Future of business processes

A Brief History of ERP

Monolithic ERP

Everything in one place
Single platform
Unified system
High level of complexity

Best-of-breed ERP

Freedom to handpick
best-in-class software
Tailored to specific needs
Complex to manage

Post-modern ERP

Integration with cloud
Improved usability
Flexible and agile
Enhanced interaction

Composable ERP

Adaptive
Modular
Flexible
Personalized
Keeps pace with change

Future of business processes
What do we Mean by "Composability"?

Defining Composability

SAP Signavio Definitions

- **Business Definition:** The ability of LoB and business decision makers to quickly **react to evolving business conditiaons** by adapting business capabilities in-line with business performance, process transformation initiatives, and functional dependencies.

- **Process Definition:** A process landscape is composable, if **business-driven changes** on the process level directly lead to functional changes in the underlying software systems.

- **Technical Definition:** The property of a software landscape to partially add, remove, or change its configuration/functionality on a higher level of abstraction through the usage of components.

  - **Component: A modular abstraction of (system) capabilities into discoverable business capabilities (i.e., functional building blocks)** with minimal dependencies, an aligned semantic, and high modularity via strong integration qualities. The process definition needs to be part of every component (i.e., configuration space).

External & SAP Definitions

Gartner
A **composable business** is architected for real-time adaptability and resilience in the face of uncertainty. **Its architecture is a framework to maximize the ability to build, assemble, and reassemble business elements** to rapidly seize market opportunities and respond to disruption and threats while being resilient.

Paul Saunders (S/4HANA Strategy)
The ability to re-compose your business to address new opportunities and challenges that are important.

SAP's Composable ERP Strategy
Ability to extend a clean enterprise core with modular cloud solutions and customizations that, when highly integrated, enable a composable ERP.
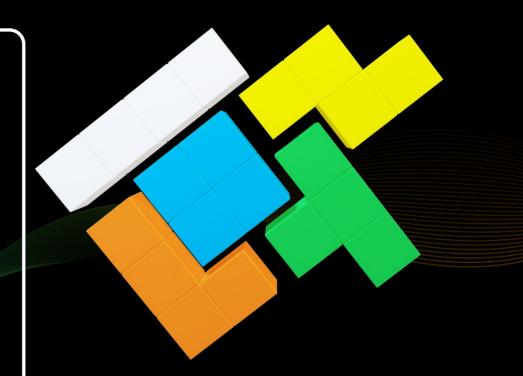
SAP NVT
The ability to combine and orchestrate a system of components while maintaining global and local constraints in a working and sensible order.
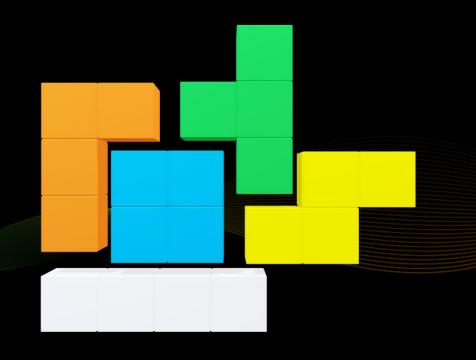
Com·po·sa·bi·li·ty

The ability of a system to **select, assemble, and rearrange** components to fit specific and changing user requirements.
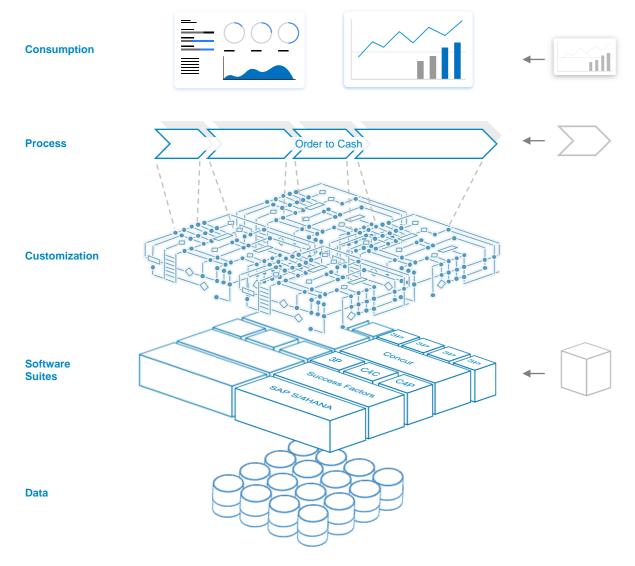
Com·po·sa·bi·li·ty

The ability of a system to **select, assemble, and rearrange** components to fit specific and changing user requirements.

Proofing the Concept

Project "ProcessOne"
Greenfield

new ventures
& technologies

IT landscapes are too complex and monolithic to meet today's business agility requirements

Consumption

Process

Order to Cash

Customization

Software Suites

3P · Concur · SAP S/4HANA · Success Factors · C4C · C4P

Data

Customer Challenges

Low Visibility

- Business processes are disconnected from IT reality.
- Little visibility into as-is software and process landscapes.
- Data silos lead to redundancy and contribute to lacking quality for high quality insights.

Loss of Business Value

- Business are run around a prescribed set of workflows dictated by different systems rather than process needs.
- A profusion of shelf-ware.

Low Agility

- Historically-grown and customized software landscapes make any new change very hard.

52% of IT expenses go to maintaining day-to-day operations, while only 22% go to building capabilities

Deloitte

70% of ERP transformations fall short of intended benefits due to the disconnect between business & IT

McKinsey & Company

58% of business value is realized within the first 18 months of digital transformations
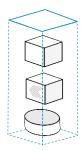
McKinsey & Company

Composability significantly enhances organizational agility through modularization

PACKAGED BUSINESS CAPABILITY (PBC)

- Modularization of applications into readily consumable capabilities.

- Each PBC can be purchased and deployed independently.

- Works seamlessly and out-of-the box with other capabilities with minimal to no integration overhead.

- Are of different sizes and fulfill larger (e.g., Central Finance) to granular (e.g., Billing, Buying) functional scope.
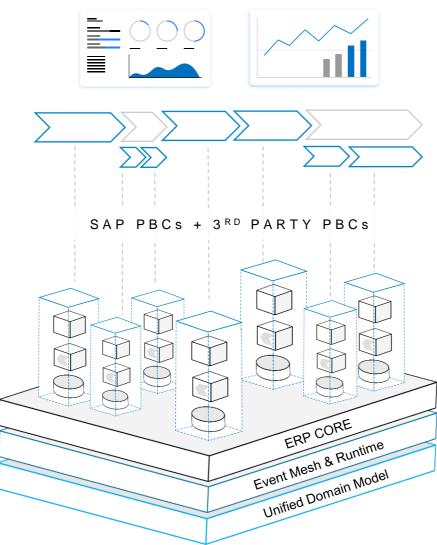
User Interfaces

Application & Process Logic

Business Objects
instantiated based on a
Unified Domain Model

COMPOSABILITY

S A P   P B C s   +   3 R D   P A R T Y   P B C s

ERP CORE

Event Mesh & Runtime

Unified Domain Model

Process as the driver and orchestrator of change

- Based on business needs, processes orchestrate the composition of software.

- Process mining is not an afterthought, but process insights are out of the box.

| Increased Business Value |
| Increased Transparency |
| Context-Driven Enterprise |

Demand-Driven Software Composition

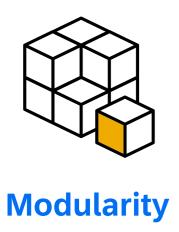- Based on business processes needs, customers can discover, procure, and execute modular capabilities.

- With a common semantic model and event mesh, capabilities can be integrated and exchanged with minimum IT effort.

| Reduced Implementation Time, Effort & Cost |
| Low Shelfware |
| Increased Agility |
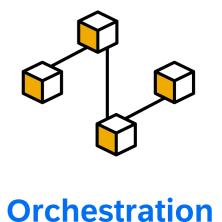
Broad Alignment on the Goals of Composability

Modularity

Autonomy

Discovery

Orchestration

Different Understandings of Composability

Modularity

Autonomy
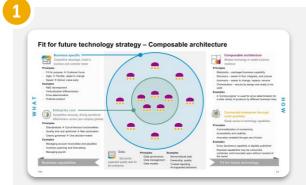
Discovery

Orchestration

Broad Alignment on the Goals of Composability
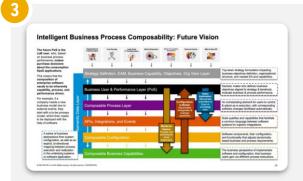
1
S/4HANA – "The composable ERP"

Composable BTP extensions around a clean core ERP

2
SAP Composable Commerce

Empowerment of business user to build CX via low-code tools

3
Signavio Process Composability PoV

Process-focused configuration of SAP solutions

4
SAP Analytics Cloud

Customize and compose analytics applications

The NVT project ProcessOne advocates for a **process-centric** view on composability

Fit for future technology strategy – Composable architecture

W H A T

H O W

Business specific
Competitive advantage, tuned to business and customer needs

Principles

- Fit for purpose → Customer focus
- Agile → Flexible, adapt to change
- Speed → Deliver value early

Examples

- R&D development
- Verticalization differentiation
- Price determination
- Produce product

Enterprise core
Competitive necessity, driving operational effectiveness, across your company globally
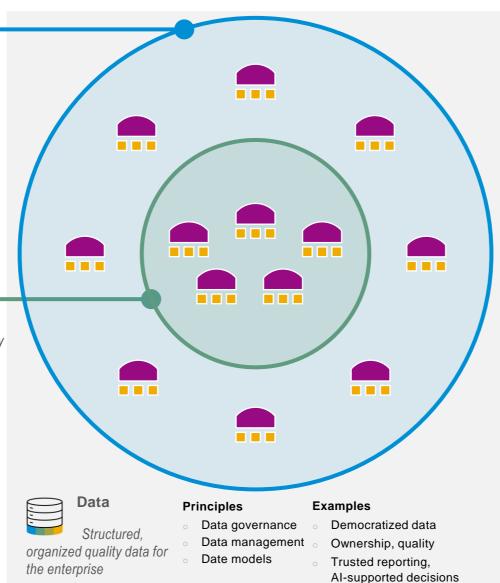
Principles

- Standardized → Out-of-the-box functionalities
- Quality and cost optimized → Max automation
- Clearly governed → One decision-maker

Examples

- Managing account receivables and payables
- Inventory planning and forecasting
- Managing payroll

Composable architecture
Modular technology to enable business resilience

Principles

- Modularity – packaged business capability
- Discovery – easier to find, integrate, and (re)use
- Autonomy – easier to change, replace, remove
- Orchestration – secure by design and ready to be used

Examples

- A "pricing engine" is used for price determination for a wide variety of products by different business lines

Connected enterprise through suite qualities
Ready access to technology capabilities

Principles
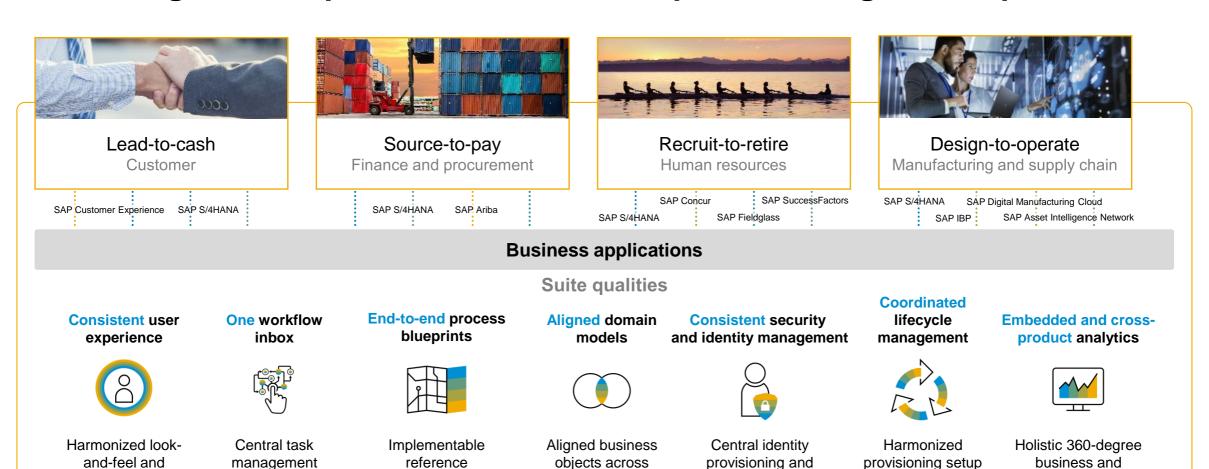
- Commoditization of connectivity
- Accessibility and usability
- Innovation enabled through zero friction

Examples

- Every (business) capability is digitally published
- Exposed capabilities may be consumed, combined, and innovated upon without consent of the owner

Data
Structured, organized quality data for the enterprise

Principles

- Data governance
- Data management
- Date models

Examples

- Democratized data
- Ownership, quality
- Trusted reporting, AI-supported decisions

Business capabilities

Fit for future technology

The Intelligent Enterprise: Connected enterprises through suite qualities

Lead-to-cash	Source-to-pay	Recruit-to-retire	Design-to-operate
Customer	Finance and procurement	Human resources	Manufacturing and supply chain

SAP Customer Experience　SAP S/4HANA

SAP S/4HANA　SAP Ariba

SAP Concur　SAP SuccessFactors
SAP S/4HANA　SAP Fieldglass

SAP S/4HANA　SAP Digital Manufacturing Cloud
SAP IBP　SAP Asset Intelligence Network

Business applications

Suite qualities

Consistent user experience

Harmonized look-and-feel and navigation patterns

One workflow inbox

Central task management

End-to-end process blueprints

Implementable reference architectures

Aligned domain models

Aligned business objects across applications

Consistent security and identity management

Central identity provisioning and authentication

Coordinated lifecycle management

Harmonized provisioning setup and operations

Embedded and cross-product analytics

Holistic 360-degree business and customer view

Business technology platform
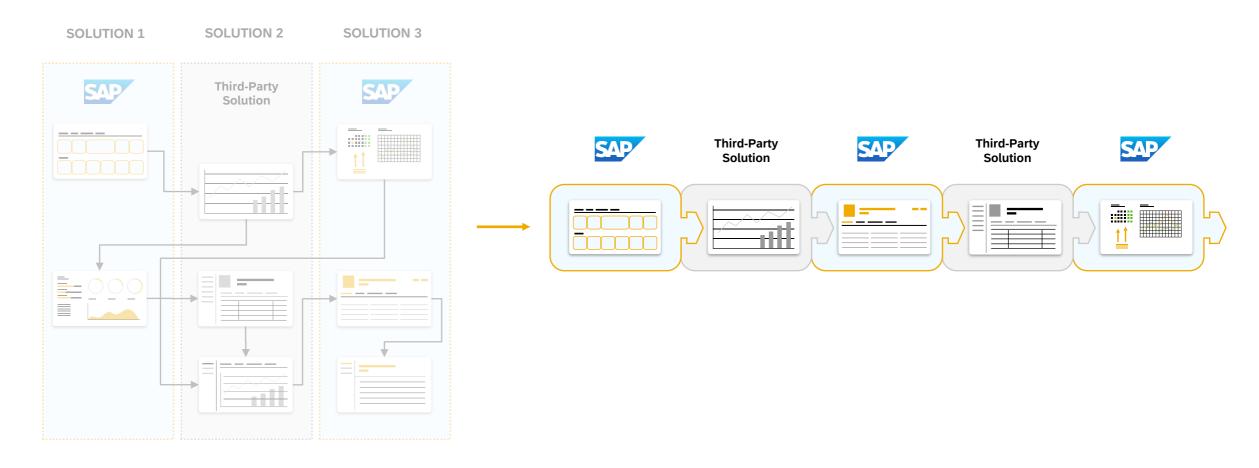
From *application-centric* integration...

...to *process-centric* composition

SOLUTION 1 SOLUTION 2 SOLUTION 3
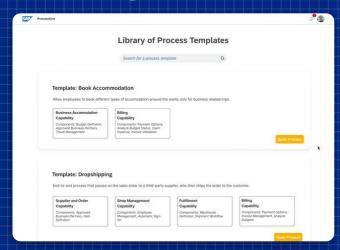

The NVT project **"ProcessOne"** advocates for a *process-centric* view on composability

Vision Studies & Evolution of Vision Prototype

Travel Budget Scenario

2 qualitative studies, 9 participants
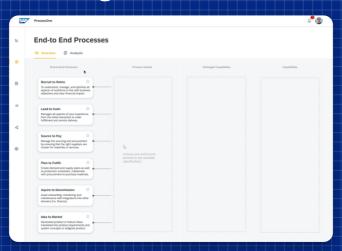Concur Fusion, SAPPHIRE, Respondent.io, internal

Focus

Early prototype to validate usage of process templates, building blocks and roll out of processes

Findings

UX needs to create more trust e.g. by providing better indication about processes performance and usage after roll out

Prototype

Invoicing Scenario

2 qualitative studies, 11 participants
DSAG, Respondent.io, internal

Focus
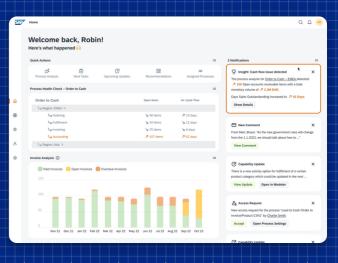
E2E process overview, process roll out and preview, Marketplace, configuration of 3rd party capabilities

Findings

Participants appreciate the direction and asked for Industry specific standard processes. Long-term usage of 3rd party building blocks needs to be ensured. Non-SAP users need a clearer description of E2E Processes to work with it.

Prototype A, Prototype B

Cash Flow Scenario

Qualitative study, 4 participants
TechEd, internal

Focus
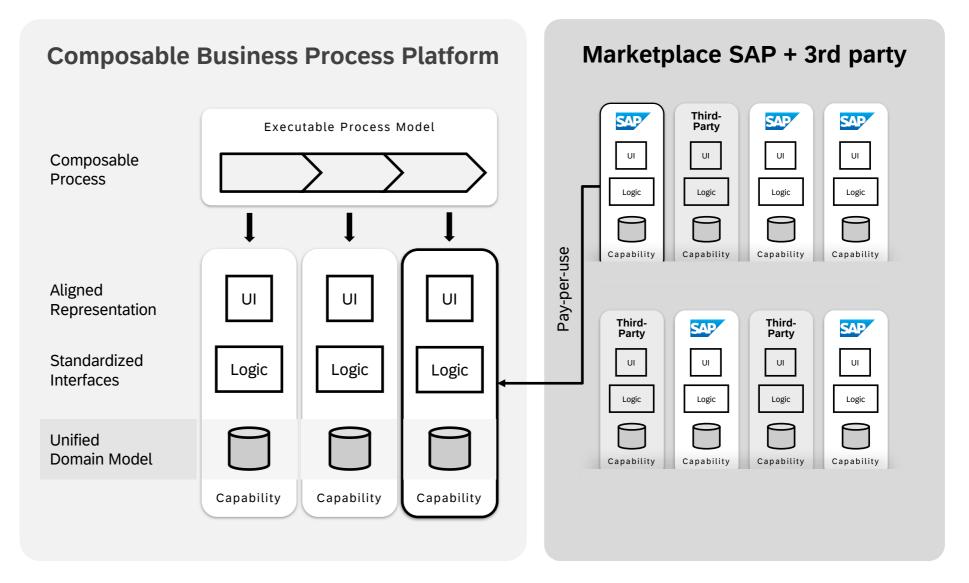
Process performance indicators, marketplace recommendations, partner offerings

Findings

Shown integration of 3rd Party solution is verry appealing. Partners have strong interested in building on such a platform, but expect clarity in the business model for investment decisions.

Prototype

Ingredients to Realize the Vision

Unify Domain Model

Composable Business Process Platform

Executable Process Model

Composable Process

Aligned Representation

UI

Standardized Interfaces

Logic

Unified Domain Model

Capability

Marketplace SAP + 3rd party

SAP — UI — Logic — Capability
Third-Party — UI — Logic — Capability
SAP — UI — Logic — Capability
SAP — UI — Logic — Capability

Pay-per-use

Third-Party — UI — Logic — Capability
SAP — UI — Logic — Capability
Third-Party — UI — Logic — Capability
SAP — UI — Logic — Capability

Ingredients to Realize the Vision

Unify Domain Model

→ **Modularize Applications into Capabilities**

Composable Business Process Platform

Composable Process — Executable Process Model

Aligned Representation — UI

Standardized Interfaces — Logic

Unified Domain Model

Capability

Marketplace SAP + 3rd party

Pay-per-use

SAP / Third-Party — UI, Logic, Capability

Ingredients to Realize the Vision

Unify Domain Model

Modularize Applications into Capabilities

Define Process Interfaces + Content

Ingredients to Realize the Vision

Unify Domain Model

Modularize Applications into Capabilities

Define Process Interfaces + Content

→ **Create Composable Micro-Frontends**

Ingredients to Realize the Vision

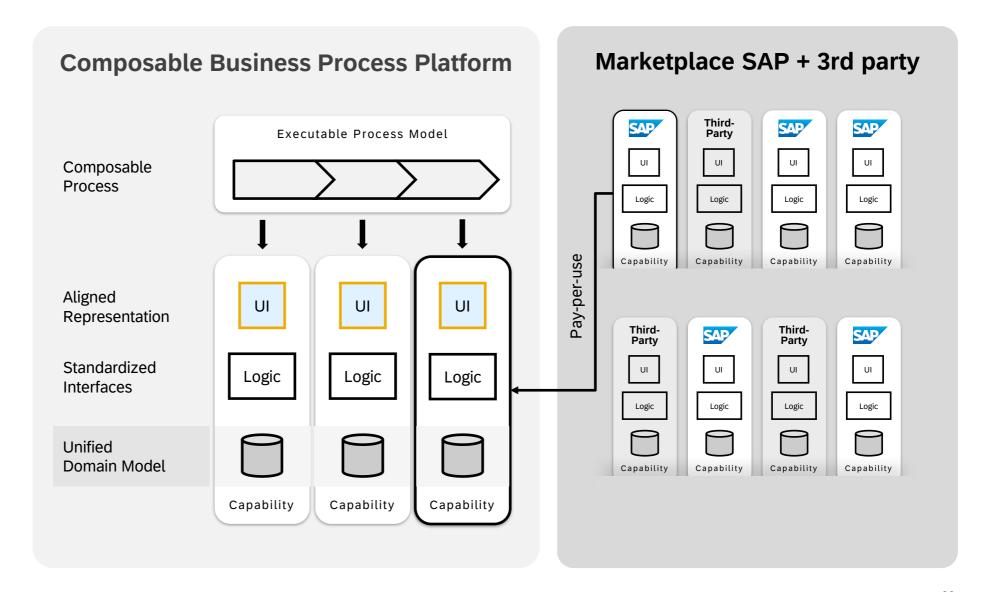**Unify Domain Model**

Modularize Applications into Capabilities

Define Process Interfaces + Content

Create Composable Micro-Frontends

Stimulate Third-party ecosystem / capability marketplace

Composable Business Process Platform

Executable Process Model

Composable Process

Aligned Representation — UI

Standardized Interfaces — Logic

Unified Domain Model

Capability

Marketplace SAP + 3rd party

Pay-per-use

SAP: UI / Logic / Capability
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SAP: UI / Logic / Capability

Feature Demo – Deploying a new process with the current Tech Prototype

Executable Process Model

| Ordering | Invoicing |

Activities

Create Order → Reserve Items → Update Order ⋯⋯ Create Invoice → Send Invoice ⋯⋯

Business Objects

SALES ORDER
Created

SALES ORDER
In Progress

INVOICE
Created

INVOICE
Sent

Customer/Sales

Composed UI

UI	UI		UI
Logic	Logic		Logic
Ordering	Inventory		Invoicing

Business Configuration Products **Foundation (Master Data)** Warehouses Business Partners

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Feature Demo – Deploying a new process with the current Tech Prototype

Executable Process Model

| Ordering | Invoicing |

Activities

Create Order → Reserve Items → Update Order ·····> Create Invoice → Send Invoice ·····>

Business Objects

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👤 Customer/
Sales

Composed UI

UI

Logic

Ordering

UI

Logic

Inventory

UI

Logic

Invoicing

| 🔧 Business Configuration | 📦 Products | **Foundation (Master Data)** | 🗄 Warehouses | ☁ Business Partners |

Feature Demo – Deploying a new process with the current Tech Prototype

Executable Process Model

| Ordering | Fulfillment | Invoicing |

Activities

Create Order → Reserve Items → Update Order ┄┄ Create Delivery → Pick Item → Create Shipping Note ┄┄ Create Invoice → Send Invoice

Business Objects

SALES ORDER
Created

SALES ORDER
In Progress

DELIVERY
Created

👤 Picker

SHIPPING NOTICE
Created

INVOICE
Created

INVOICE
Sent

👤 Customer/
Sales

Composed UI

UI

Logic

Ordering

UI

Logic

Inventory

UI

Logic

Fulfillment

UI

Logic

Task Mgmt

UI

Logic

Invoicing

⚙ Business Configuration

📦 Products

Foundation (Master Data)

▥ Warehouses

⚙ Business Partners

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Feature Demo – Deploying a new process with the current Tech Prototype

Process UI tailored to deployed capabilities

Feature Demo – Deploying a new process with the current Tech Prototype

Process UI tailored to deployed capabilites

Deployment of new "fulfillment" workflow triggered via API

Feature Demo – Deploying a new process with the current Tech Prototype

Process UI tailored to deployed capabilites

Deployment of new "fulfillment" workflow triggered via API

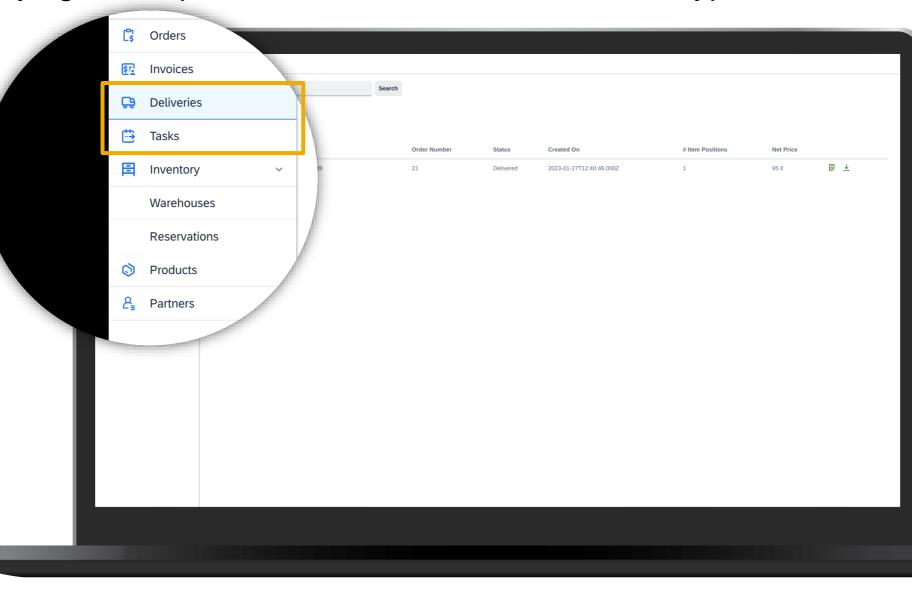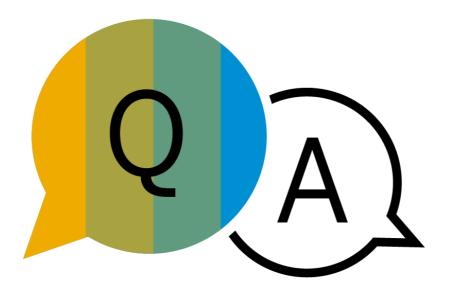**Workflow activation triggers deployment of Kubernetes Pod for Fulfillment implementation**

Feature Demo – Deploying a new process with the current Tech Prototype

Process UI tailored to deployed capabilities

Deployment of new "fulfillment" workflow triggered via API

Workflow activation triggers deployment of Kubernetes Pod for Invoicing implementation

→ **Fulfillment aspects added to UI and workflow automatically triggered by SalesOrder.IN_PROGRESS event**
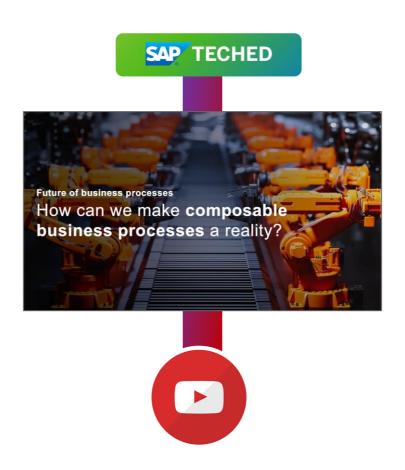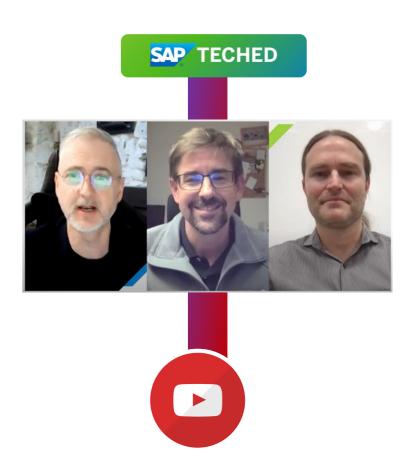
Related Viewing

Architecting the Future: SAP's Composable ERP Strategy

Stefan Batzdorf, CTO of SAP S/4HANA; Paul Saunders, SAP S/4HANA Head of Product Strategy

The Future of Enterprise Software Is Composable – How to Make It a Reality

Martin Heinig, Head of SAP New Ventures & Technologies

Building the ERP Strategy for 2030: Emerging Technology Trends

Paul Saunders, SAP S/4HANA Head of Product Strategy; Yaad Oren, Head of SAP Innovation Center Network; Holger Bruchelt, Program Manager for SAP on Azure at Microsoft