

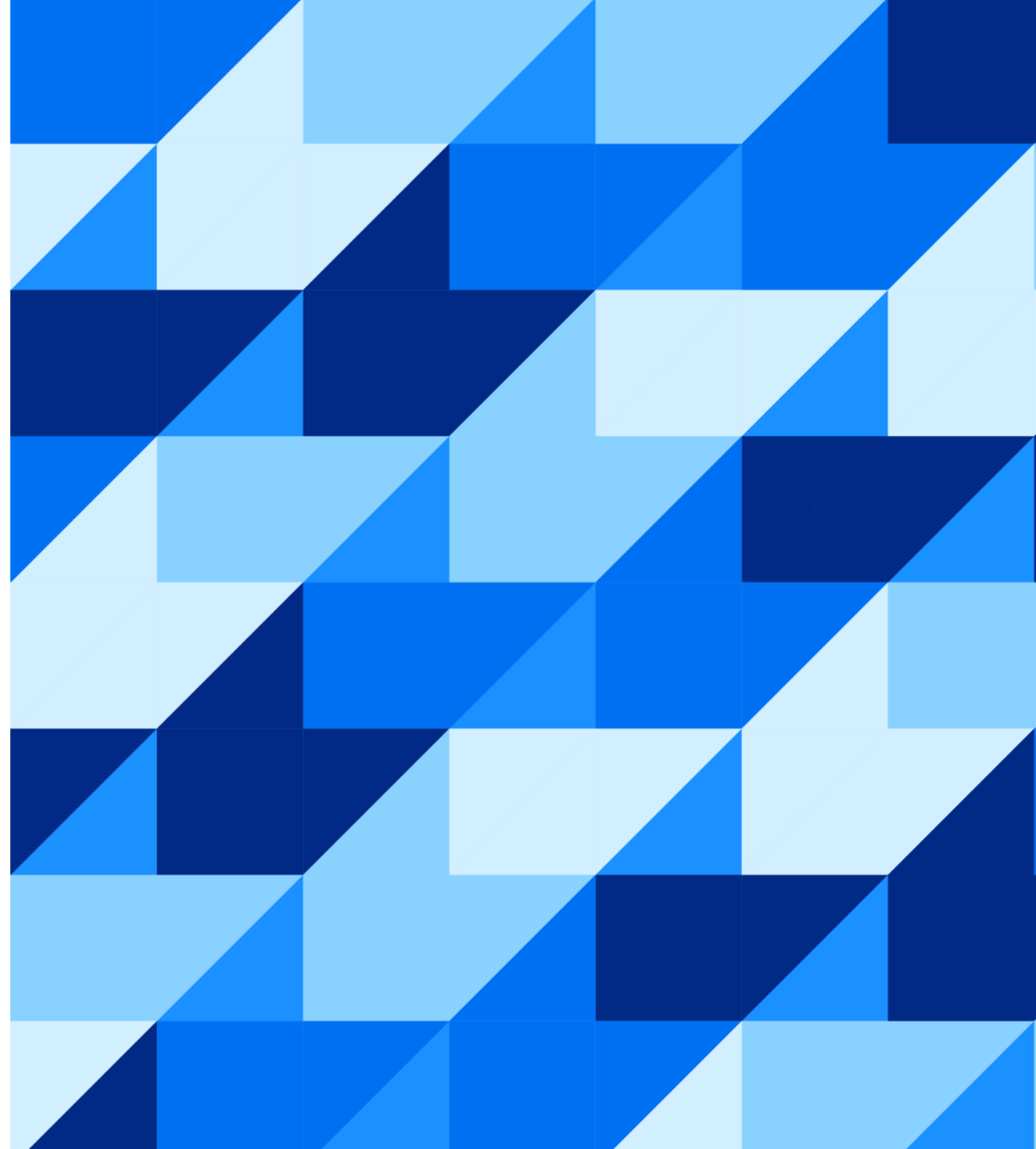


SAP Clean Core Integration Dimension.

Keeping reliability and flexibility within your environment.

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INTERNAL – SAP and Customers Only

SAP Innovation Day
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ERP challenges today

Why do we need a clean core?

Business change

In today's **fast-paced and ever-changing business environment**, disruptions across global supply chains, customer preferences, and the workforce have become a common occurrence. **Businesses must quickly adapt** to these changing requirements to remain relevant and thrive.

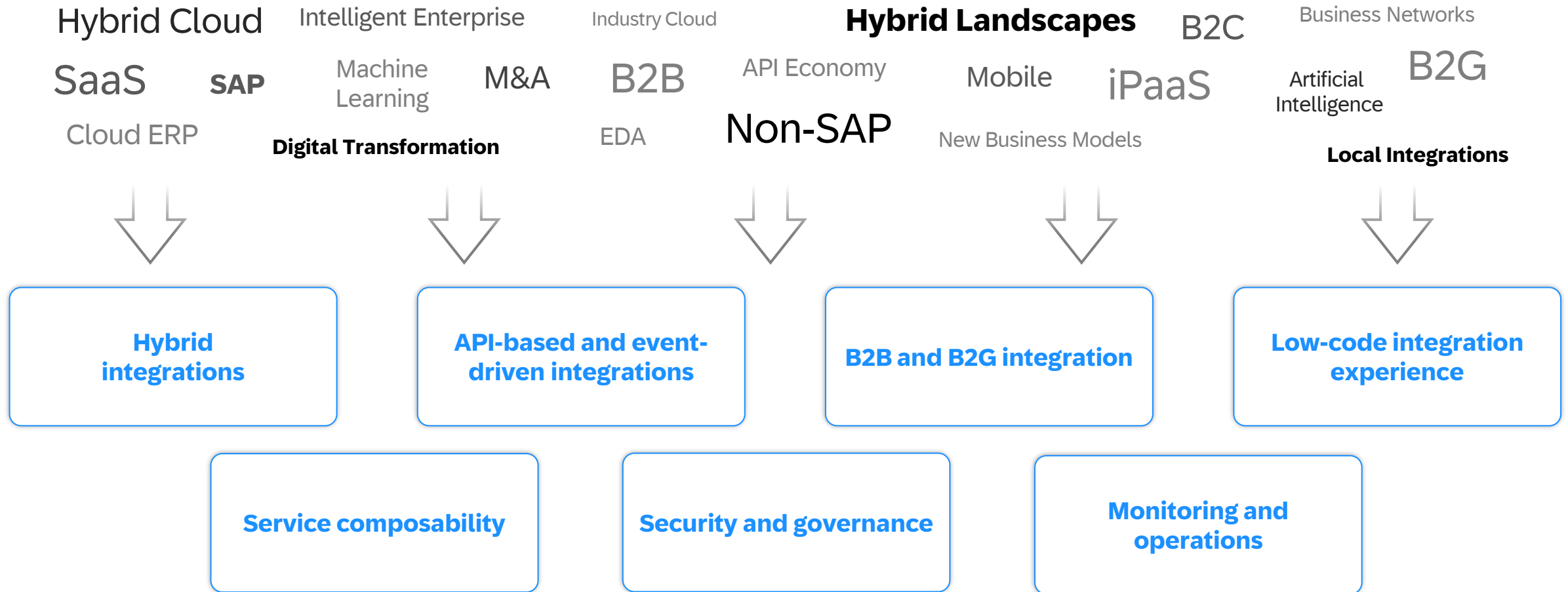
New technologies

To succeed in the digital age, organizations need to embrace **new capabilities**. This includes **accelerating innovation**, optimizing and automating processes, and fostering agility in order to **gain a competitive edge**.

Landscape complexity

Companies must have a **flexible infrastructure** that allows them to quickly **adapt their business models** as needed. This means being able to **rapidly adjust** key applications to meet changing market demands and customer needs.

Quickly evolving hybrid landscapes



Agenda

1

Clean Core Impact in Integration

2

Establishing defined integration strategies with ISA-M

3

SAP Integration Suite. The Hybrid Platform for Intelligent Enterprises

1. Clean Core Impact in Integration

Keep the landscape **reliable and flexible**

Main Aspects:

- ✦ **Integrations shall be based on standard API's** (OData and SOAP)
- ✦ Side-by-side extensions should leverage **API Integration or SAP S/4HANA Cloud SDK** by utilizing the tight coupling with **SAP Integration Suite**
- ✦ Loosely coupled integrations could be realized in an **Event-Driven Design** based on standard **Events**
- ✦ Avoid **traditional API's** (RFC and IDoc) and their related **classical extension options**
- ✦ Proper monitoring and error resolution capabilities can be realized by utilizing **SAP Application Interface Framework**

Keep **competitiveness** while **reducing complexity**.

1

Business Processes

Decouple extensions from standard.

2

Extensibility

Control data according to **latest standards**.

3

Data

Keep the landscape **reliable and flexible**.

4

Integration

Keep the operations **effective and efficient**.

5

Operations

What makes **Integrations** clean core compliant?

What is “clean” integration?

Main Aspects:

- ✦ **Integrations shall be based on standard API's** (OData and SOAP)
- ✦ **Aim for side by side extensibility with API Integration or even SAP S/4HANA Cloud SDK** by utilizing the tight coupling with **SAP Integration Suite**
- ✦ Loosely coupled integrations could be realized in an **Event-Driven Design** based on standard **Events***
- ✦ Avoid **traditional API's** (RFC and IDoc) and their related **classical extension options**
- ✦ Ensure proper monitoring and error resolution capabilities by utilizing **SAP Application Interface Framework**

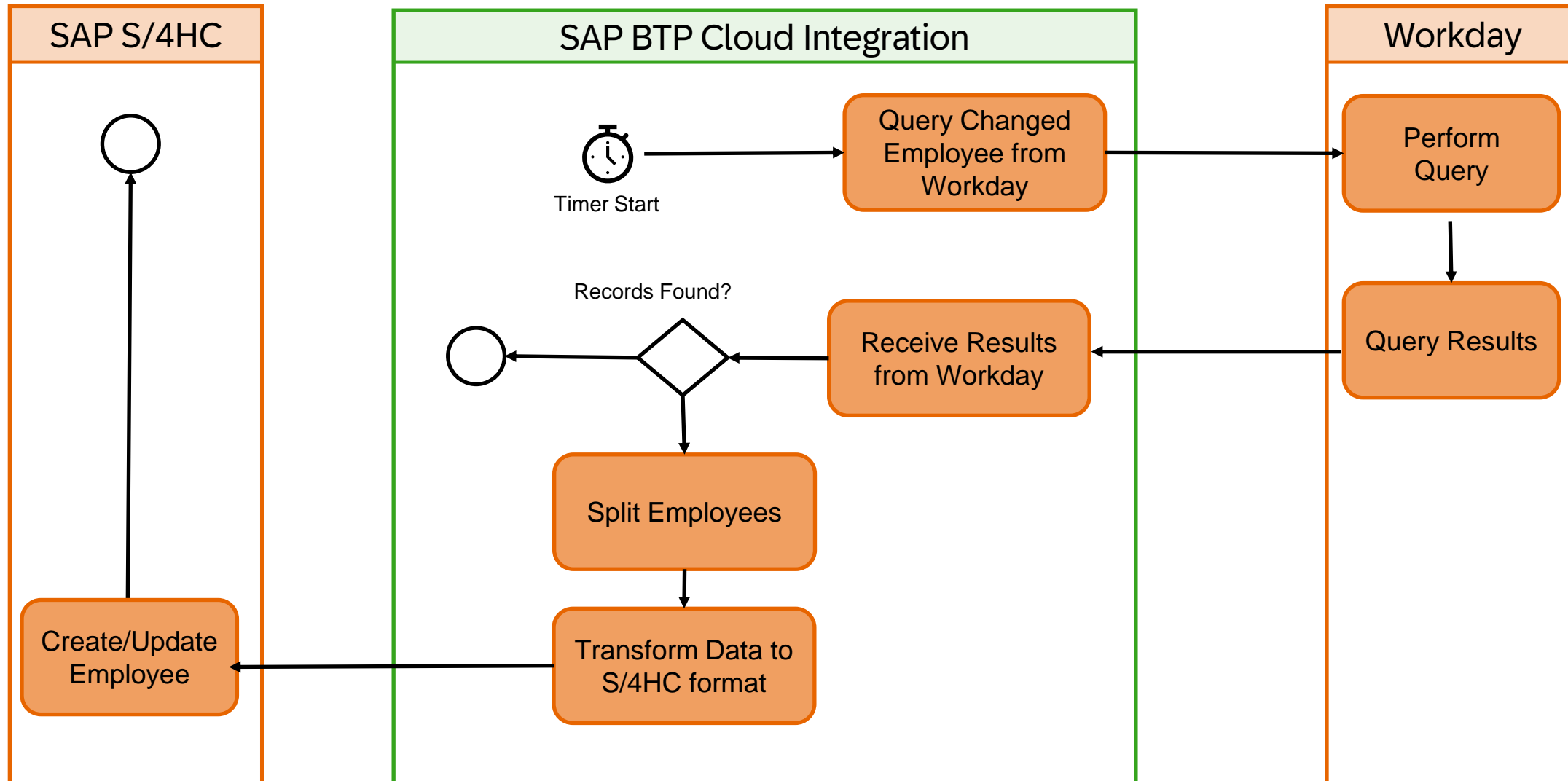
How to achieve that:

- Establish a clearly defined integration strategy by utilizing [SAP Integration Solution Advisory Methodology \(ISA-M\)](#)
 - Central access point to discover integration artefacts like standard API's, Events and Integration Flows is the [SAP Business Accelerator Hub](#).
 - If mediation is required utilize SAP Integration Suite to benefit from the tight integration into other SAP BTP capabilities.
- Define a one time 'get clean' process
 - Create an Integration Repository (e.g. included in [SAP Solution Manager](#)) to identify existing integrations and the technology/protocol they are based on.
 - Establish 'get clean' service inside the company to evaluate how utilized traditional API's (RFC and IDoc) as well as their classical extensions could be converted into standard interfaces (fit-to-standard).
- Establish a continuous 'keep clean' process (governance model)
 - Define central governance functionality for evaluation of new interface requirements or any interface adjustment based on the defined ISA-M characteristics. The [Integration Assessment provided by SAP BTP](#) could be used as an accelerator.
 - Apply 'keep clean' process for the most important and critical integrations.

***Event:** A data record expressing a significant change in state, e.g. change of a Business Partner, and consists of data representing the occurrence and context metadata. It is send to an Event Provider e.g. **SAP Event Mesh** where consumer could subscribe to it. The business object data needs to be pulled by each consumer individually by using standard API's.

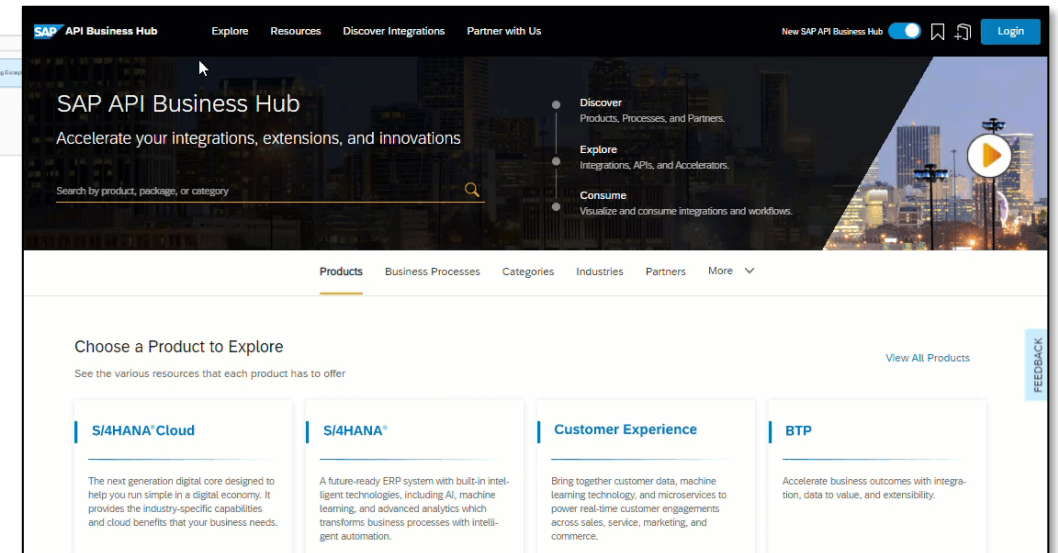
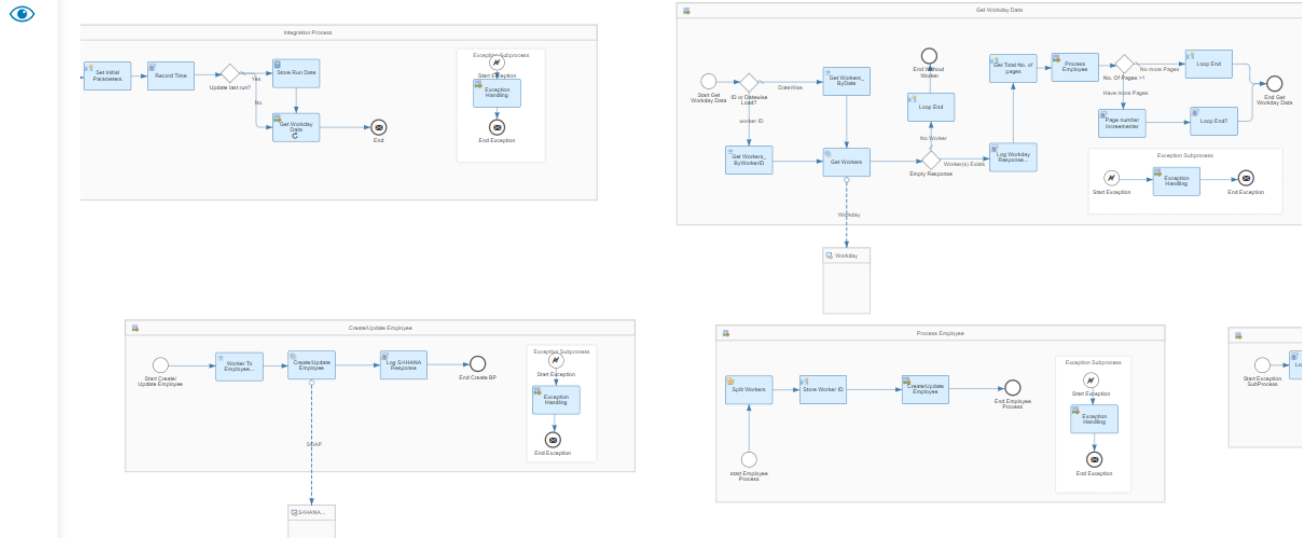
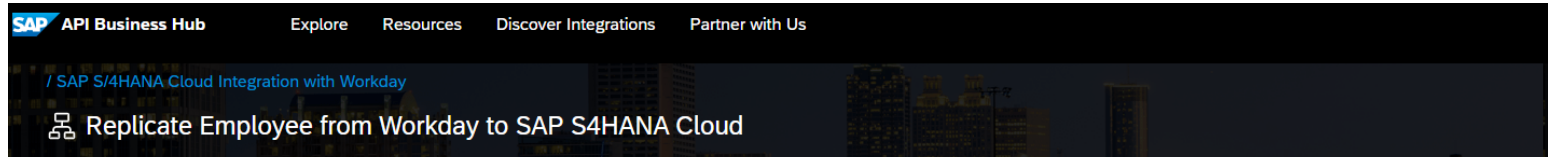
Using Pre-delivered Content to Accelerate Implementation

Example: Workday Integration



Using Pre-delivered Content to Accelerate Implementation

Consume integration components from SAP Business Accelerator Hub



Events and event-driven architecture

An **event** is a **significant change in state**.

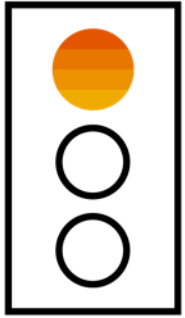
Notification events or **data events** can be sent from the **event source** to inform of the change.

A message holding the event description in an encoded format is sent through an **event broker**.

Event consumers have registered with the event broker and are informed of the event.



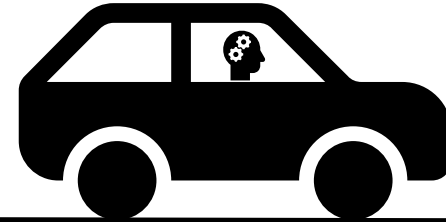
APIs vs. Events



Application programming interfaces are a **contract** between client and server.

Most calls are synchronous and blocking.

Need to be called **actively**.



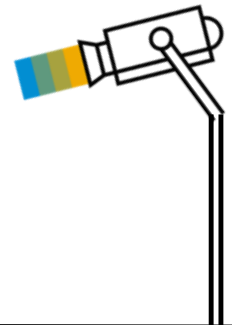
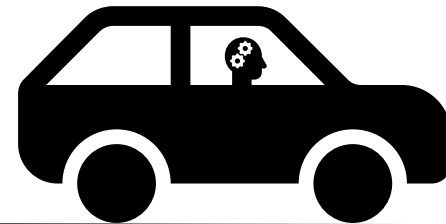
APIs enable us to read and write data, call functions, and start processes.



Event notifications inform interested parties on significant changes.

Asynchronous and non-blocking.

Register once - no additional action needed.

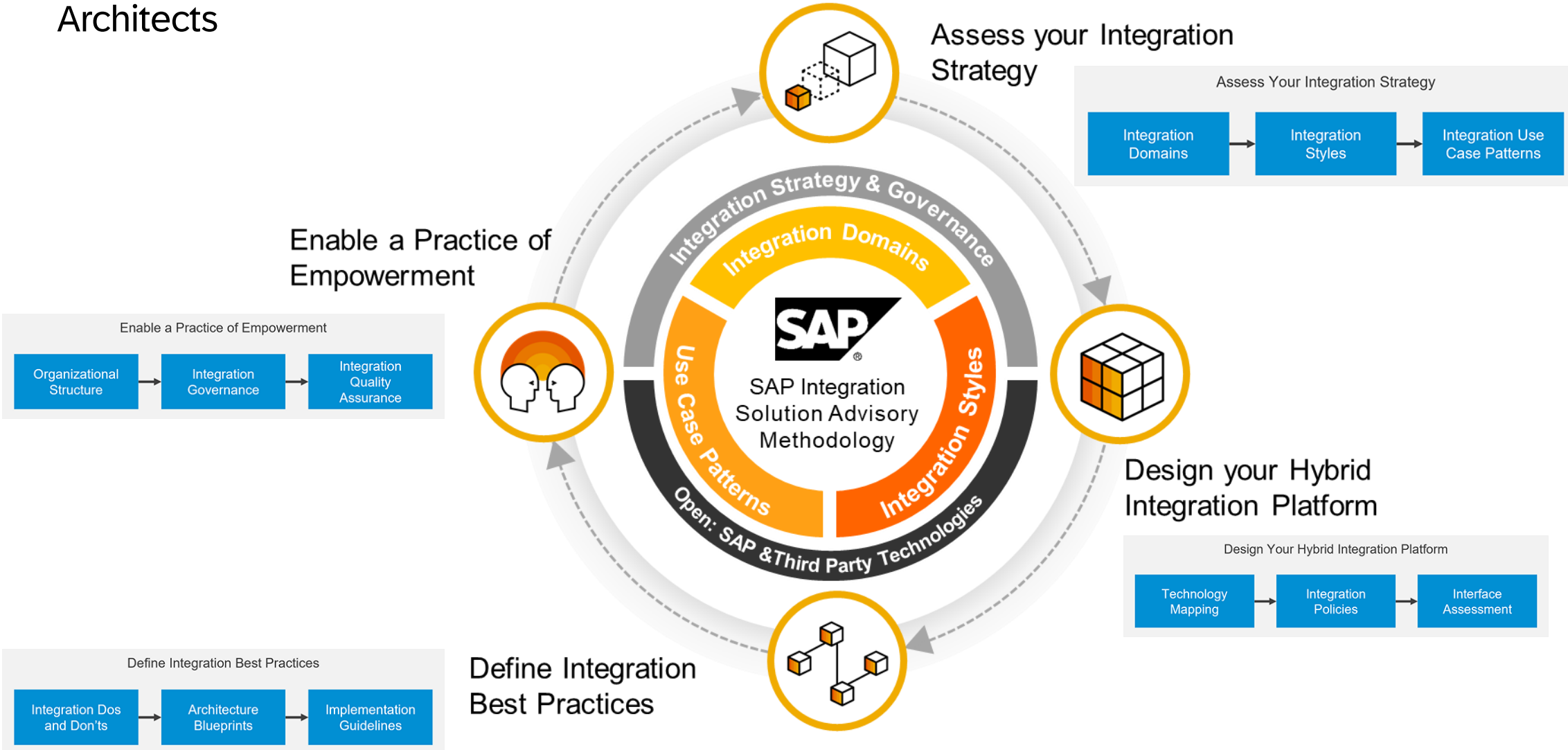


Events allow us to react to changes, by informing that something has changed.

2. Integration Solution Advisory Methodology

ISA-M Cycle

Priorities and framework: Adoption phases for Enterprise Architects



Assess Your Integration Strategy



Assess Your Integration Strategy

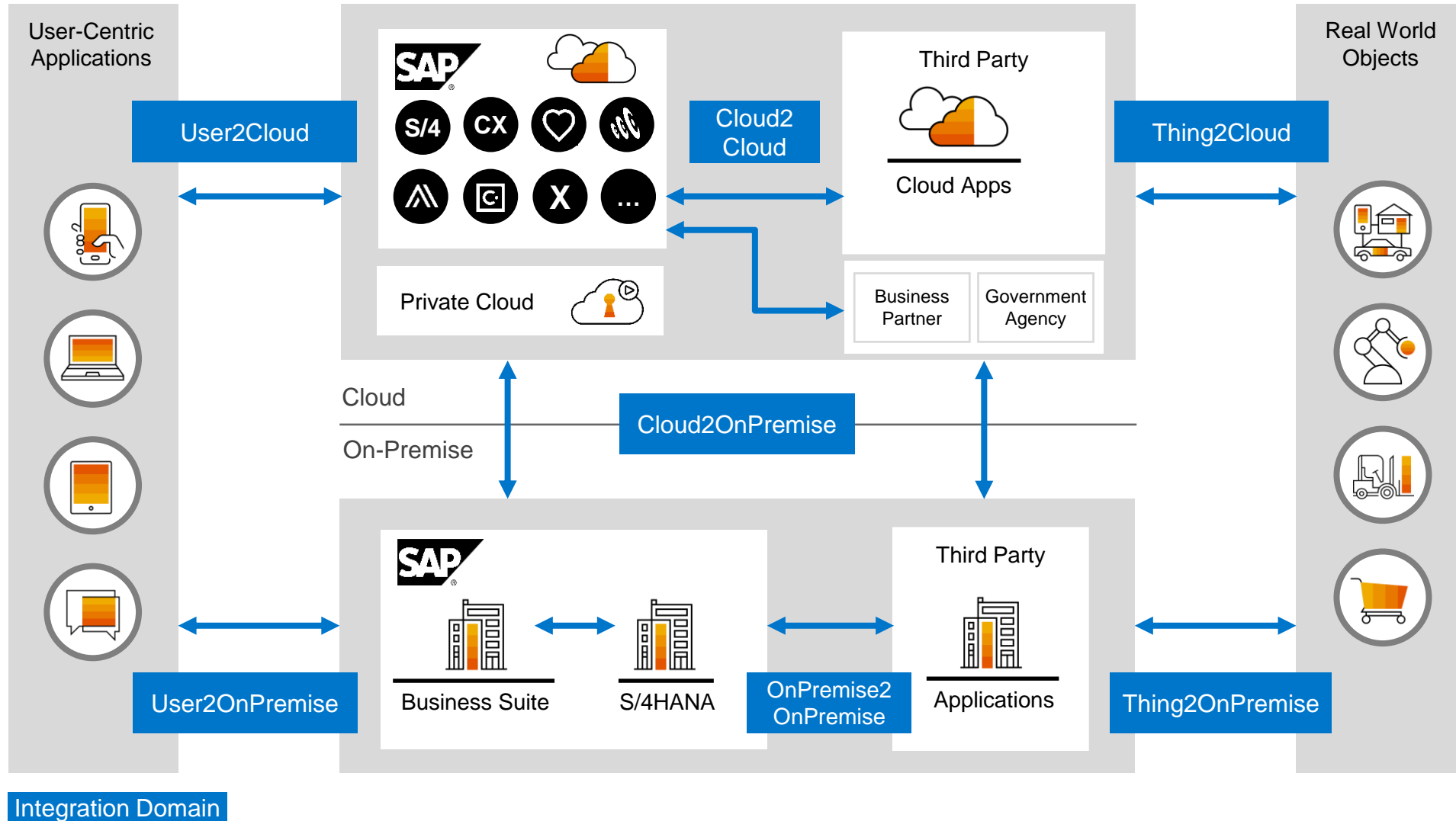


Reasons to assess:

- S/4 Hana transition
- New use case patterns
- Adoption of cloud solutions
- Avoid redundancies in landscape.

Integration Domains

Assessment and Scoping of your Hybrid Integration Landscape



Integration Styles

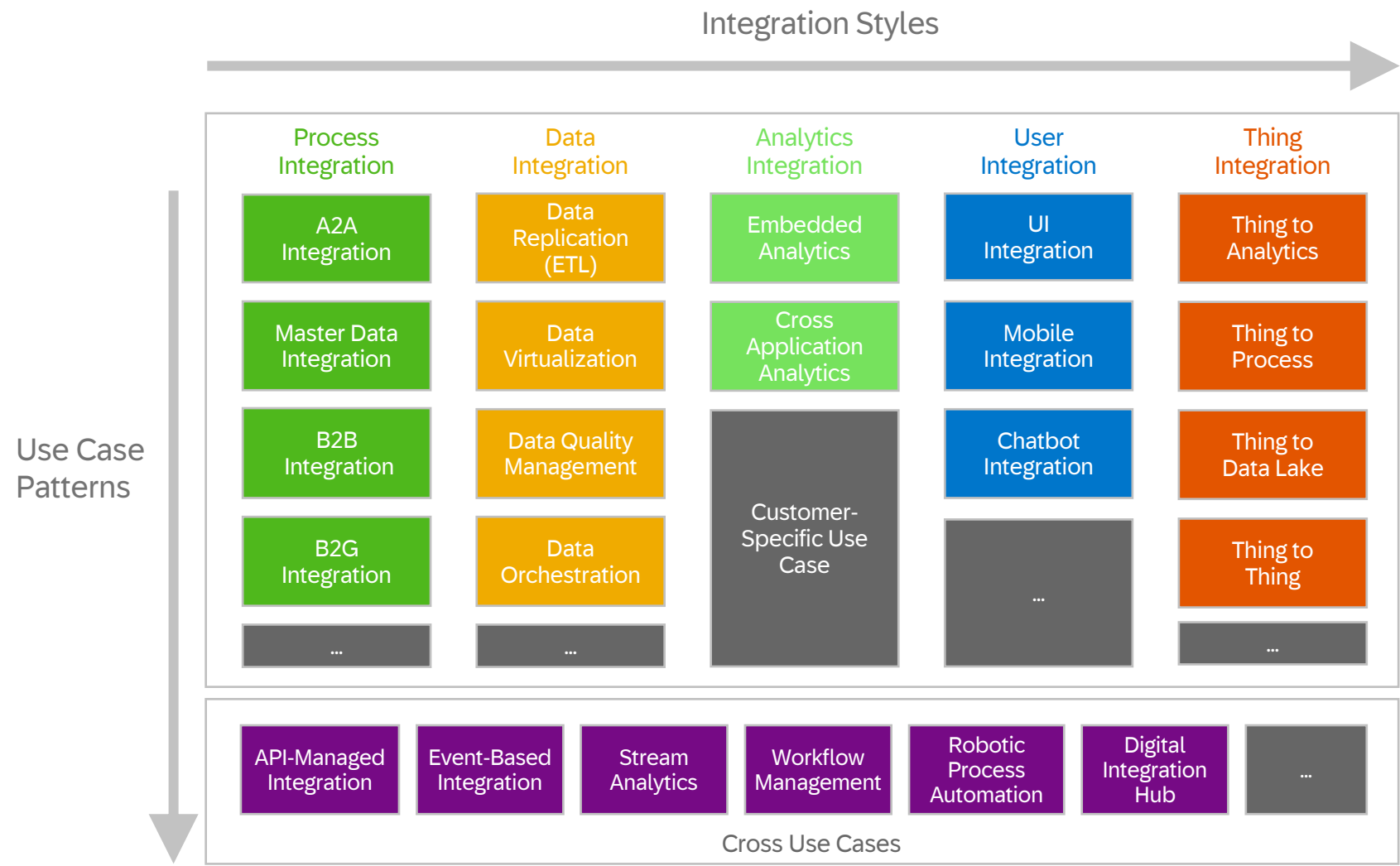
Archetypes Decision Criteria



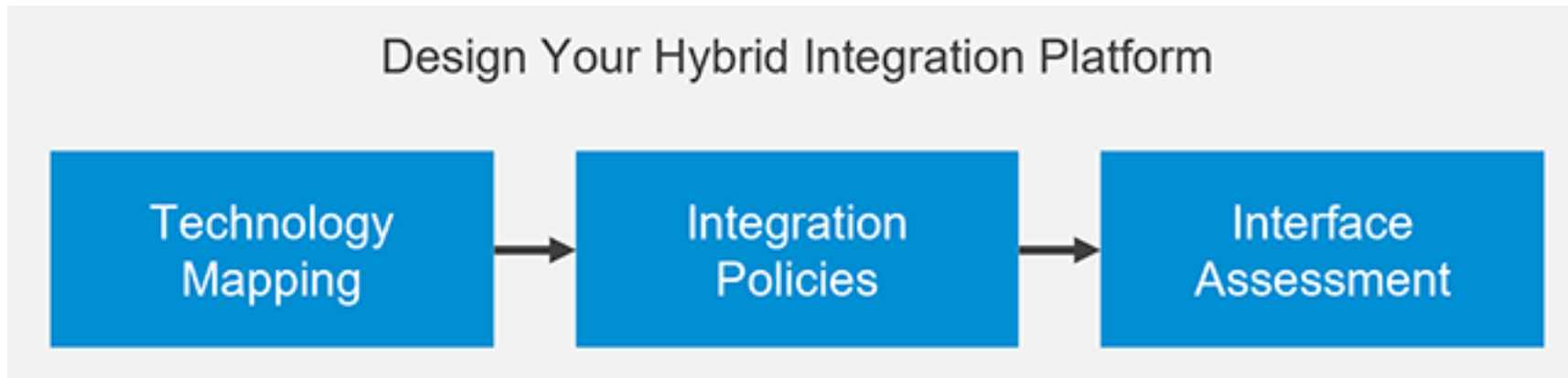
	Process Integration	Data Integration	Analytics Integration	User Integration	Thing Integration
Objective	Chaining of business processes	Synchronization of data	Deriving business insights from business applications and data sources	Omni-channel access to backend applications	Capturing and processing of real world data
Interaction Type	System-2-System	System-2-System	System-2-User	User-2-System	Thing-2-System
Coupling to Application	Process-Level	Data-Level	Data-Level / Business-Level	UI-Level	Data-Level / Process Level
Primary Trigger	Application Event	Schedule or Application Event	User Event	User Event	Thing Event
Urgency of Completion	(Near) Real-Time	Batch or Near Real-Time	(Near) Real-Time or Batch	(Near) Real-Time	(Near) Real-Time or Batch
Unit of Data Exchange	Single Objects	Bulk-Data or Single Objects	From aggregated to line item data	Single Objects or Bulk-Data	Single Objects or Bulk-Data
Specific Requirements	<ul style="list-style-type: none"> • Transactional Integrity • Reliable Messaging • Message Orchestration • B2B protocol support 	<ul style="list-style-type: none"> • Data Orchestration • Complex transformations • Data Quality Management • Big Data Processing 	<ul style="list-style-type: none"> • Local and remote data sources • Data & predictive modeling, planning • Data privacy & authentication • Data volume 	<ul style="list-style-type: none"> • Online / Offline Support • Device Management • End-User Management • Application Management 	<ul style="list-style-type: none"> • Thing Management • Edge Intelligence • IoT protocol support • Event Stream Processing

Integration Styles refined by Use Case Patterns

Technology-Agnostic Library of Integration Use Cases

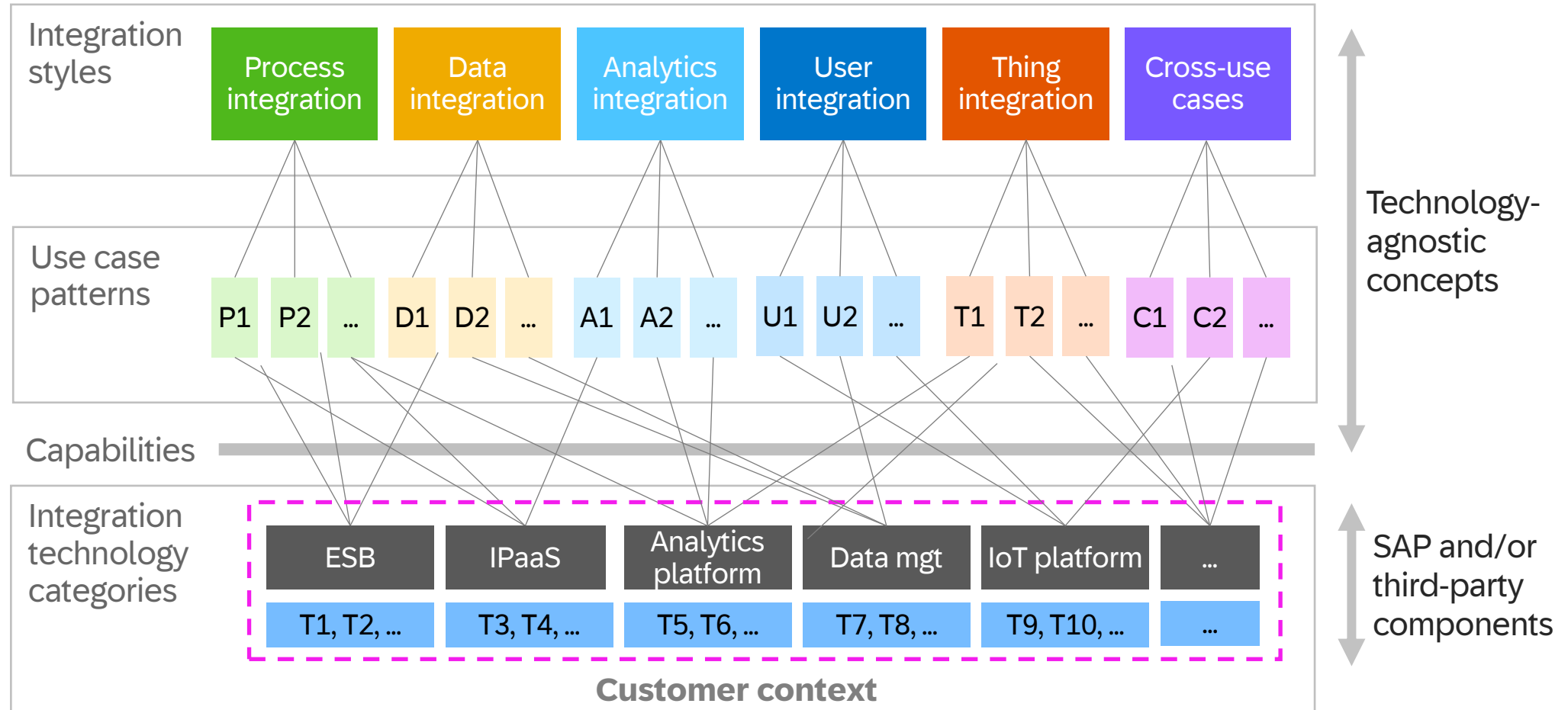


Design Your Hybrid Integration Platform



Integration Technology Mapping

Defining high level goal



Integration Policies. Process Integration Style

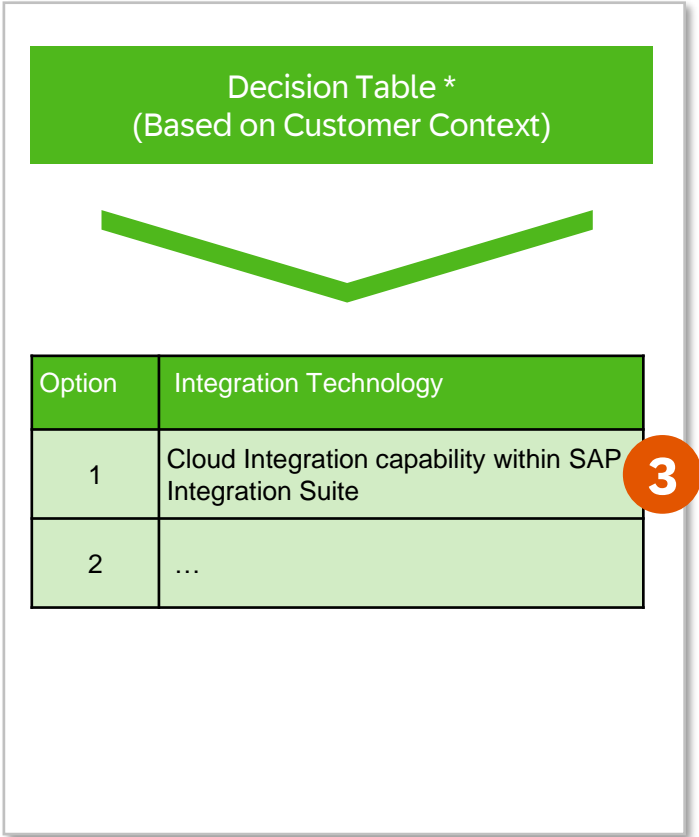
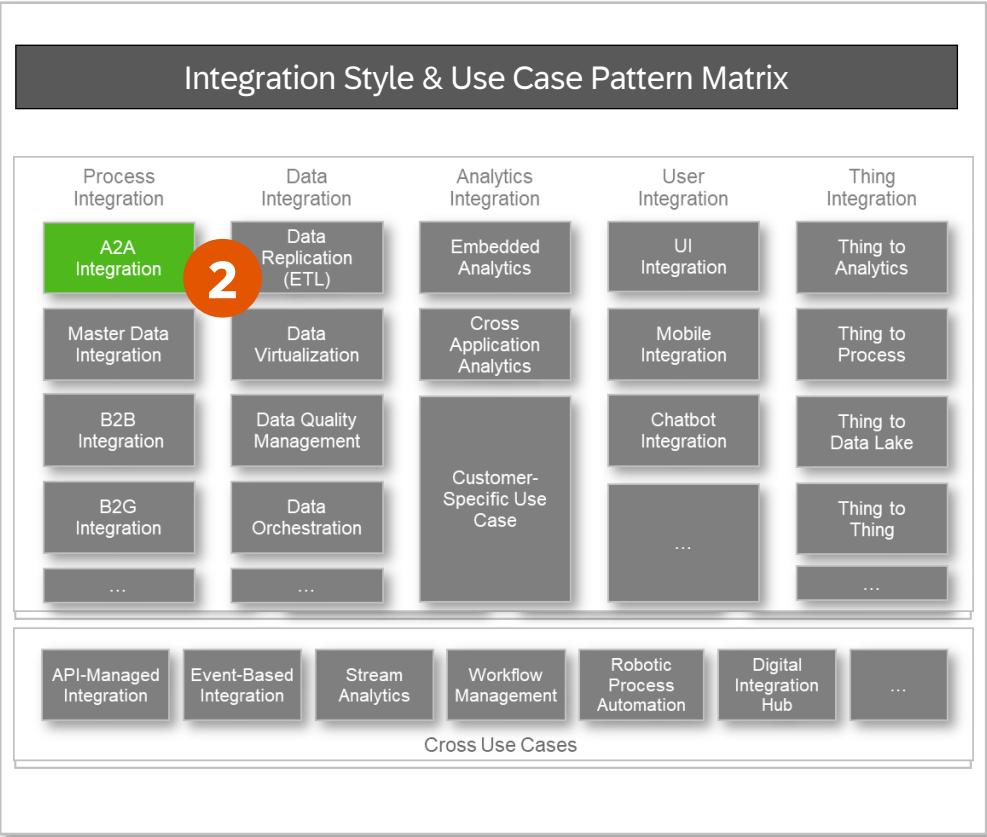
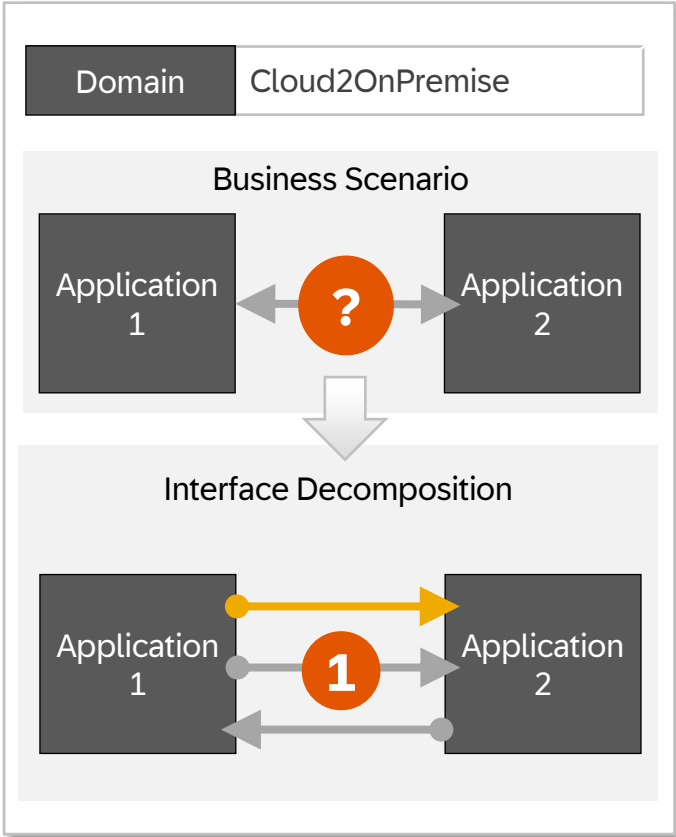
Decision Table Template



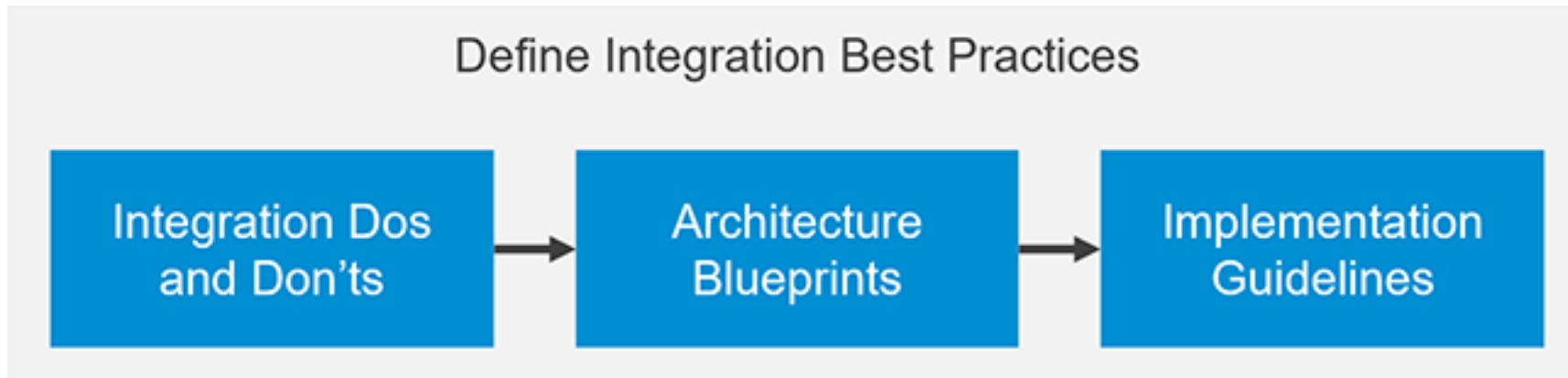
Integration Guidelines					
Integration Technology / Service <u>Sample Values:</u> 1) Cloud Integration capability within SAP Integration Suite 2) SAP Process Orchestration 3) SAP Application Interface Framework 4) Third party ...	Recommendation Degree <u>Sample Values:</u> 1) General Recommendation 2) Reasonable Alternative 3) Possible Exception 4) To be avoided ...	Description Optionally: refer to use case patterns	Relevant Integration Domains		
			OP2OP	Cloud2OP	Cloud2Cloud
Cloud Integration capability within SAP Integration Suite	General Recommendation	Use whenever packaged integration content from SAP or SAP partners is available (see https://api.sap.com/discoverintegrations) or your custom build integration scenario requires mediation capabilities (such as mappings, routings, protocol conversions).		●	●
Edge Integration Cell capability within SAP Integration Suite	General Recommendation	Use for on premise to on premise processes integration scenarios.	●		
SAP Application Interface Framework	General Recommendation	Use whenever you want business users to monitor interfaces and to do error handling as part of a SAP S/4HANA or SAP ERP (as optional add-on).	●	●	
SAP Process Orchestration	Possible Exception	Use for on premise to on premise processes integration scenarios where required functionality is not supported.	●		

Interface Assessment

Sample Interface 2: A2A Integration



Define Integration Best Practices



Process Integration

General Integration Do's and Don'ts

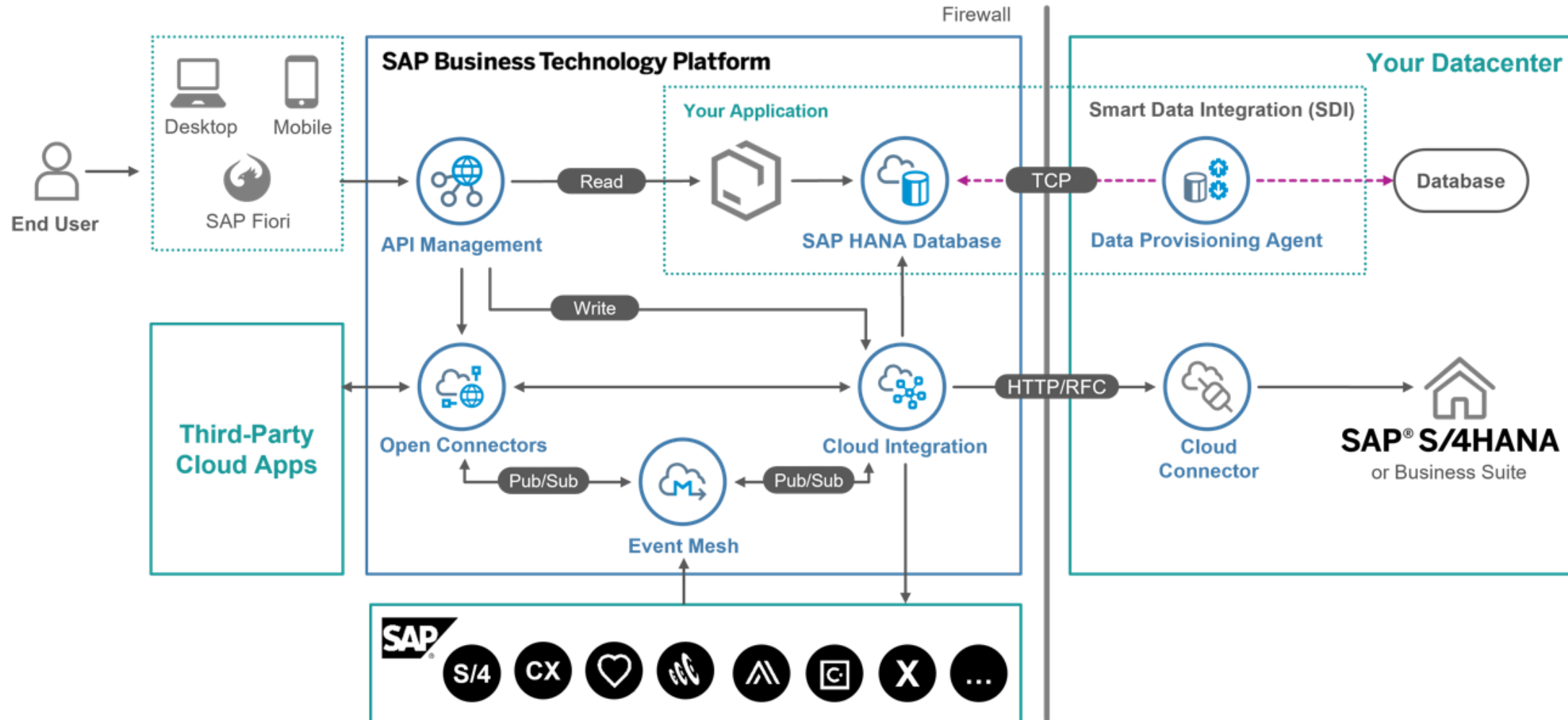


Golden rules + **Client context factors**

- Leverage pre-configured integration packages (content) wherever possible
- Decoupling of applications via asynchronous messaging and events
- Usage of synchronous calls only in selected use cases
- Avoid direct integration (point-to point) and tight coupling of applications
- Prefer real-time distribution of data over batch oriented processes
- Avoid chaining as less as possible integration runtime components (operations, monitoring, ...)
- Distribute integration logic and functionality in the most efficient way across the hybrid landscape

Architecture blueprints.

Example for Digital Integration Centre on Cloud2OnPremise



Integration Guidelines example

Cloud Integration capability within SAP Integration Suite.



A comprehensive set of integration flow [design guidelines](#) is available covering the following topics:

Guideline	Scope (examples)
Learn the basics	Helps to understand basic capabilities: <ul style="list-style-type: none">▪ Configuration · Exception handling▪ Content transport▪ Monitoring
Guidelines to implement specific integration patterns	Provides guidance on understanding basic capabilities: <ul style="list-style-type: none">▪ Enterprise integration patterns such as aggregator, splitter, content enricher, content filter
Guidelines to design enterprise-grade integration flows	Provides guidance on understanding basic capabilities: <ul style="list-style-type: none">▪ Run an integration flow under well-defined boundary conditions.▪ Relax dependencies to external components.▪ Apply the highest security standards.

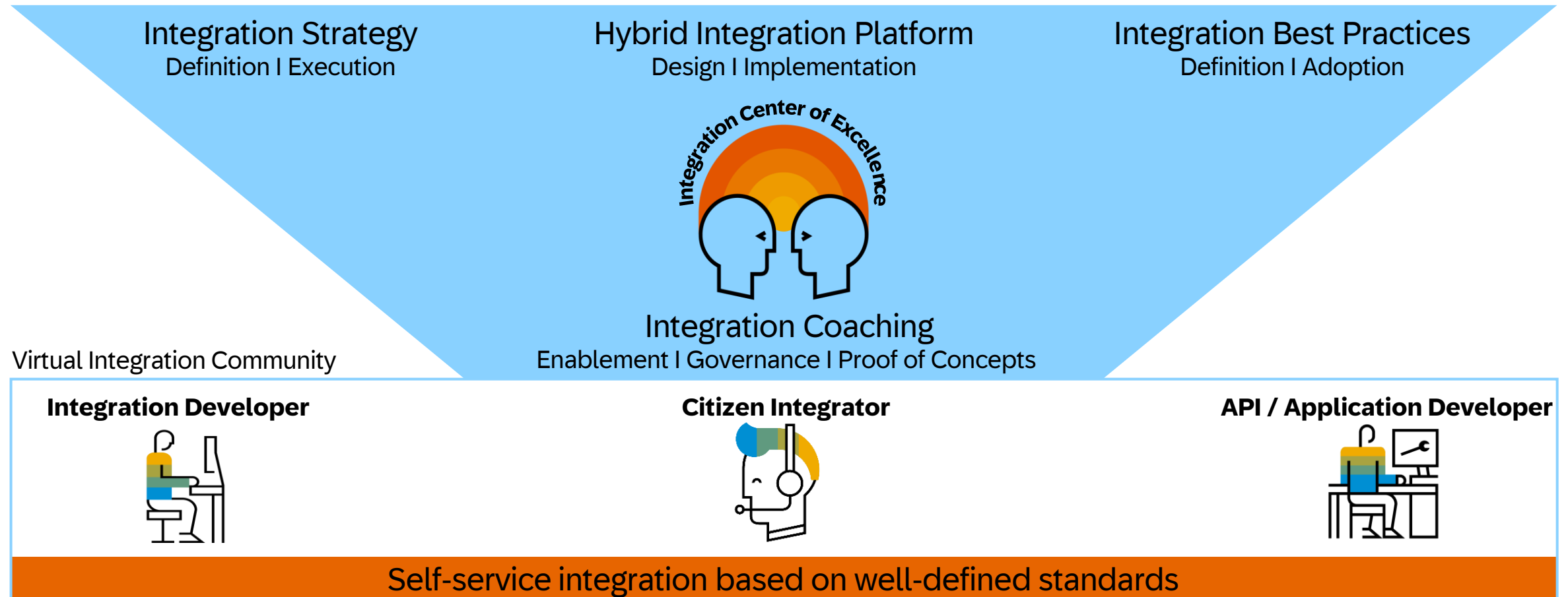
Enable a Practice of Empowerment



Integration Center of Excellence

Overview of Responsibilities. A strategic Differentiator.

Integration Center of
Excellence



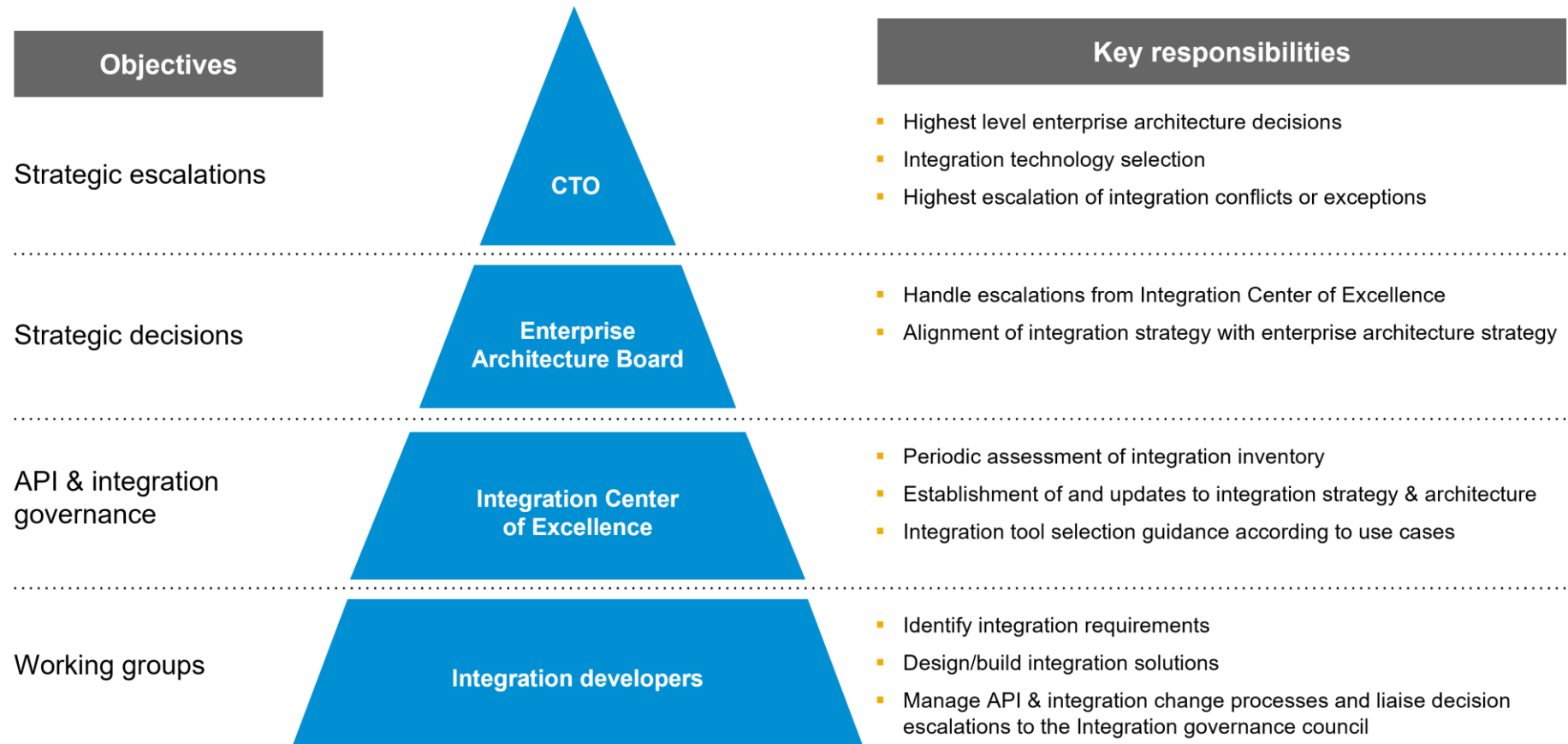
Support an agile and decentral integration development approach by shifting from a traditional Integration Competence Center towards Integration Center of Excellence. An ICoE is responsible for applying ISA-M at an organization which also includes integration coaching of a virtual integration community.

Source and further Information: [Integration as a Strategic Imperative – Part 4: Integration Democratization](#)

Integration Governance

API & Integration Governance Framework*

Integration
Governance



*Simplified customer example



The processes for integration governance has to be interconnected with the overall technology governance process of an organization. This includes defined responsibilities including escalation paths.

Integration Quality Assurance

Integration Quality Check List For Developed Integration Scenarios

No.	Topic	Questions				Remarks
1	Integration Technology Selection					
2	Integration Development					
3	Enterprise-Grade Integration Design					
4	Integration Documentation					
5	Integration Testing					
6	Integration Monitoring					



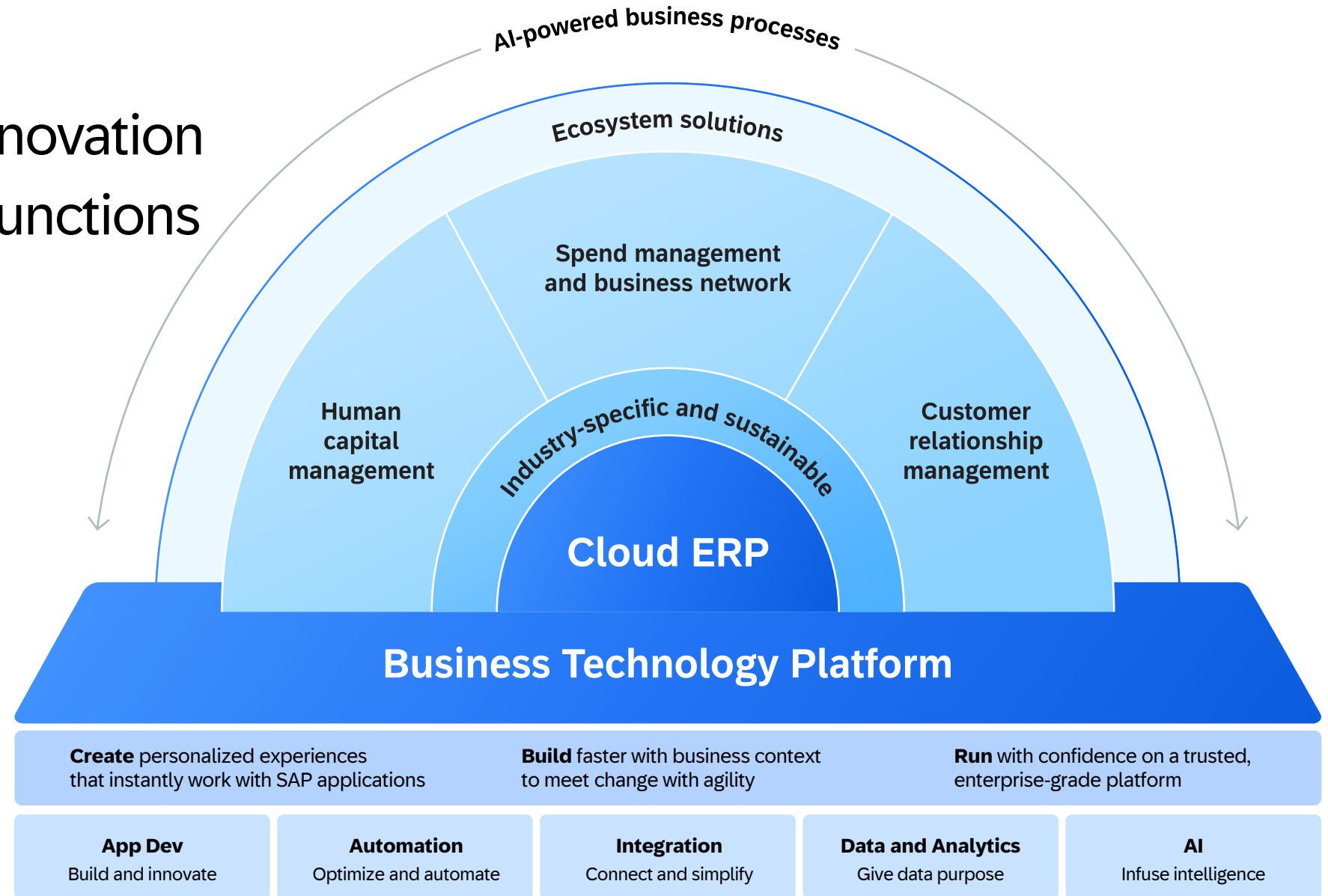
How To Use

See [Integration Quality Assurance](#)

3. Hybrid Integration Platform for Intelligent Enterprises

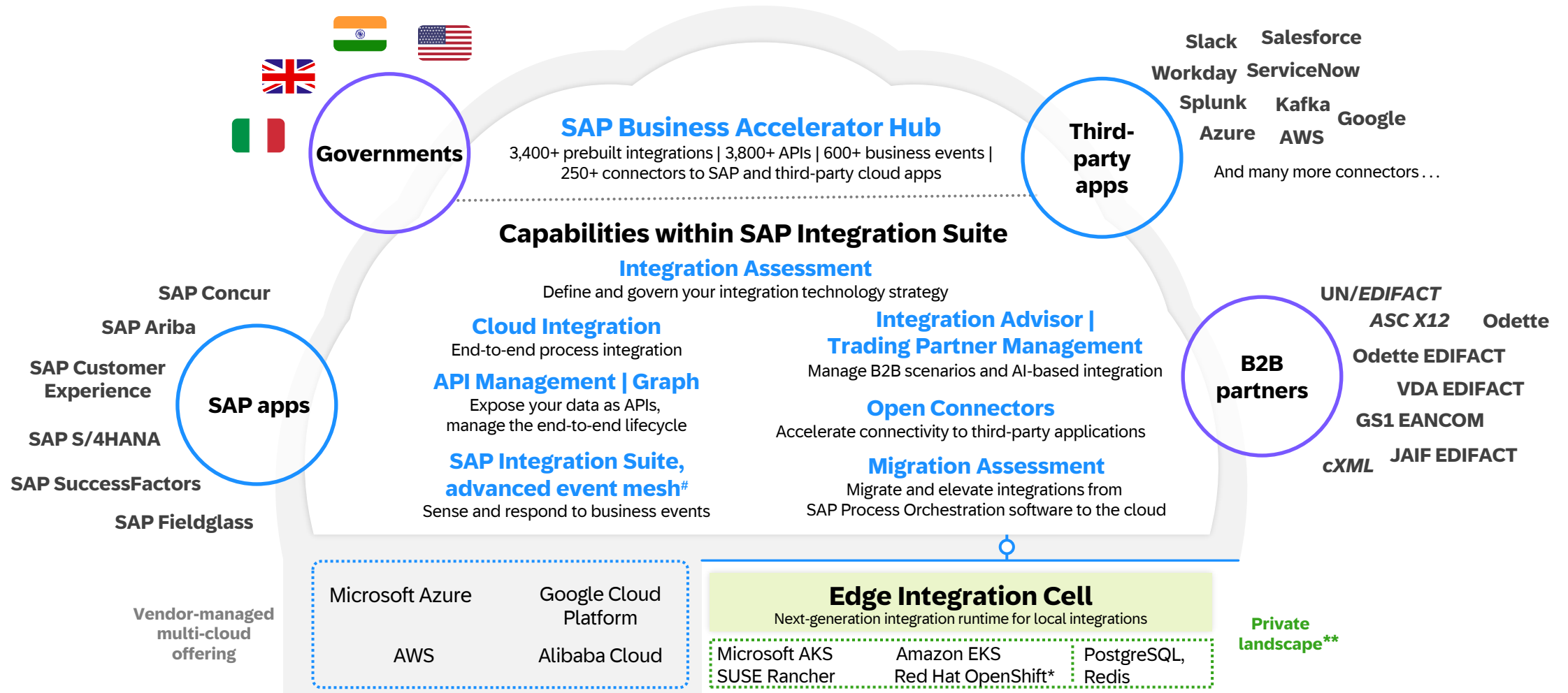
SAP BTP

Unleash digital innovation
across business functions

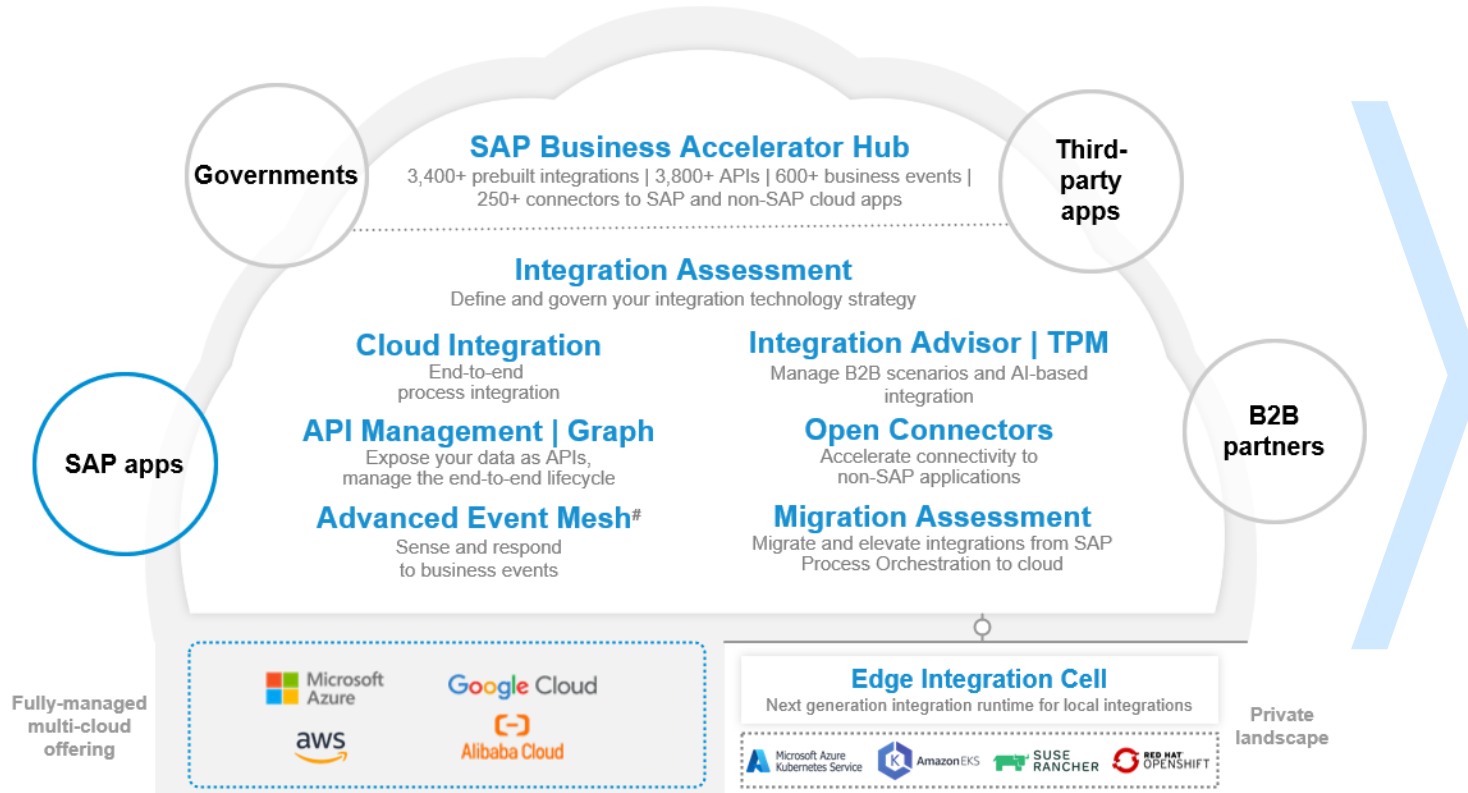


SAP Integration Suite

SAP's hybrid integration platform for the Intelligent Enterprise



Use cases



A2A integration

Chaining of business process steps between business applications by the exchange of transactional data

Master data integration

API-based exchange of master data across business applications

B2B integration

Chaining of business process steps between business partners by the exchange of transactional data leveraging standard B2B protocols

B2G integration

Transforming transactional data into predefined exchange formats and transfer it electronically to external legal or tax authority systems

API-based integration

Provisioning of omni-channel and secure access to business applications

Event-driven integration

Decoupling of applications, extensions or IoT data by messaging principles (pub/sub)

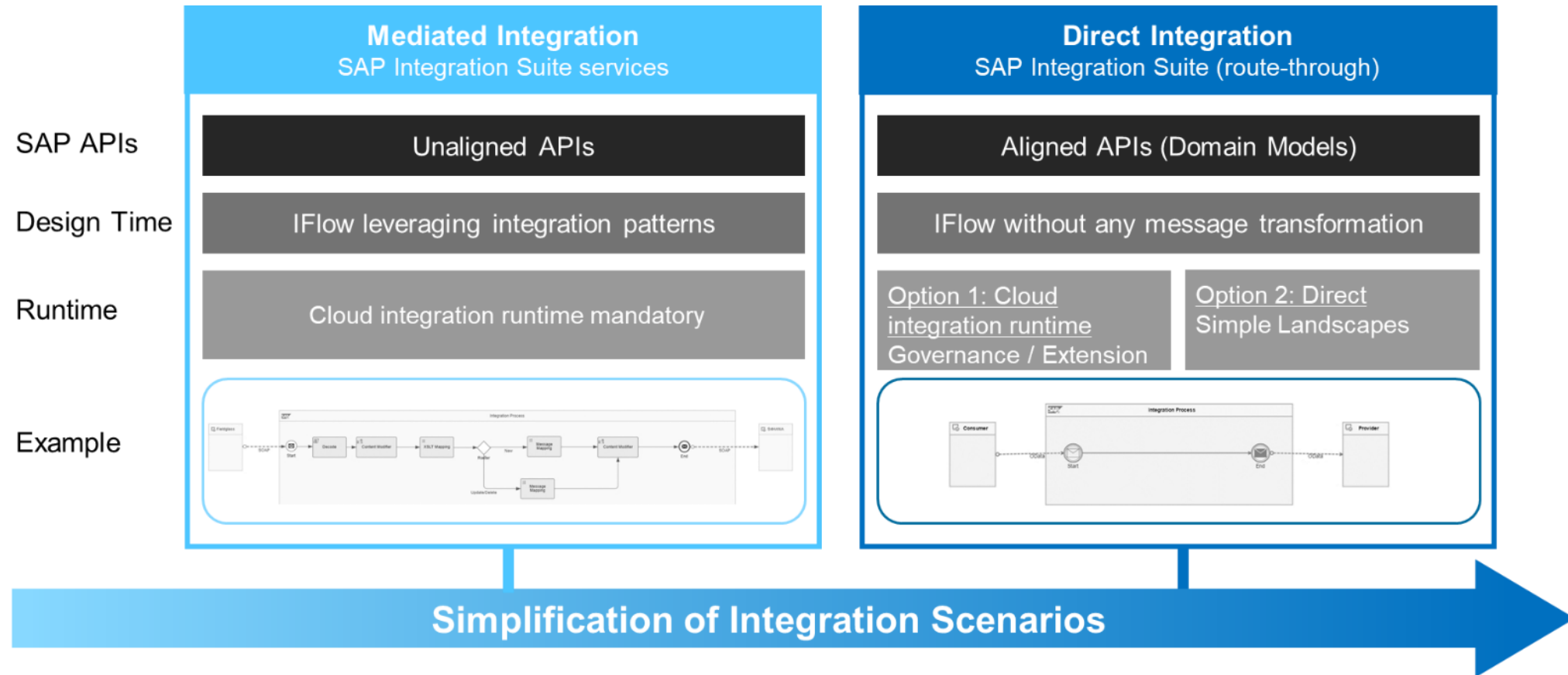
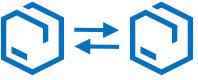
Digital integration hub

Large-scale, high-throughput APIs

Enterprise automation

Automation of business and IT processes with AI-powered tools

Evolution of SAP integration content



SAP applications can synchronize business objects with common attributes and use common semantics, which reduces SAP-to-SAP integration efforts for customers: New implementations can take advantage of SAP Master Data Integration for scenarios for which SAP has delivered aligned domain models. SAP Integration Suite supports both types of integration scenarios – those for unaligned as well as aligned APIs.

[Integration Architecture Guide for Cloud and Hybrid Landscapes](#)

Comprehensive set of connectivity options

SAP Integration Suite

250+ connectors to accelerate integration development

Open spec connector

- HTTP, HTTPS (incl. REST), SOAP
- FTP(S), SFTP
- Mail (SMTP, IMAP, POP3)
- OData V2 & V4
- IDoc, RFC, XI
- AMQP, JMS**, AS2**, AS4**
- Kafka
- JDBC, LDAP

Connectors to SAP & third-party apps

- SuccessFactors, Ariba
- AWS (S3, SQS, SNS, SWF)
- Microsoft Dynamics, Microsoft Storage***
- Salesforce
- Workday**, ServiceNow**
- Dropbox***, Slack***, Splunk***, Microsoft Azure Storage***, Microsoft SharePoint ***, RabbitMQ***, MDI***
- Twitter, Facebook
- SugarCRM
- Elster*
- ...

Open connectors to third-party apps

- Cloud storage
- Collaboration
- CRM
- ECommerce
- ERP
- eSignature
- HCM
- Field services
- Finance
- Help desk
- Messaging
- Payments
- Social
- ...

Adapters built by partners

Example list

- iShare
- Kafka
- MQTT
- Office 365
- SharePoint



List of connectors by partners in [SAP Business Accelerator Hub](#) -> partner content

Adapter development kit

- [Framework](#) to create new adapters
- [Certification](#) available



Full list of connectors by SAP in [SAP product documentation](#)



Full list of open connectors in [SAP product documentation](#)

* for German fiscal management

** with Integration Suite, standard and premium editions / SAP Cloud Integration, enterprise edition / CPEA

*** with Integration Suite, standard and premium editions

Top 10 reasons to choose SAP's Integration Suite as your comprehensive enterprise-wide integration platform

1

Versatile and enterprise-grade integration platform covering all integration styles and patterns: A2A/B2B/B2G, APIs, events, digital integration hub, digital ecosystems

3

Rich set of connectivity options and standard adapters for A2A and B2B/B2G integration, 250+ **connectors** for SAP and non-SAP integrations

5

Simplify the process of **business partners collaboration** with the **power of artificial intelligence**

7

Strong focus on enterprise-grade security such as data isolation, multitenancy, content encryption and signing, single sign-on, and secure on-premise connectivity

9

Create **simple connected digital experiences** for your consumers, partners, and employees with full lifecycle management of your APIs

2

Proven prebuilt integrations, APIs, events, domain models to jump-start your integration projects

4

Vendor-managed multi-cloud service in major hyperscalers as well as customer-managed service providing flexibility to run integrations across multiple environments including private landscapes

6

Benefit from SAP's **continued innovation and long-term commitment** to simplify and accelerate enterprise integration

8

Share and learn from a **community and partner ecosystem**

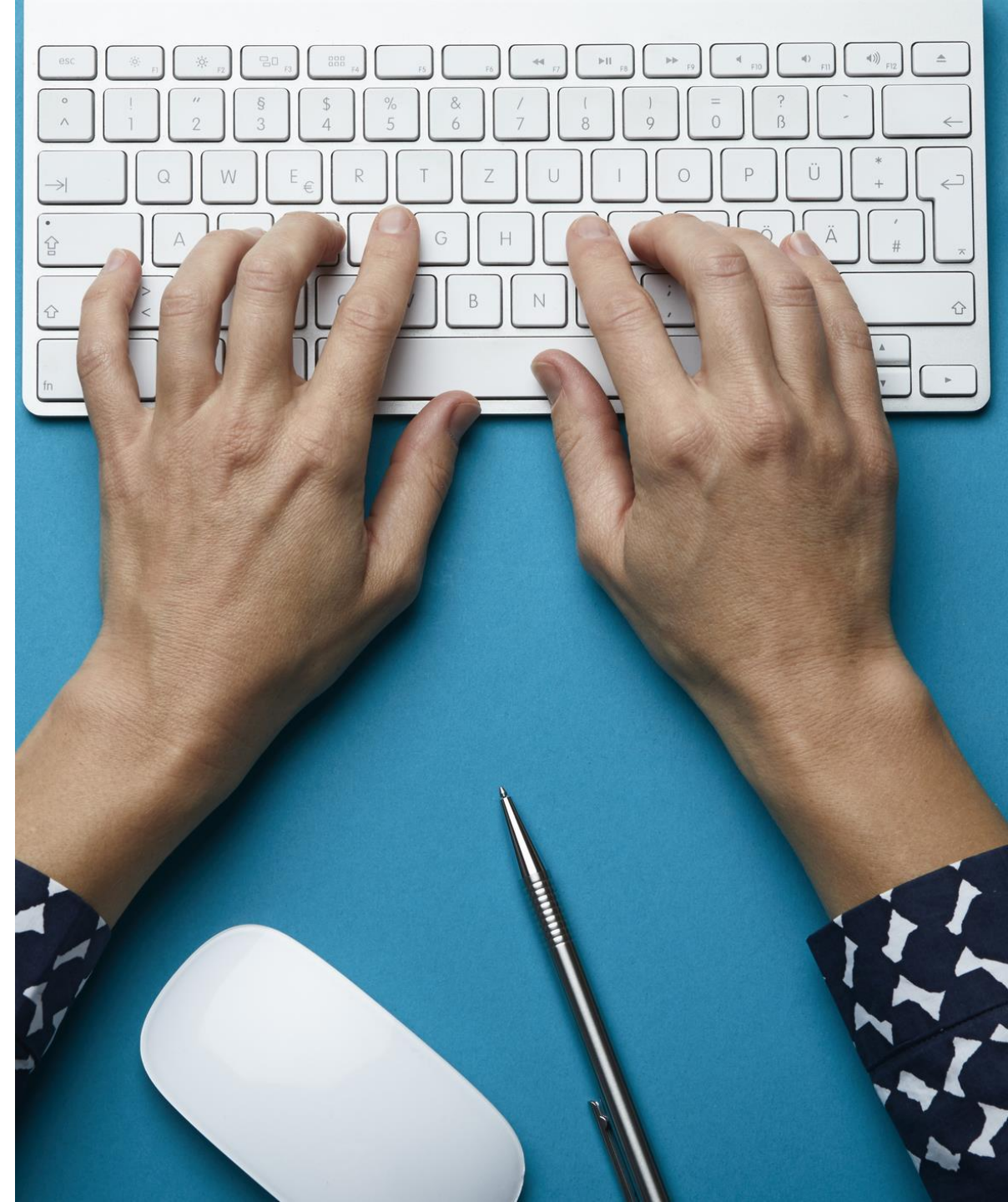
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SAP Integration Solution Advisory Methodology with strong customer focus to make our customers run better

Summary

Clean Core Integration...

- Key aspect related to extensibility for a clean core landscape
- Driven by ISA-M to leverage enterprises capabilities to keep clean processes
- Utilizing SAP Integration Suite covering all integration use cases, such as A2A, B2B, B2G, API-based, and event-driven integration
- Drives the digital transformation of customers across industries globally



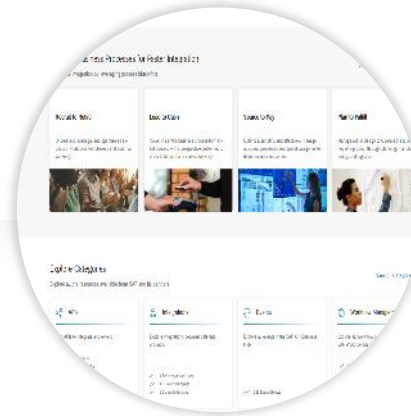
Jump start your **integration journey with SAP**



CIO Guide

SAP's hybrid integration platform for the Intelligent Enterprise.

[Read now >](#)



SAP Business Accelerator Hub

provides a single access point to prebuilt integrations, APIs, events, and more.

[Explore now >](#)



SAP Community

connects thousands of users to share ideas, learn, and innovate.

[Visit the Community >](#)

[Blog](#) | [Documentation](#) | [Try it out with free BTP Trial](#) | [“Get started” mission at SAP Discovery Center](#)

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