

# **Architecting for the Hybrid Multi-Cloud Enterprise**

Damien Johnson, SAP America June 18th, 2020

**PUBLIC** 

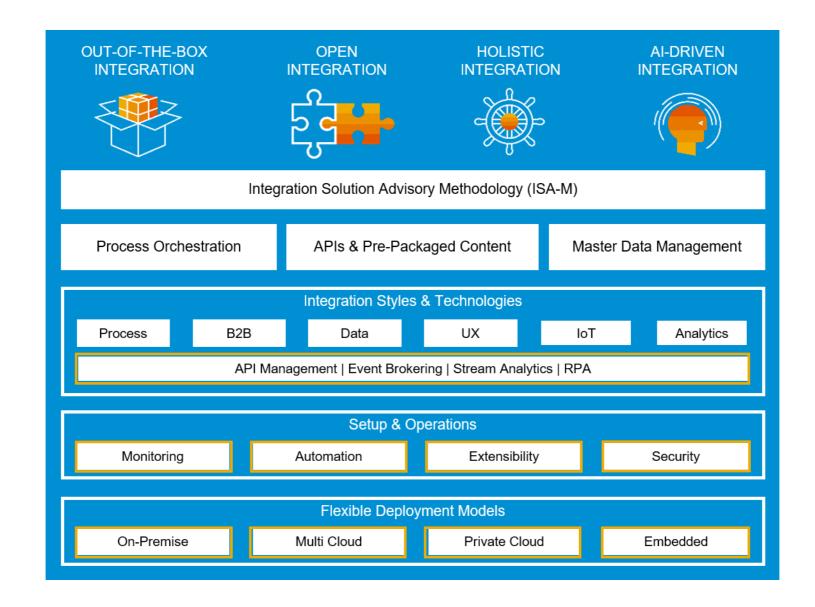


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Living in a Multi-Cloud Reality

SAP's Cloud Centric Architecture Adoption

Making it All Work Together

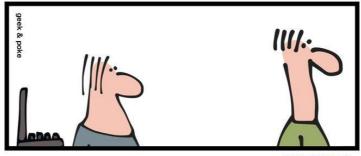
Things to Remember

#### Selecting the correct architecture is so simple.....

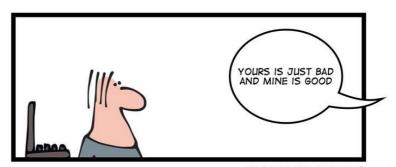
What is a good architecture?



IT ARCHITECTURE IS NOT ALWAYS SIMPLE



FORTUNATELY...



© Geek&Poke

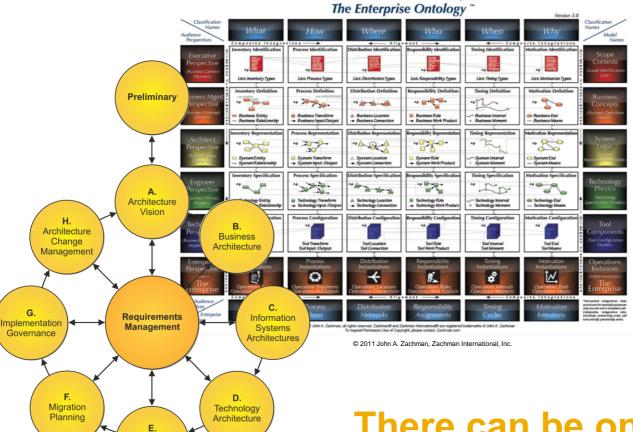
... MOST OF THE TIME IT IS

5

# Living in a Multi-Cloud Reality



#### The Zachman Framework for Enterprise Architecture





There can be only one...

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Opportunities and Solutions

#### **Leveraging Cloud...**

#### **SOME BENEFITS**

#### SaaS

- -Operational flexibility
- -Financial flexibility
- -Speed

#### **PaaS**

- -Full stack development ease
- -Access to innovation technologies
- -Speed

#### laaS

- -Cost reduction/optimization
- -Lower Risk/operational
- -Elasticity/growth

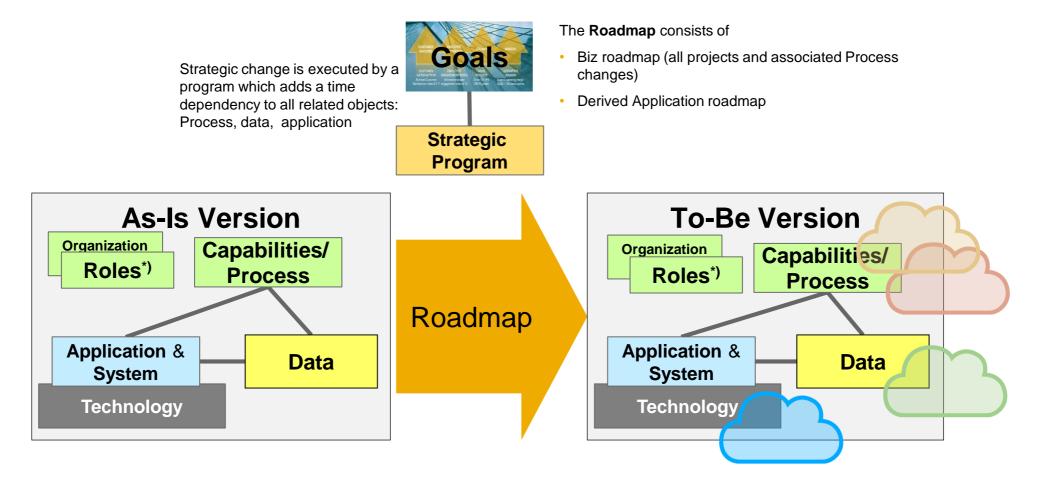
#### **SOME CONSIDERATIONS**

Ungoverned proliferation – increase per user costs Data proliferation and silos Business process fragmentation

Talent/skills shortfalls Inconsistent adoption Lock in

Unconstrained usage

#### **Enterprise Architecture Facilitates Strategic Change**



"The whole idea of Enterprise Architecture is to enable the Enterprise to address orders of magnitude increases in complexity and orders of magnitude increases in the rate of change." John Zachman

Gartner predicts that the 10 biggest public cloud providers will command, at a minimum, half of the total public cloud market until at least 2023.

Most organizations adopt a multicloud strategy out of a desire to avoid vendor lock-in or to take advantage of best-of-breed solutions,"

Enterprise IT spending for cloud-based offerings will grow faster than traditional (noncloud) IT offerings through 2022

"There are many nuances between platforms, and trying to build services in more than one simultaneously is challenging,"

© Gartner



#### What we have heard from our customers

Enterprises are migrating to cloud providers at an accelerated pace . . .

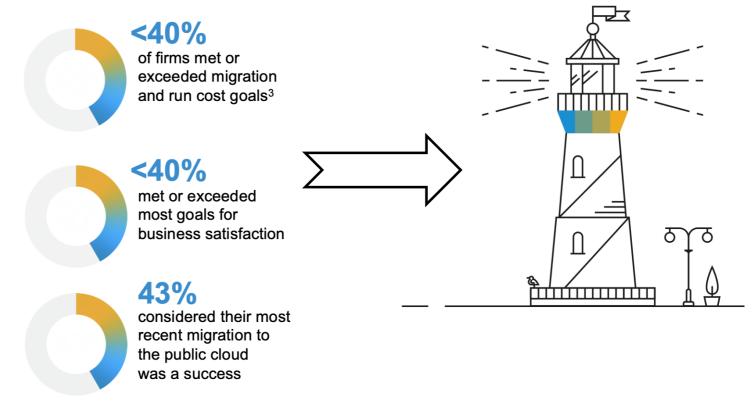
80%

of enterprises will no longer use traditional data centers by 2025<sup>1</sup>

68%

of cloud services today are delivered by Hyperscalers<sup>2</sup>

<sup>1</sup> Gartner, "The Data Center is Dead", July 2018 <sup>2</sup> Mission Critical Magazine, "Experis Predict the End is Nigh for Enterprise Data Centers, Long Live the Hyperscaler," Cotober 2018 ... But customer feedback has been mixed at best ...



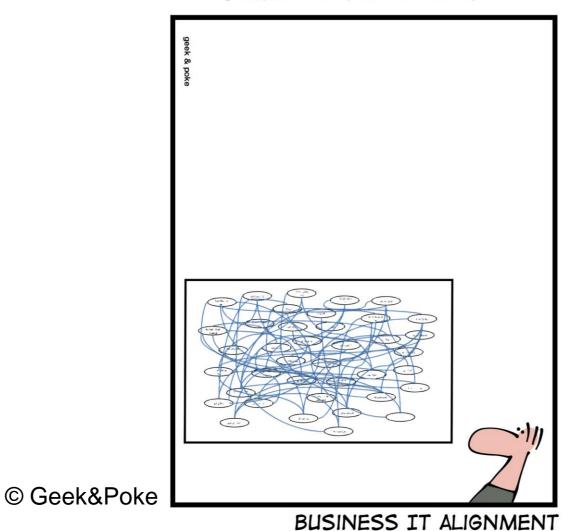
<sup>3</sup> The Wall Street Journal, "Lift-and-Shift Cloud Strategies Can Be Costly," December 201

# SAP's Cloud Centric Architecture Adoption



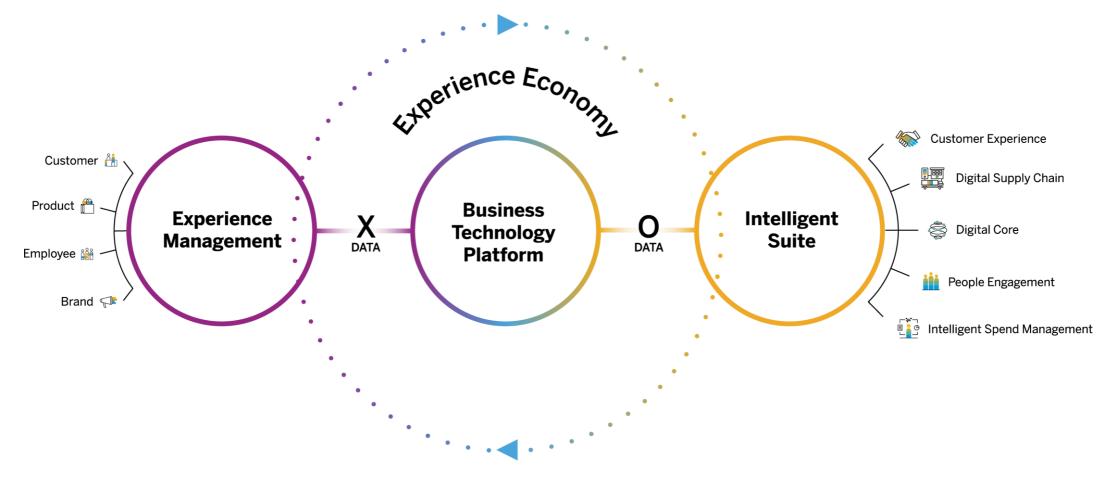
### Business and IT alignment is so easy...

#### SIMPLY EXPLAINED



#### **Intelligent enterprises**

#### Turn insight into action, to win in the experience economy



**Listen, Understand & Act** 

#### **SAP S/4HANA**: the right solution for your needs



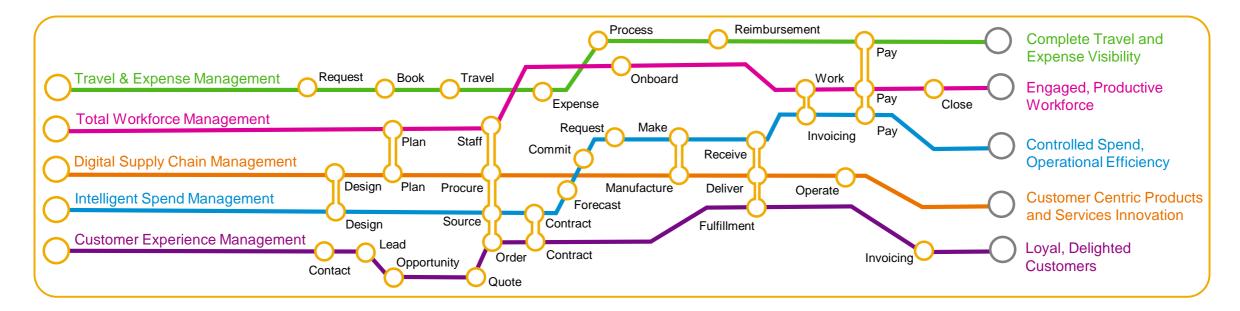
### ONE Codeline ONE Data Model -- ONE Semantic -- ONE UserExperience

	SAP S/4HANA Cloud SaaS	SAP S/4HANA AnyPremise on any infrastructure
Implementation	Greenfield with data / configuration migration Azure	Greenfield or conversion of existing implementations
Upgrades	2-4 x year, managed by SAP	Customer driven and managed
Scope	Full S/4HANA scope of core ERP & extended LoB content	Unlimited variety of SAP and Partner Add-ons
Extensibility	In-App & Side by side via SCP / Extensibility Framework	Unlimited customer specific customization, modification and extensibility
	API Hub with >300 APIs	
Deployment	laaS	laaS, Customer Data Center, Hosting Providers
Configuration	Standardized, Best Practice / Model Company based	Model Company as starting point (recommended)
	Restricted IMG access	Open IMG access
Operations	99.9% Availability and High-Availability	Customer and provider defined
Security	SAP Cloud security and data center strategy as SPOC	Shared customer / laaS obligation
Licensing	Subscription-based	BYOL + infrastructure subscription

# SAP's Intelligent Enterprise Framework Helps Build Agility, Responsiveness and E2E Visibility Across the Value Chain

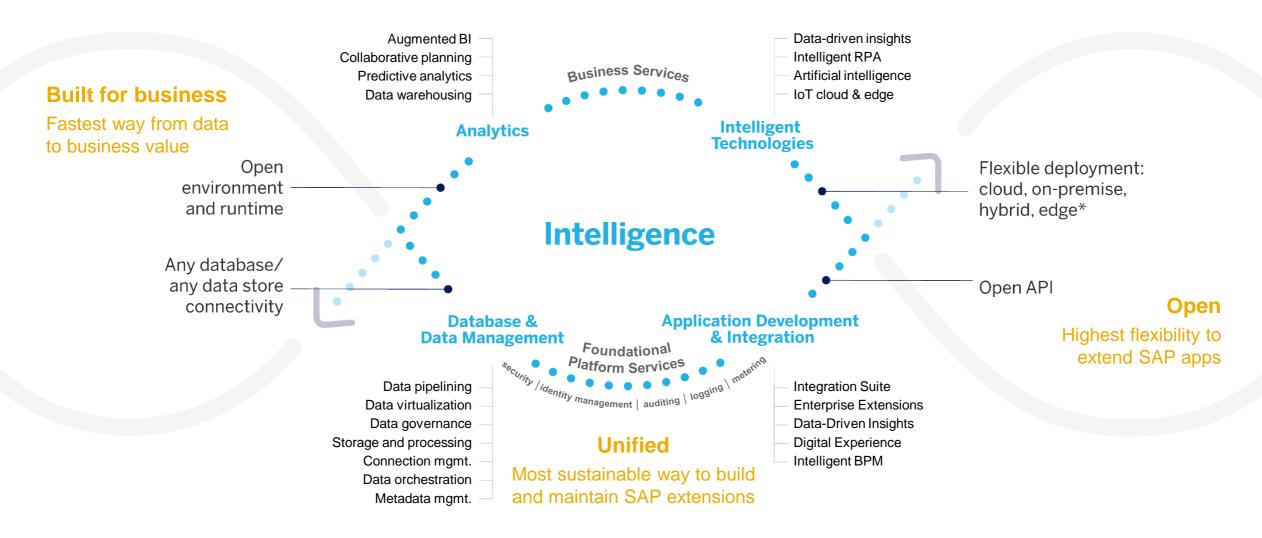
#### **SAP "Metro Map" for E2E Business Processes**

Seamlessly connecting your customers, partners, suppliers and employees across each end-to-end process, while providing complete enterprise-wide transparency

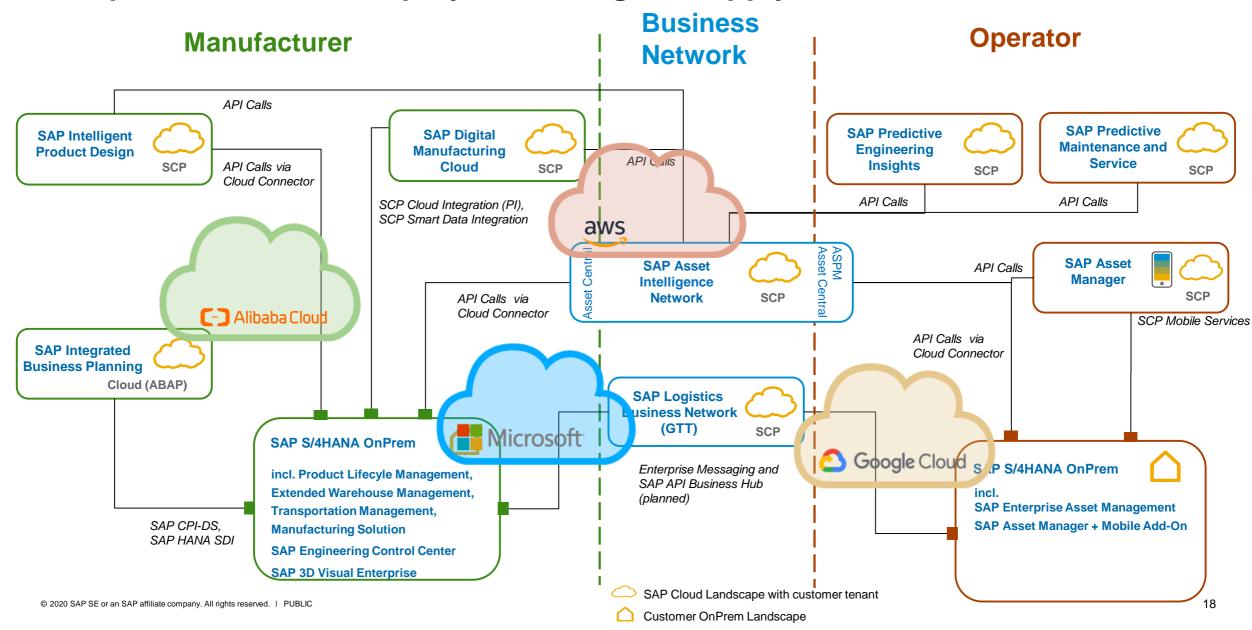


#### **SAP Business Technology Platform**

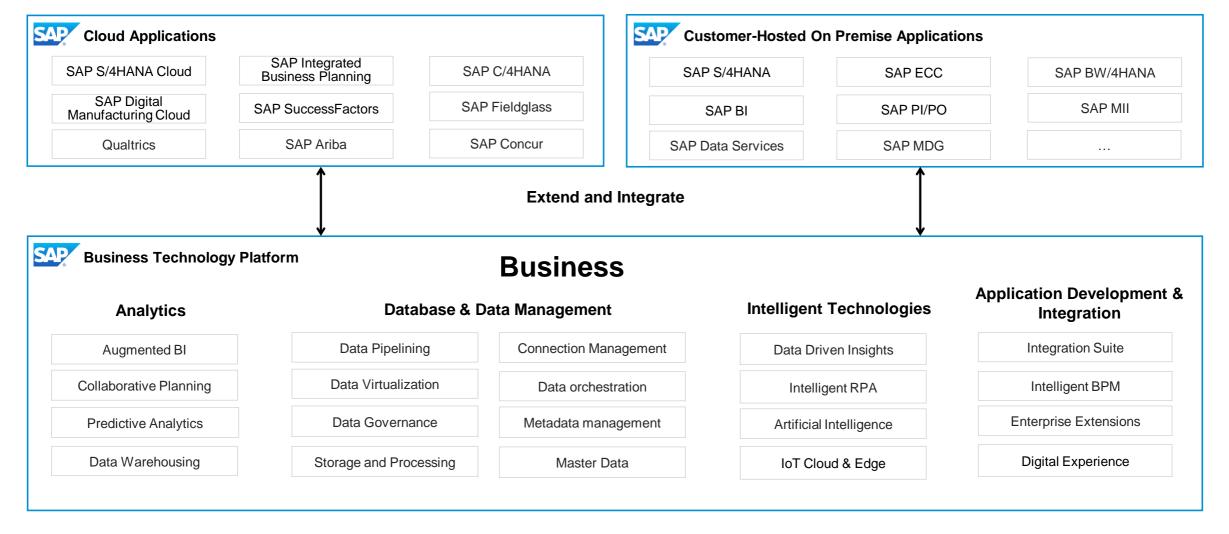
#### Powered by SAP Cloud Platform



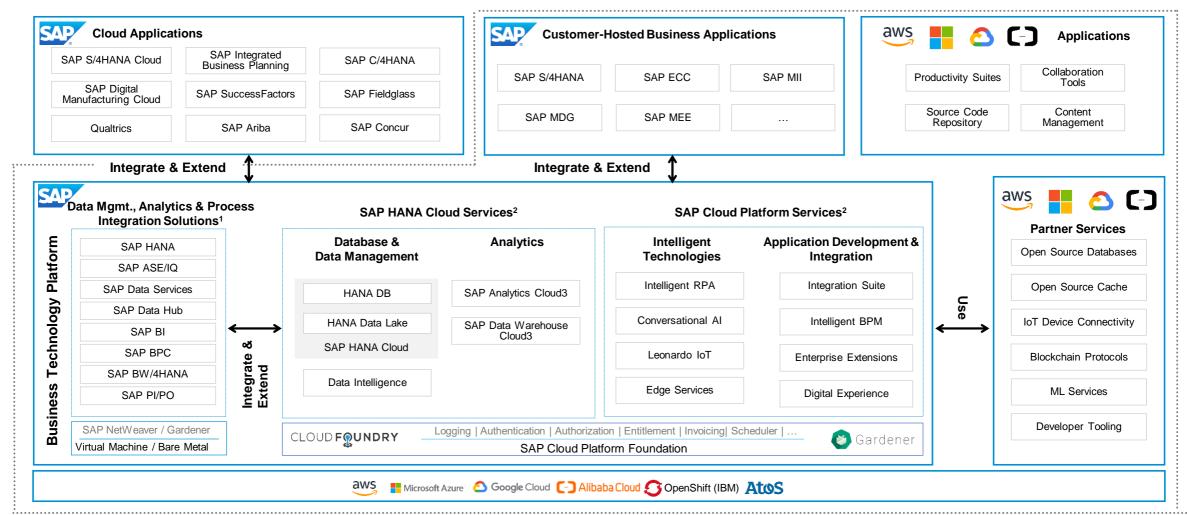
#### Sample Architecture Deployment – Digital Supply Chain



#### **Business Technology Platform – Capability overview**



#### Business Technology Platform – Component deployment diagram



<sup>&</sup>lt;sup>1</sup> Customer Managed

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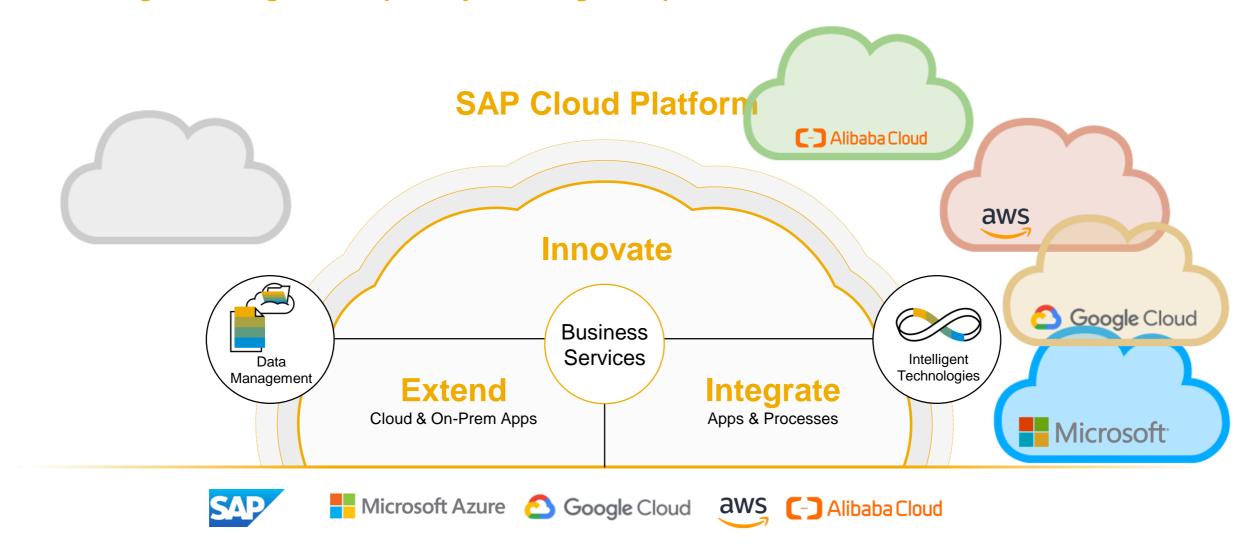
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<sup>&</sup>lt;sup>2</sup> SAP Managed

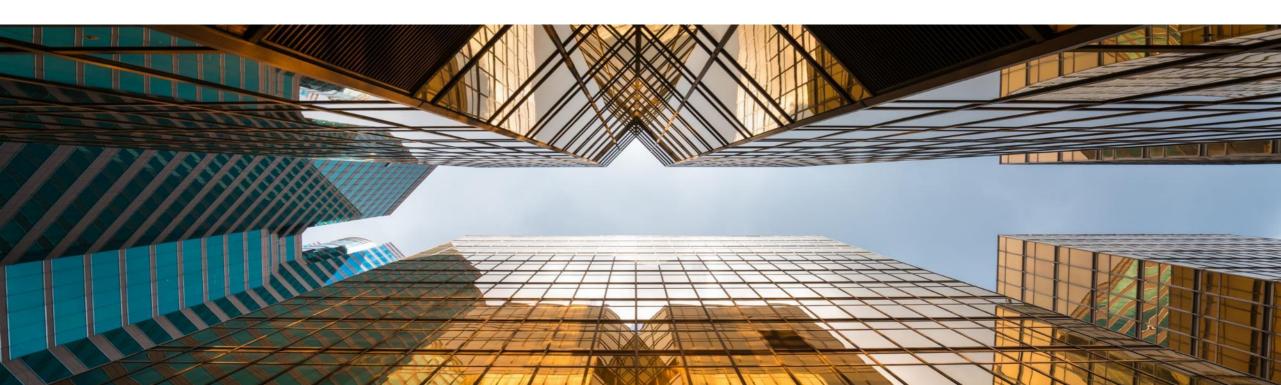
<sup>&</sup>lt;sup>3</sup> SaaS Applications

#### **SAP Cloud Platform**

**Accelerating the Intelligent Enterprise by Focusing on Rapid Business Results** 



# Making it All Work Together



#### **SAP Cloud Based Architecture Concepts**

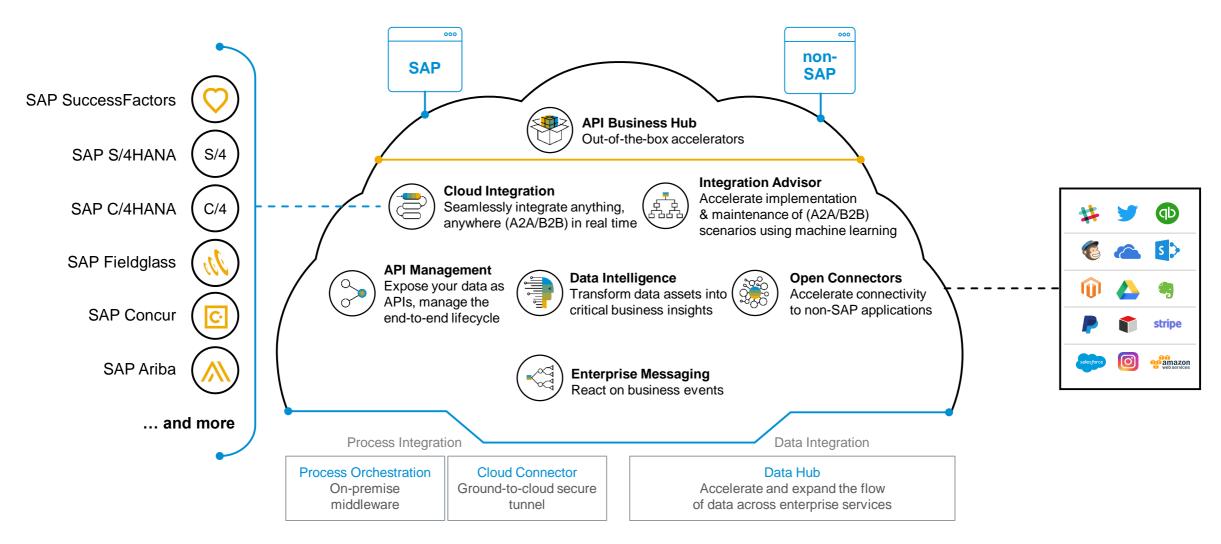
Legacy DC based **SAP Any-Premise Applications** SAP & Non-SAP SaaS applications running on laaS **Applications Platform Services Compute Services** Storage **Analytics Databases Platform Application Integration Developer Tools** IoT & ML Security Mgmt laaS Provider Virtualized Infrastructure & Platform Services Compute, Block Storage, Document Storage, CDN, DNS, Firewall, VPN

#### **SAP Architecture – Sample Capability View**

#### **Business Applications on laaS SAP SaaS Applications Customer Applications SAP Application** Legacy Applications – Own DC SAP and Non-SAP SaaS Business **Customer Activity Repository ERP** Application **Application** SAP PO, SAP GRC Warehouse Management SAP IS, SAP MDG, SAP DS **Solution Manager Platform Services Compute Services** Storage Data Lakes Databases Intelligence Data Catalog Blob SQL Database/WH Containers **RPA Services Data Lake Container Service** Queues **Document DB** Conversational UI Data Lake Store Files Serverless Redis Cache Disks Columnar DB Function **Application Integration** IoT & ML Security **Developer Tools Platform Management** Management Portal DevOps **API Management Key Vault** IoT Pipeline Management Platform Monitor Middleware Service Bus **Security Automation** Event Integrated Development Tool **Policy Management Data Integration Services** Stream Analytics M-Factor Authentication Mobile App Development Scheduler **Machine Learning Notification Services Machine Learning Queue Services Directory Services Event Management** Security Portal Infrastructure Services Virtual Network Virtual Machines App Gateway DNS SDN Disks Traffic Manager Load Balancer Backup Site Recovery Health Monitoring Compute, Block Storage, Document Storage, CDN, DNS, Firewall, VPN

#### **SAP Cloud Platform: Integration Suite**

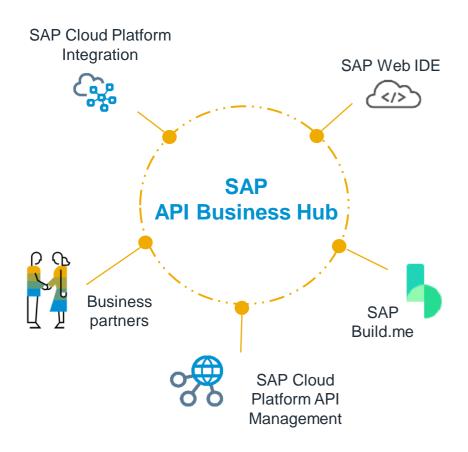
For hybrid and heterogenous environments





#### **SAP Cloud Platform API Management**

Secure, manage & govern APIs in the cloud





## Fine grained Access Control of API Assets realized via Role based permissions

- Permissions based on Roles for Discovering Products and Consuming Applications in DEV Portal.
- System prompts the Admin of a Role is missing / deleted.
- Error proof method to create API Proxies by changing Properties from existing templatized API Proxies, flexibility in managing multiple proxy virtual host endpoints, visually appealing interface.

## Discover diverse catalog – SAP API Business Hub Themes, search, filters and featuring

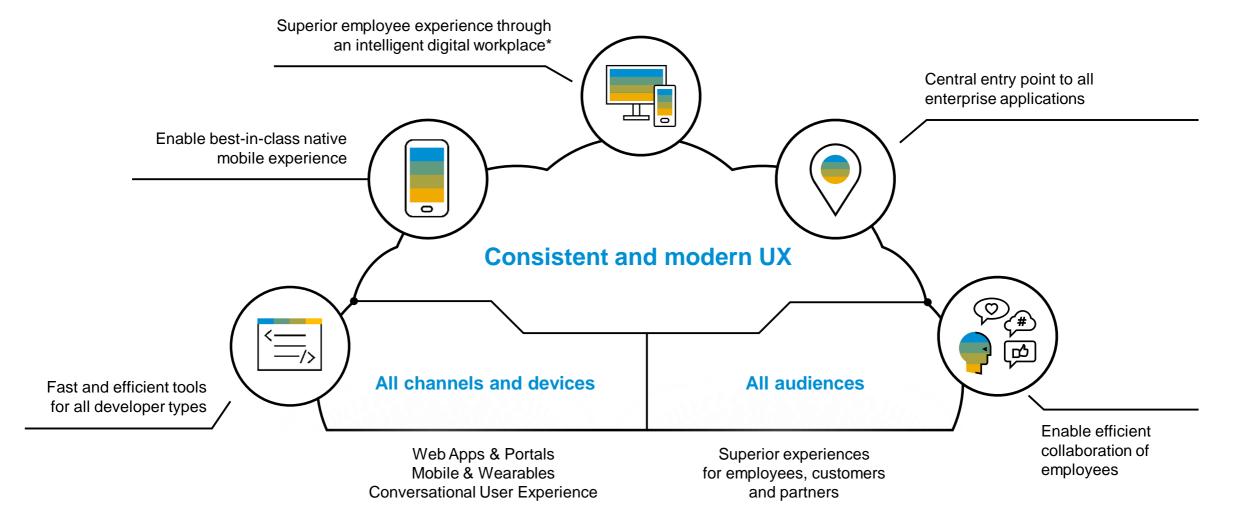


- New user experience that draws user to the most popular of the 250+ packages
  - Product themes, search and filters help users navigate 830+ integrations and ~750 APIs
- Favorites and Subscriptions to keep user up to date with the latest content

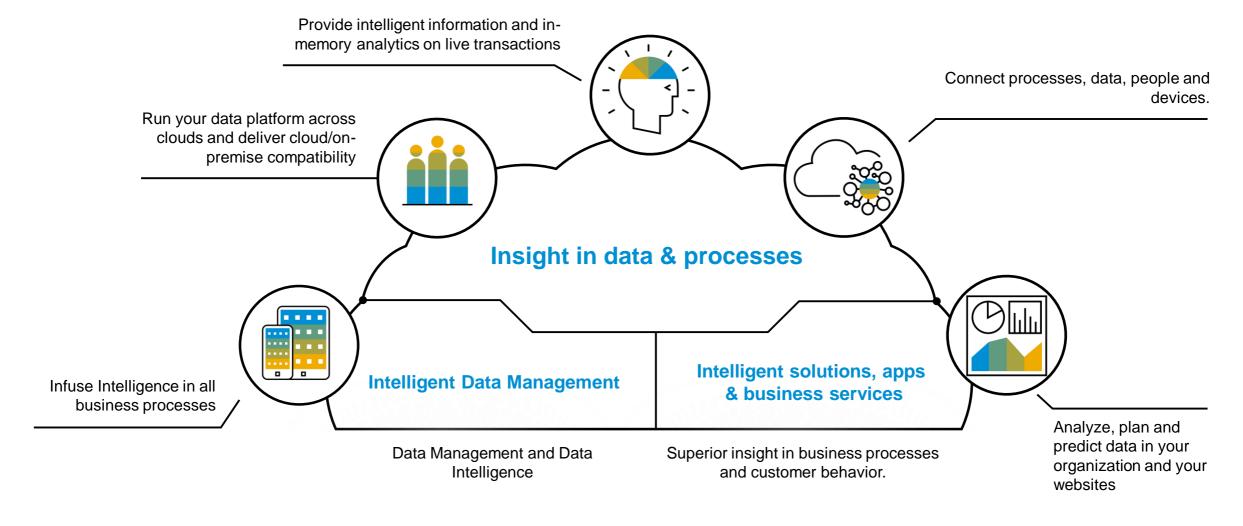
#### SAP Cloud Platform as an intelligent BPM Platform

Create Capital **Review CAPEX Create CAPEX Approve Provide budget Measure ROI** project/ **Expenditure CAPEX** submission request investment (CAPEX) Conversational Workflow **User Experience** & RPA ••• Decision **Live Processes** Inbox Management **Process Flexibility Process Intelligence** Manage Workflows **Process** Visibility & Decisions Configuration of process variants Integrated Analytics Process extensions **Process Mining Process Benchmarks** Decisions and responsibilities

#### SAP Cloud Platform as a Digital Experience Platform



#### SAP Cloud Platform as a Platform for Data-Driven Insights



# Somethings to Remember



#### Finally, some things to keep in mind

**Elastic** ≠ Low cost

**Data egress** 

**Data Gravity** 

Latency and bandwidth and \$

Global backbones from cloud providers & POPs

Network peering and \$

**Continuous chaos** 

Lifecycle and governance

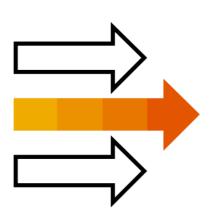
In house skills and cloud skills

**Privacy & secrecy** 

**Process vs data integration** 

**End-2-End process monitoring & management** 

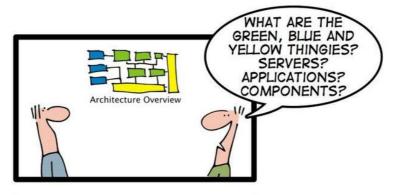
**SLA** synchronization

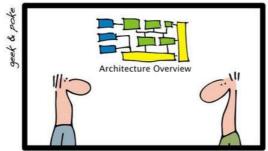


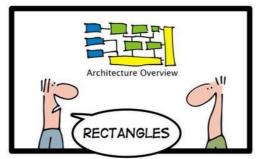




#### ENTEPRISE ARCHITECTURE MADE EASY







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PART 1: DON'T MESS WITH THE GORY DETAILS

# Thank you.

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