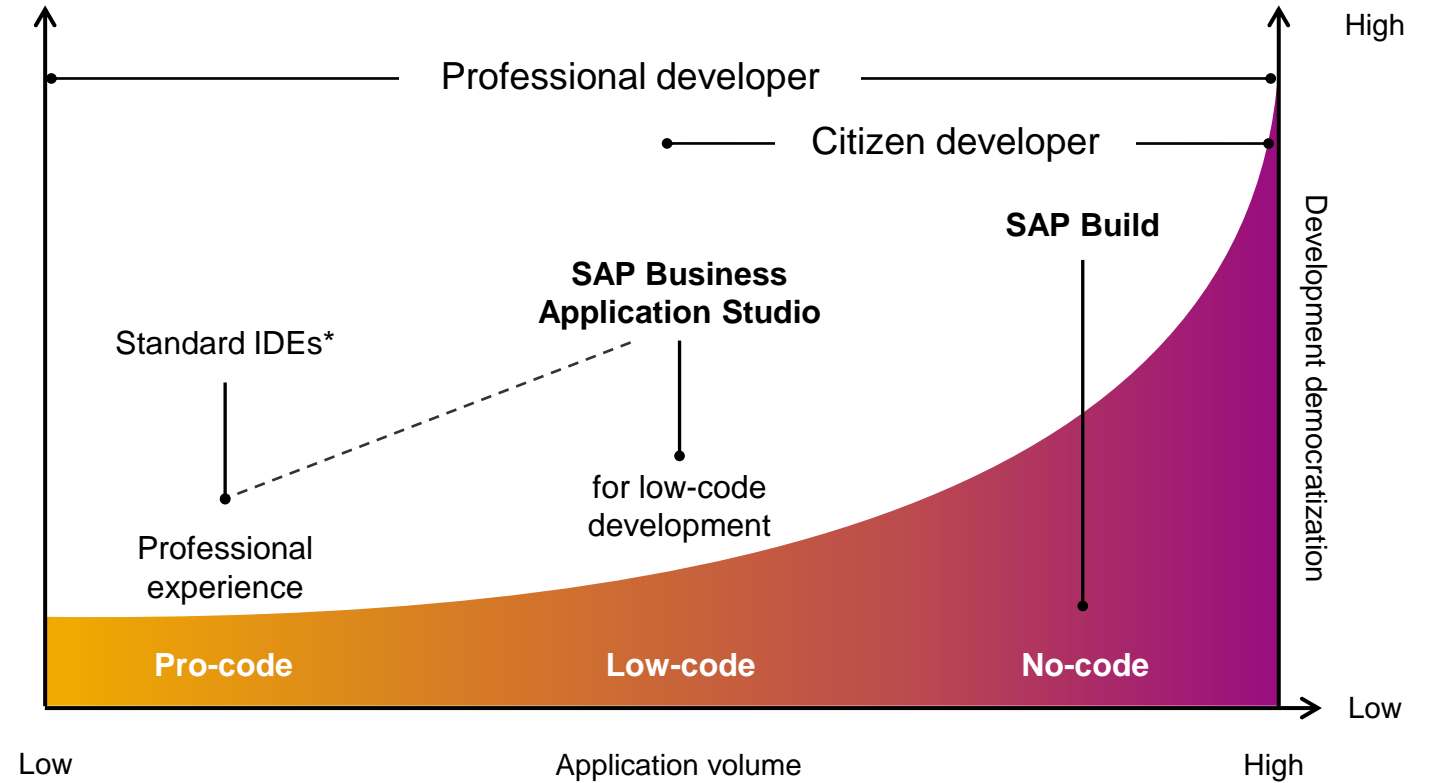


- Creates and publishes low-code/no-code apps and customizations with close links to business contexts
- Is unaware of testing, go-live, versioning, and termination but learns through citizen development education
- Ensures governance and security through IT-sanctioned tools and platform-supported processes





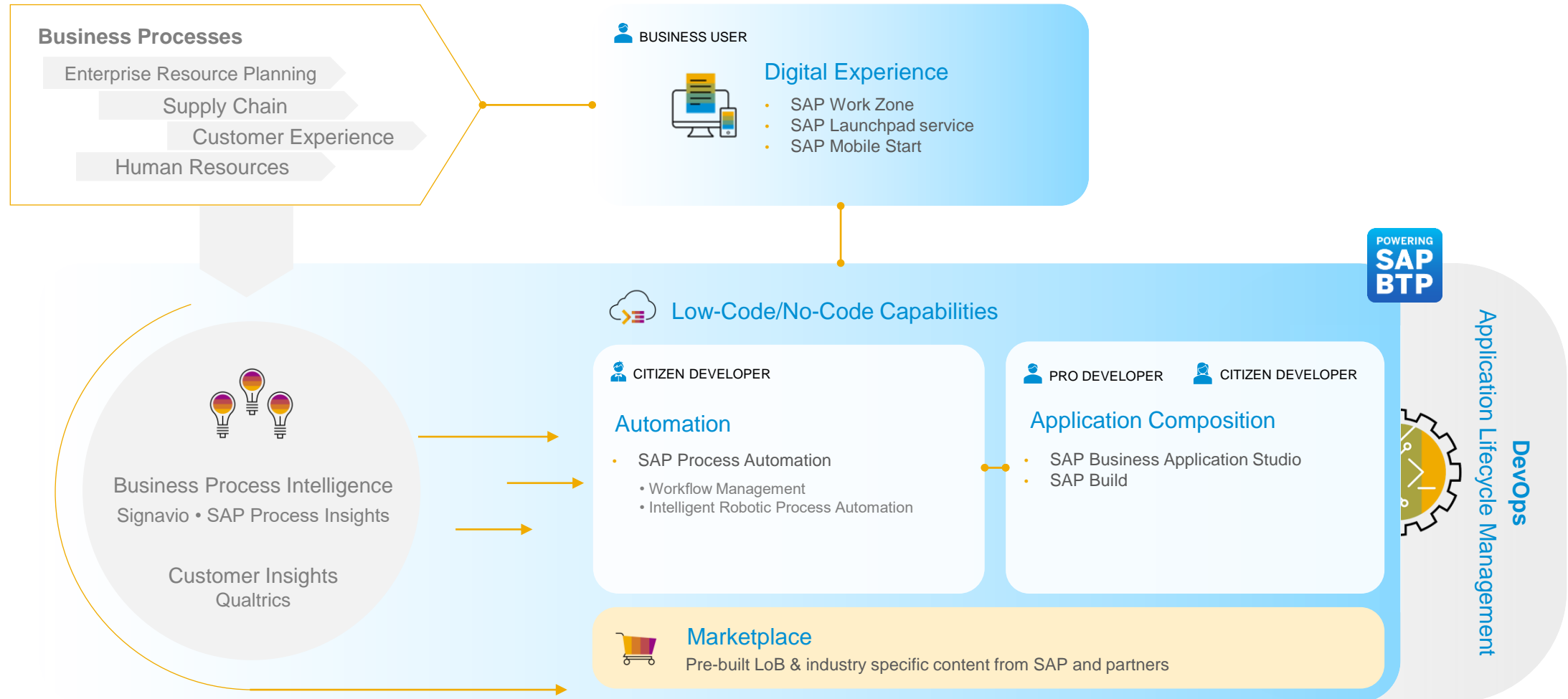
Create a **unified developer experience** that allows every developer to build apps fast, no matter the skill level



\*i.e. VS Code + extensions

# Accelerated Time to Value with Low-Code/No-Code

Unified Offering Across App Development, Process Automation & Digital Experience





## Our Vision

A unified developer experience that supports low-code and no-code application development and process automation, while enabling professional developers to participate and contribute as needed





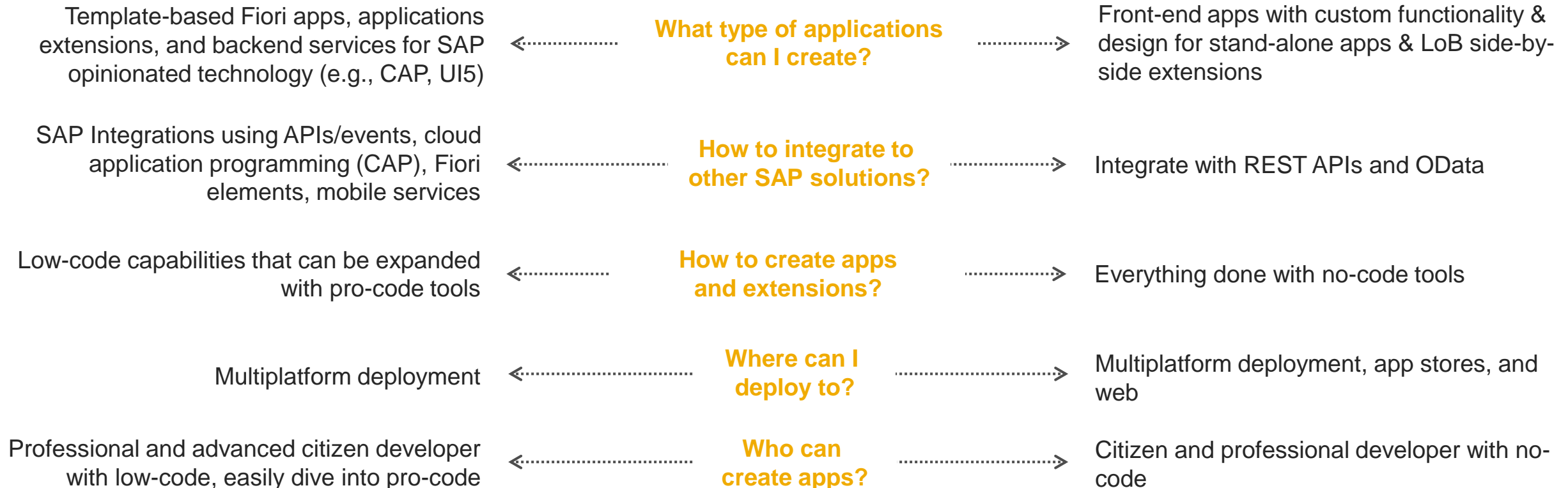
# Boost Development Agility and Unleash Innovation

A Unified Developer Experience from No-Code to Pro-Code

## SAP Business Application Studio for Low-Code Development



## SAP Build Apps



# Introducing SAP AppGyver and SAP Business Application Studio

## Boost Application Development with Low-Code/No-Code Capabilities

### SAP Build



Empowers citizen and professional developers to deliver pixel-perfect standalone apps and extensions in a full no-code composition environment

### SAP Business Application Studio

Boosts development productivity with a low-code experience based on the SAP opinionated technology (CAP, Fiori, UI5, HANA and more)



### Low-Code/No-Code Application Composition



Stand-alone and SAP App Extensions



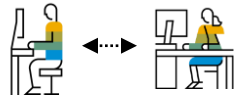
Extensive UI Component, Theming and Layout, Fiori, native web



Service modeling w/ simplified cloud application programming model



Service center for API discovery & consumption



Development continuum  
Citizen Dev → Pro Dev



Multi-channel Support, Mobile & Web



Visual process management & Business Logic



Enterprise Grade DevOps governance on BTP

# SAP Build: The no-code approach

Increase Development Efficiency  
with No-Code Technology from SAP.



- Next-generation, **no-code development environment** for enterprise-scale applications
- **Application building** for various form factors, including mobile, desktop, browser, and television



- Intuitive, **business-driven tools** that support rapid application creation
- **Support for companies and developers** that want to create and distribute sophisticated business-to-business and business-to-employee applications

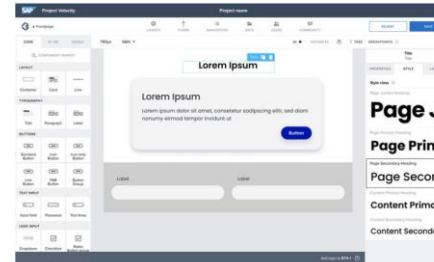


- Trusted by Fortune 500 companies and **more than 300,000 users**

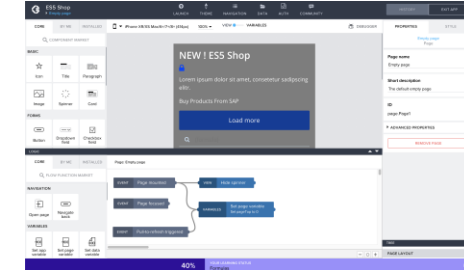
# Key capabilities of SAP Build

Powerful Features for Sophisticated App Development.

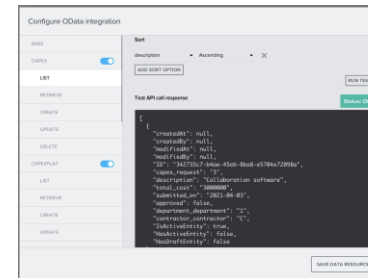
Drag and drop UI design with customizable components



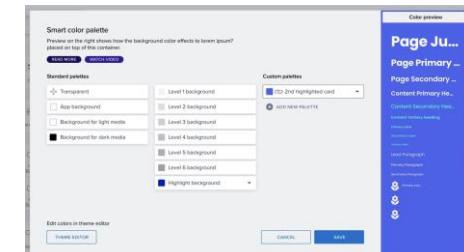
Build anything with visual logic



REST and OData support



Smart & reusable theming



Formulas: data transformations for business, finance & more

Formula editor

"VAT 24% of your hotel stays: "+ SUM\_BY\_KEY(appVars.stays, "price\_per\_night") \* 0.24

Multiplatform native performance



# Benefits of SAP Build

Build High-Quality Applications with an Enterprise-Grade No-Code Tool.

Learn more about the benefits of [SAP Build](#).



- Simplified creation of user interfaces with drag-and-drop functionality
- Support for over 400 built-in formula functions
- Ability to create any logic with flow functions



- Fully extendable from components to design systems and integrations
- Integration with external data using predefined integrations and custom connectors
- Intuitive application publishing capability for Web, iOS, and Android
- Vast enablement opportunities and community support to help no-coders get started

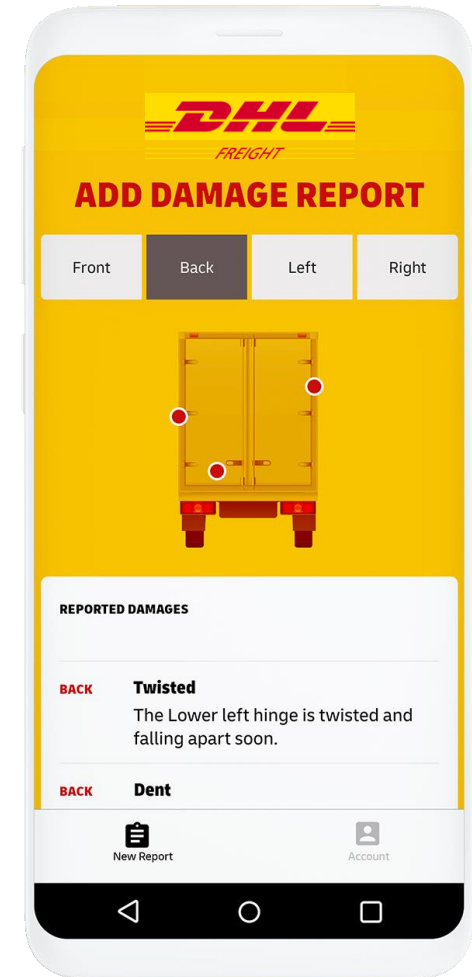
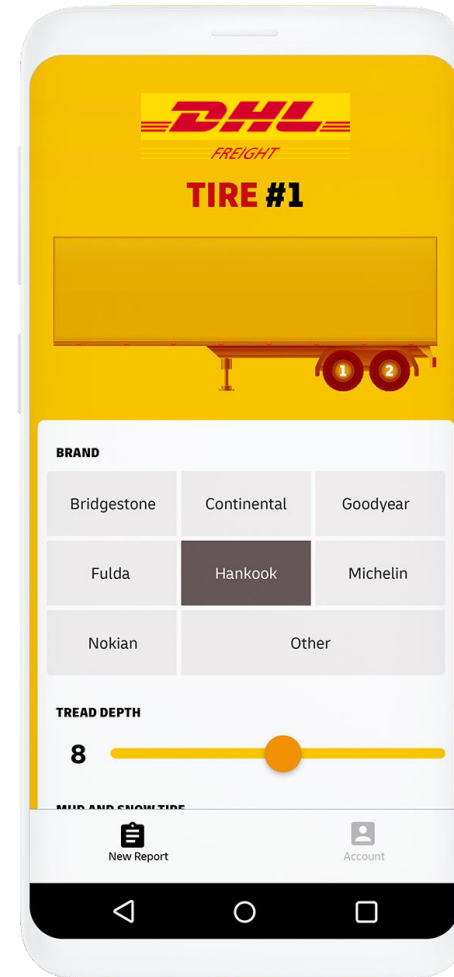
# Customer Success: DHL Freight

## Scaling European Fleet Management with One Application

Using SAP Build Apps, international logistics firm DHL Freight created an application to better manage damage reports for its trailer fleet across Europe. Created by a small team, the app increased the reliability of reporting while making inspections more convenient for employees in the field.

### App features:

- Integration with the company's trailer fleet data
- Role- and region-based user authentication
- Localization to multiple languages
- Native iOS and Android apps, and a Web-based administrative interface



# SAP Business Application Studio: The low-code approach

Scale your Development and Build Smarter Enterprise Apps.



- Low-code development environment, **tailored for efficient development** of business applications for the Intelligent Enterprise
- **Tight integration** with SAP services, technologies, and systems



- **Modern and intuitive** web user interface
- **Simplified, faster setup** of the development environment

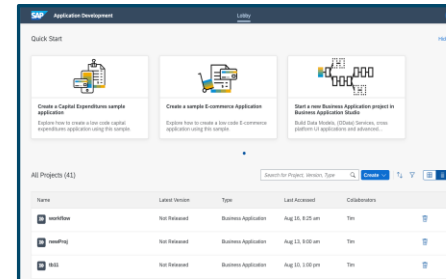


- **Accelerated time-to-market** with high-productivity development tools

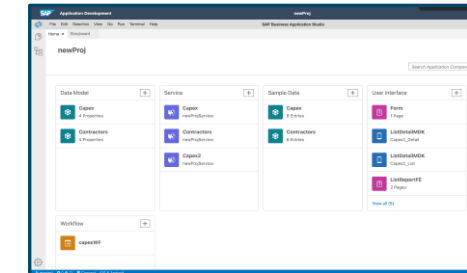
# Key capabilities of SAP Business Application Studio

Use a Modern, Integrated Development  
Environment for Today's Developers.

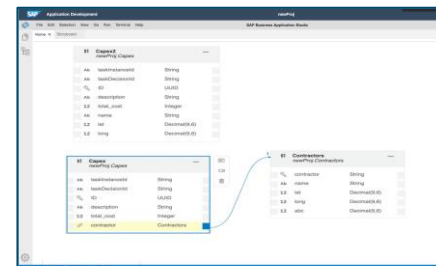
Single project studio for  
citizen developer projects



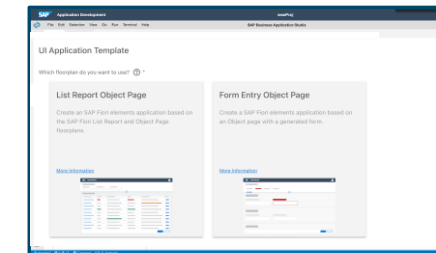
Simplified project artifact  
structure and dependencies



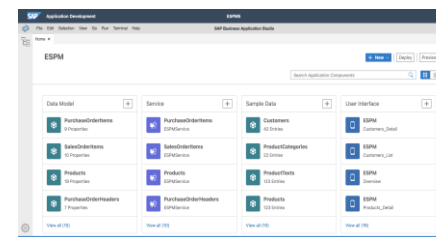
Visual data and  
service modeling



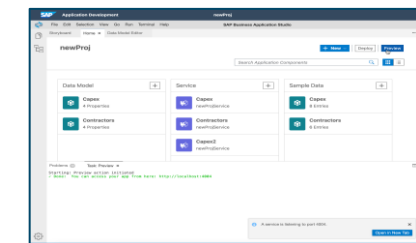
Low-code template-based  
and freestyle UI development



Service center



Single-click preview and  
deployment





# Benefits of SAP Business Application Studio

Efficiently Develop Business Applications for Your Intelligent Enterprise.



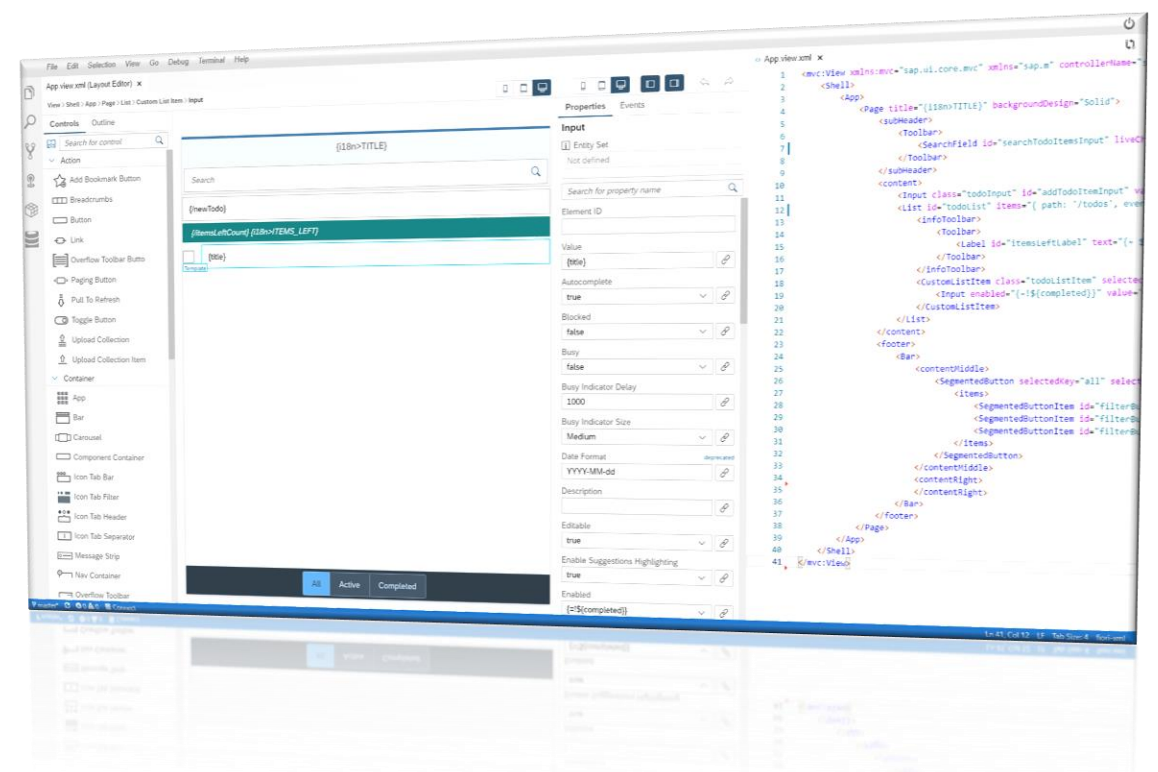
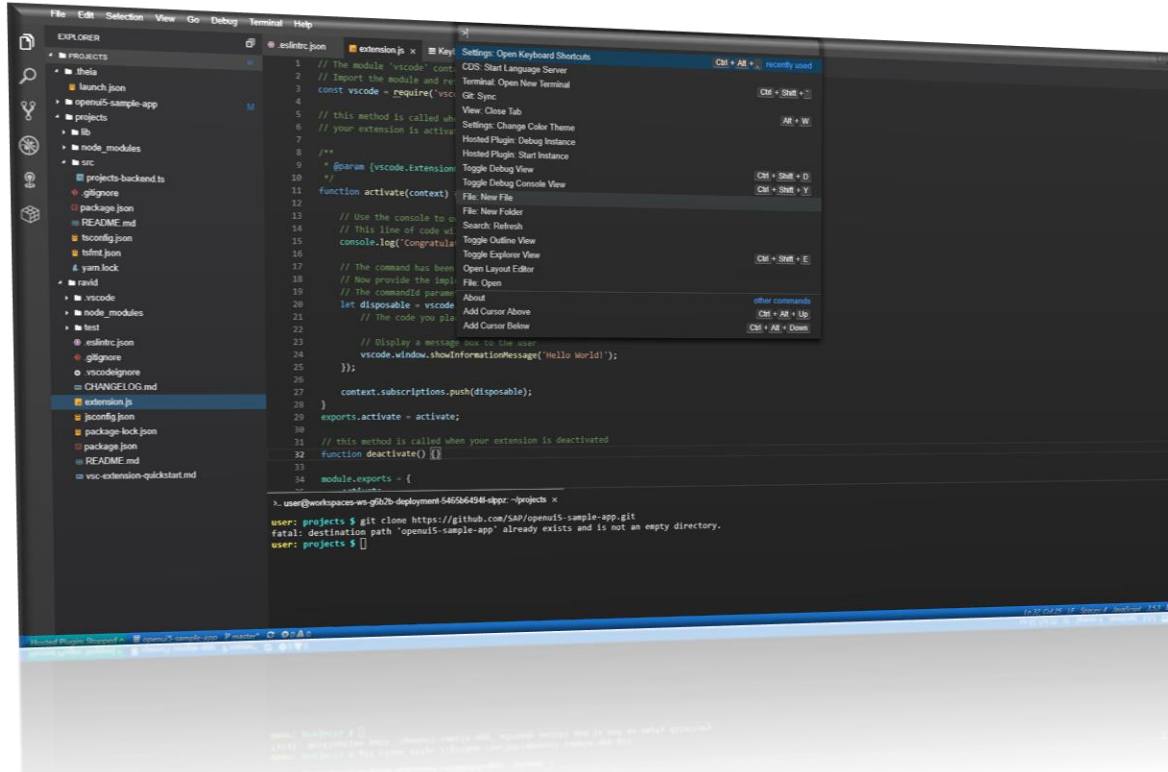
The new low-code capabilities of SAP Business Application Studio include:

- Deliver the applications the business needs when it needs them
- Improve productivity
- Increase the organization's developer (talent) pool
- Enable anytime, anywhere availability in the multi-cloud SAP environment
- Develop and extend SAP solutions
- Allow for collaboration between citizen developers and professional developers

# SAP Business Application Studio on BTP\* Multi-Cloud

General Availability on Azure, AWS, and Ali-Cloud

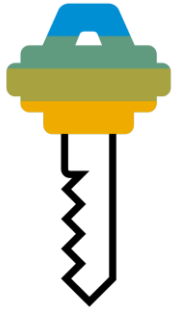
A **modern** development environment, **tailored** for efficient development of business applications for the **Intelligent Enterprise scenarios**



\* SAP BTP: SAP Business Technology Platform

# SAP Business Application Studio

## Value Proposition



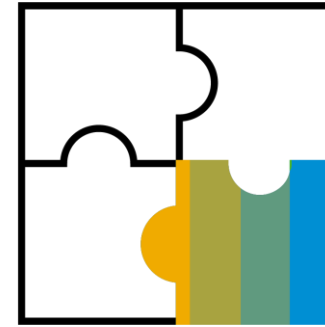
### Turn-key Solution

Instantly spin-up pre-packaged environments with tools and runtimes, tailored for developing SAP business applications



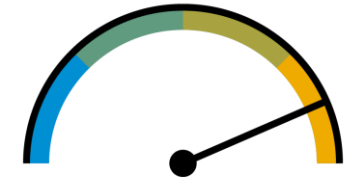
### Simplified Development

Enjoy a seamless end-to-end development environment with a desktop like experience in the cloud  
- available anywhere, anytime



### Integrate SAP Solutions

Build smarter, more intelligent applications integrating SAP services, technologies, and solutions to cater for your business needs



### Ultimate Productivity

Accelerate app development using wizards, optimized code & graphical editors, local test run & debug, terminal (CLI) access, quick deployment, and more

SAP Business Application Studio is built on Open Source and leading industry standards

# SAP Business Application Studio

## Key Use Cases



Build web apps with  
SAP Fiori and SAPUI5



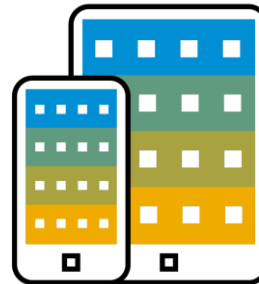
Extend SAP Solutions



Create serverless  
extensions



Digital process automation using  
SAP Workflow Management

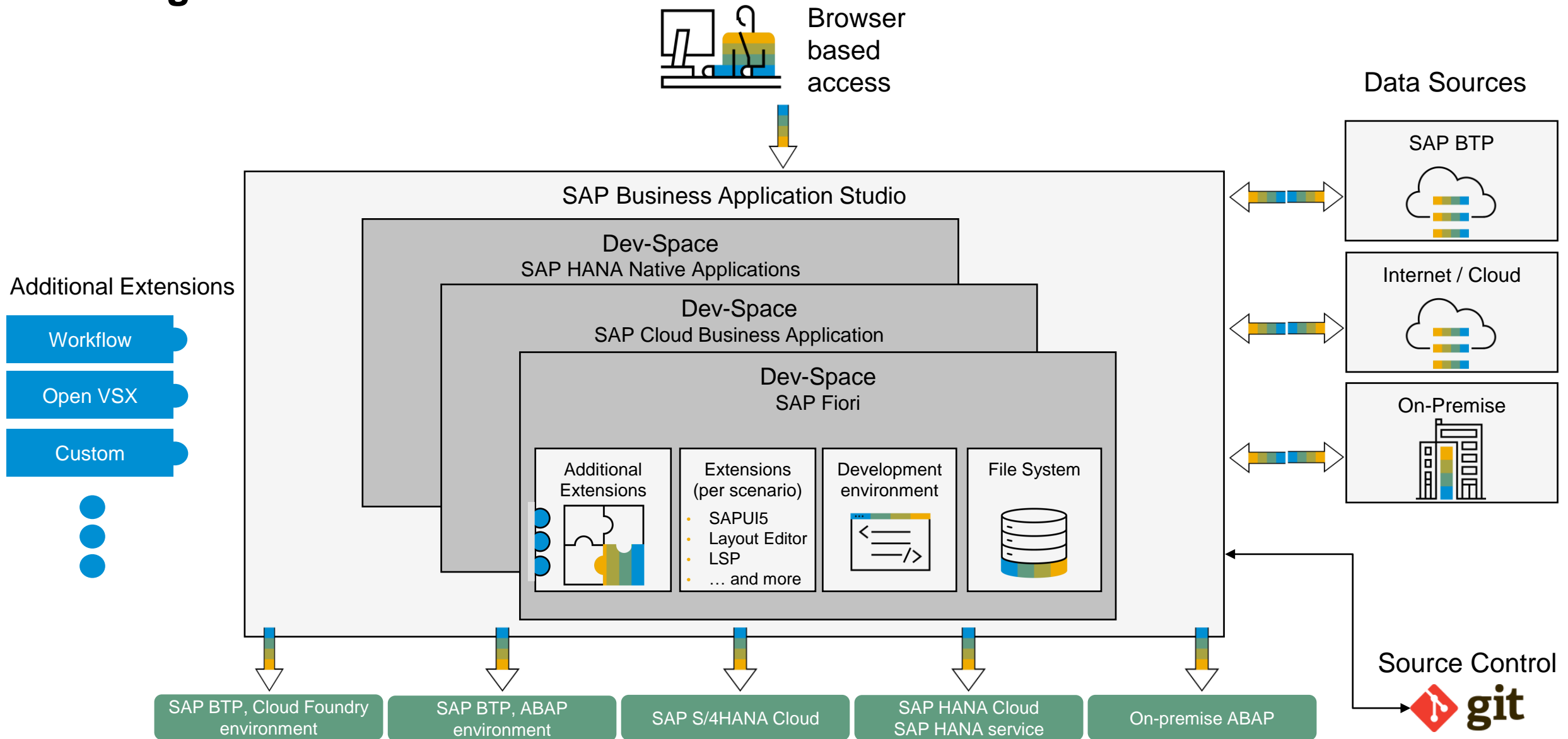


Mobilize your  
Business

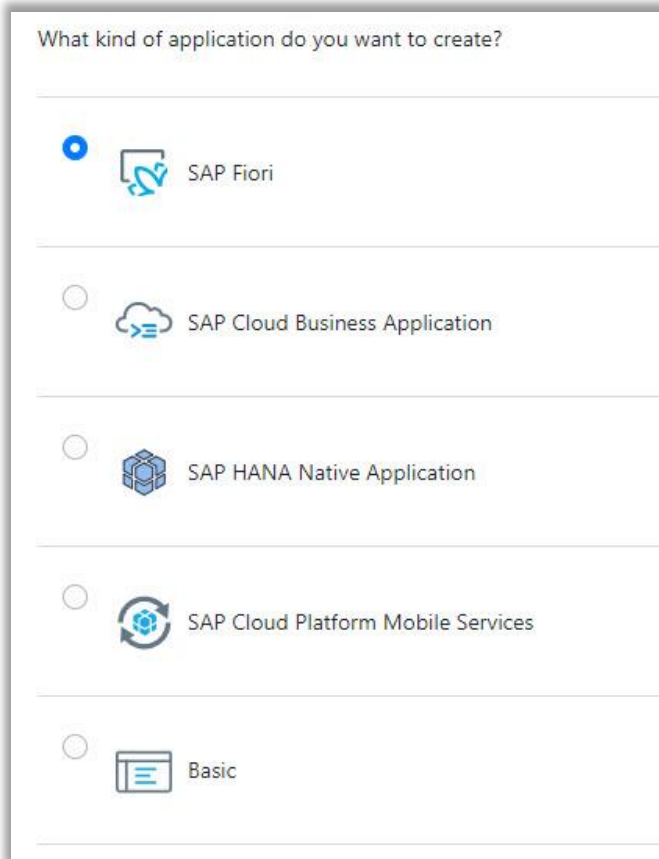


Develop SAP HANA  
Native applications

# The Big Picture

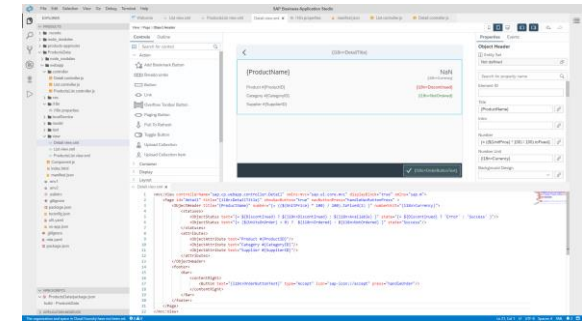


# Modular, Tailored Dev Spaces



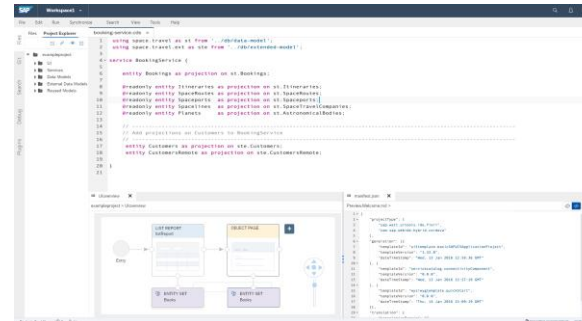
## SAP Fiori Dev Space

- IDE with language services for SAPUI5, JS, XML
- Layout editor and SAP Fiori tools
- Rich set of templates: SAP Fiori elements & freestyle
- Local test: multiple SAPUI5 versions, unit and integration tests, mock
- Env: CLI tools, SAPUI5 build, deploy to ABAP Repository, CF, ...
- Service catalog



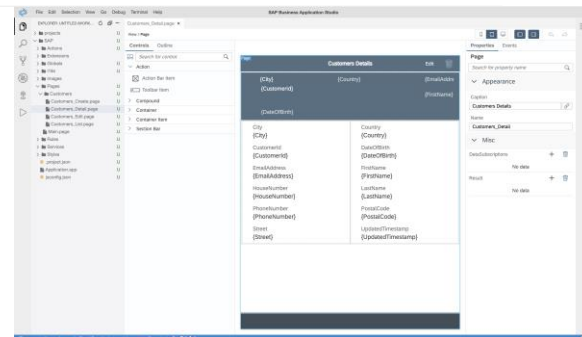
## SAP Cloud Business Application Dev Space

- IDE with language services for Java, NodeJS, XML
- Layout editor and SAP Fiori tools \*
- Rich set of templates: CAP, SAP Fiori elements\* & freestyle
- Tools: CDS tools, MTA tools, Spring-Boot tools, SQL tools, REST client and SAP HANA tools\*
- Local test: Run service, in-memory db, local SQLite db, REST client, mock, ...
- Env: CLI tools, builders,....
- Service and Events\* catalog



## Mobile Dev Space

- Basic IDE with auto-completion, validation, and more
- Templates for: Mobile Dev Kit, Mobile Cards, Mobile Backend Tool
- Local test: Mobile runtime
- Env: CLI tools, deploy to Mobile Services
- Service catalog



+ Create custom Dev Space templates for developers\*

\* Future Innovation

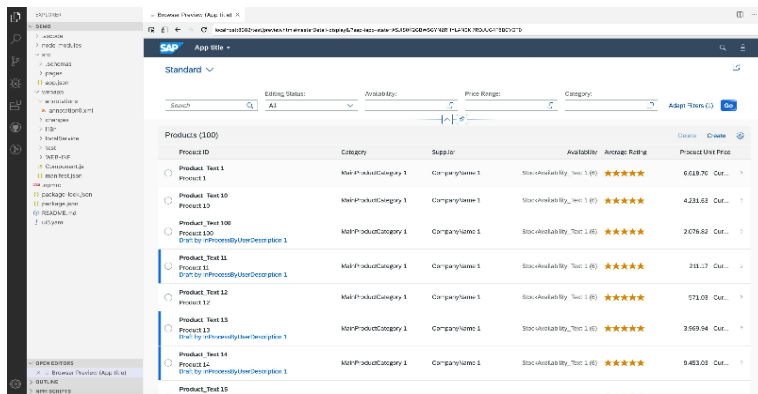
# SAP Business Application Studio vs. SAP Web IDE

	SAP Business Application Studio	SAP Web IDE Full Stack
Available on	SAP BTP, Cloud Foundry environment	SAP BTP, Neo environment
Deployment target	SAP BTP, Cloud Foundry environment, on premise ABAP SAP BTP, ABAP environment*	SAP BTP, Cloud Foundry environment, on-premise ABAP, SAP BTP, Neo environment
Solution	<b>Instantly spin-up pre-packaged isolated environments/Dev-spaces</b> (“virtual machine on the cloud”) with tools and runtimes, tailored per business scenario which provide <b>more control over the environment and code</b> <b>Configure and share Dev-spaces*</b>	Generic workspace that contains many tools. Some tools are not necessarily required for the target business scenario
Experience	<b>Embraces VS Code experience</b> , will provide the ability to add custom extensions* <b>Desktop like experience in the cloud</b> including local test, run & debug, terminal (CLI) access, and superior code editors	SAP proprietary experience Browser based experience
Support for various personas	<b>Better support for pro-code, cloud and full stack developers</b> with superior for Java and node.js coding Additional personas can be supported with a suited experience per persona using dev-spaces concept.	<ul style="list-style-type: none"> <li>• Cloud and full stack developers – partial</li> <li>• Web/mobile developers</li> <li>• Similar experience for all personas</li> </ul>
Open Source & standards	<b>Based on open source &amp; leading industry standards</b> Provides possibility to <b>quickly integrate capabilities and technologies</b> that exist in the market*	Uses open sources but majority is proprietary SAP proprietary framework with limited number of extensions

# Visual Studio Code and SAP Business Application Studio

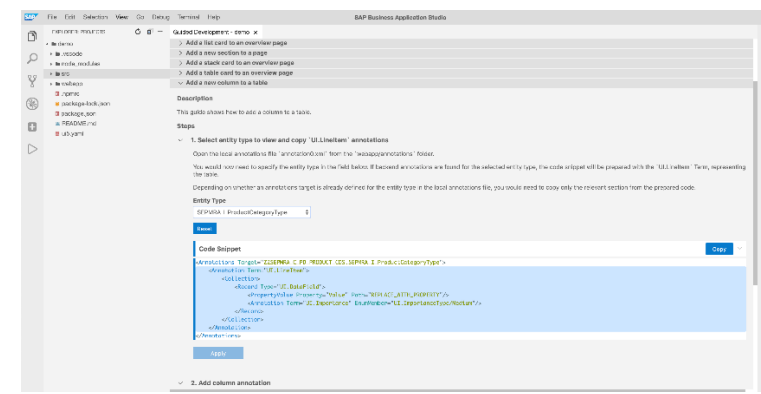
# Visual Studio Code

- 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.
- 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 open source Theia marketplace





# Quotes

## Partner feedback

- “Business Application Studio *is the one which will change the existing trend* I believe. It’s really a Superb Experience for a Developer”.
- “Business Application Studio gives me *all the tools in one place without overhead* of installation and maintenance.”
- “I use web ide for development as of today and using Business Application Studio was *fun* as it is more about command lines and it is *faster* than web ide. So, I liked the deployment part quicker than web ide and it would *help me a lot* in future.”
- “Overall *experience was very good*, since I am Fiori Application Developer and I use WEB IDE extensively, I liked Business application Studio *better* when compared to it.”



Pablo Marichal  
@dotpablo



SAP Business Application Studio is the killer Web IDE for Eclipse, VS Studio et al. and faster than SAP Web IDE (obviously different domains, uses, etc)

Works great and super intuitive to developing apps with SAP CAP Programming Model

03/05/2020, 22:36

## Customer feedback

- “Works way *faster* than the WEB IDE”
- “As a developer we’ve got *more control* now”
- “Testing is now much *easier*”
- “Nice, no longer the need for installing VS Code on local machines”
- “It is *like a local development* in the browser”

# Thank you.

Contact information:

Thomas Jung  
thomas.jung@sap.com

