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# **A NEW SCENARIO FOR SAP S/4HANA EXTENSIBILITY**

**Side-by-Side extensibility to OpenShift Platform**

Salvatore De Caro  
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December, 3<sup>rd</sup> 2019



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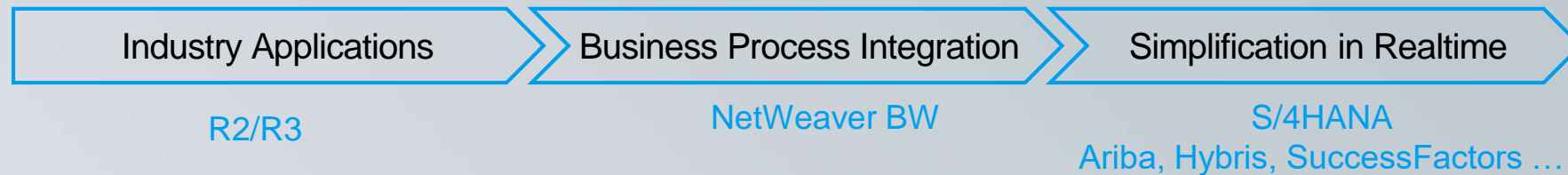
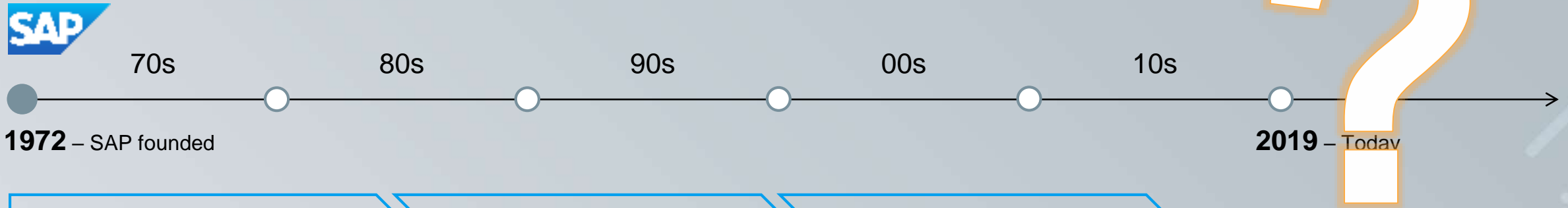
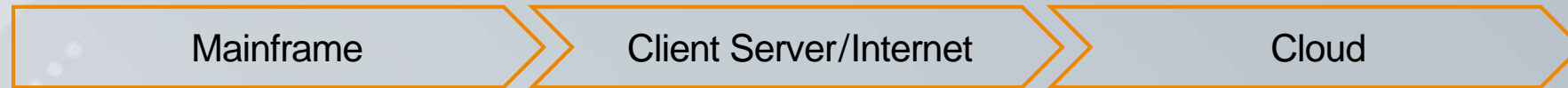
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# SAP's STRATEGY AND VISION

# A brief history of enterprise innovation

## Technology



Homogeneous data model

Heterogeneous data model



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We are living  
in the age of  
**digital disruption**

In-memory computing  
Nano-technology  
**Big Data**  
cyber security  
**UX**  
**Blockchain**  
API & Microservices  
**Robotics**  
Machine learning  
**Cloud**  
Social  
B2B marketplace  
Artificial Intelligence  
3d printing  
Digital Assistants  
Internet of Things  
**mobility**

# The world is changing

## IoT



54%



Last year's growth in  
**Mobile Data Traffic**<sup>1</sup>

## MACHINE LEARNING



66%



of **analytics processes** will no longer simply discover what happened and why, but **prescribe what should be done** <sup>3</sup>

## PREDICT MAINTENANCE



1 Trillion



will be saved in 2022 for consumers & business by IOT, for instance  
**Predicting Hardware Maintenance** <sup>5</sup>

## ARTIFICIAL INTELLIGENCE



50%



**cognitive and AI solutions**  
spending predicted annual growth  
rate (CAGR 2016-2021)<sup>2</sup>

## CUSTOMER EXPERIENCE



54%



US consumers say **customer experience** needs improvement <sup>4</sup>

## DIGITAL SUPPLY CHAINS



50%



Of manufacturing supply chains will have benefited from **digital transformation** by 2019, with the Remainder Held Back by Outdated Business Models or Functional Structures <sup>1</sup>

<sup>1</sup> <https://www.ericsson.com/assets/local/mobility-report/documents/2018/ericsson-mobility-report-june-2018.pdf>

<sup>2</sup> <https://www.idc.com/getdoc.jsp?containerId=prUS43095417>  
IDC 2017

<sup>3</sup> [https://www.ventanaresearch.com/digitaltechnology/?utm\\_source=hs\\_email&utm\\_medium=email&utm\\_content=609162865\\_hsenic-p2ANqz-86hkaCQ8Mze3sITB0g-84o8SF19granKEPTU22RLwo1dNaBgIRBFw3psogYbqfBCkssgg41nckIR4D0\\_UNUHanYYVQ&\\_hsni=60916286](https://www.ventanaresearch.com/digitaltechnology/?utm_source=hs_email&utm_medium=email&utm_content=609162865_hsenic-p2ANqz-86hkaCQ8Mze3sITB0g-84o8SF19granKEPTU22RLwo1dNaBgIRBFw3psogYbqfBCkssgg41nckIR4D0_UNUHanYYVQ&_hsni=60916286)

<sup>4</sup> <https://www.pwc.de/de/consulting/pwc-consumer-intelligence-series-customer-experience.pdf>

<sup>5</sup> <https://www.gartner.com/doc/3471568?refval=&pcp=npe>  
Gartner: Top Strategic Predictions for 2017 and Beyond



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# Organizations are Transforming to Stay Ahead of the Curve



Products are moving to **services**

Outreach to customers is going **direct**

Ecosystems of partners are **collaborating** to deliver more value

...

## Technologies enabling and accelerating this transformation...



City infrastructure



AI embedded  
in devices



Smart vehicle



Connected fleet  
management



Autonomous  
vehicles



3D printing



Mobility as  
a Service



Smart home



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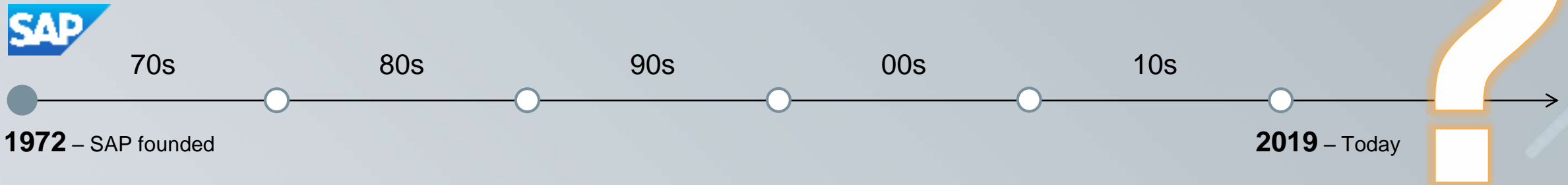
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# A brief history of enterprise innovation

## Technology



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Heterogeneous data model



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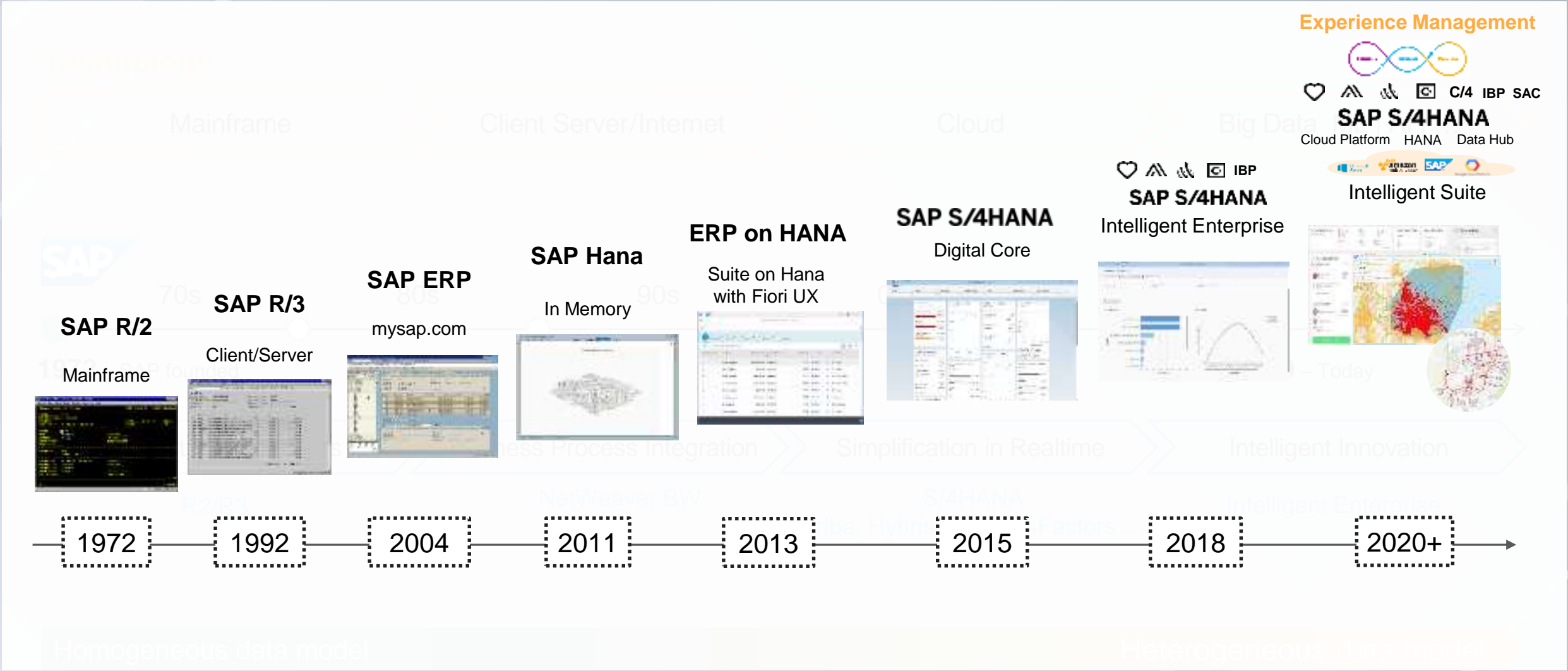
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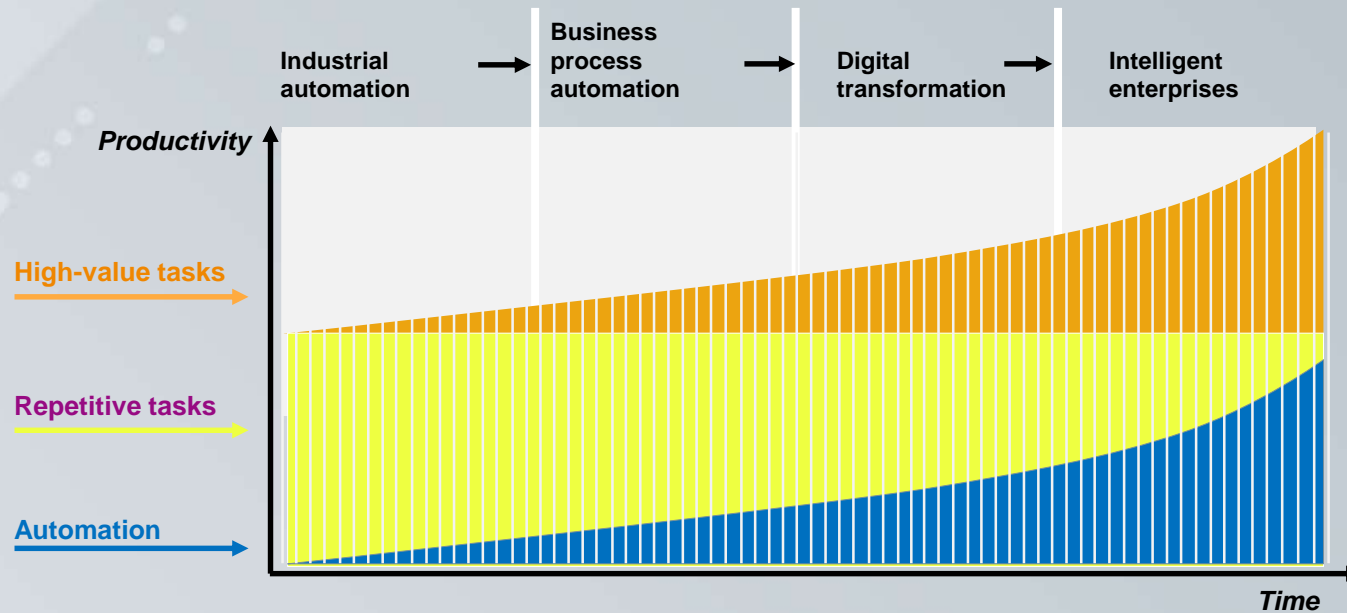
# A brief history of enterprise innovation



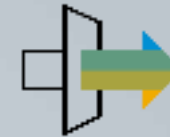


# SAP Point of View:

Intelligent Enterprise Are Going to Lead these Transformation Journeys



**Optimize** existing processes for more efficiency or reliability



**Extend** current business processes beyond efficiency gains to capture new sources of value



**Transform** the company's value chain or business model

An **Intelligent Enterprise** should have the ability **to learn** from experience, **anticipate** problems, and use knowledge **to adapt** to new situations.



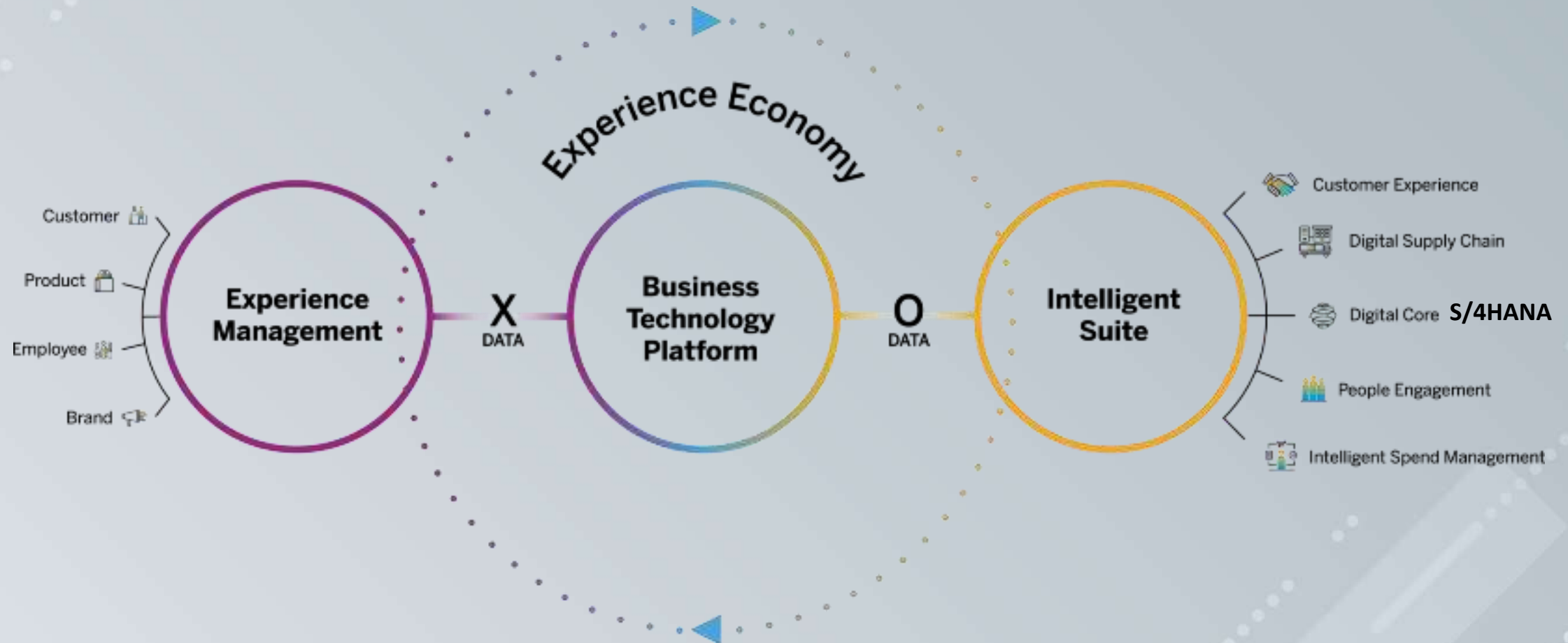
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# Be the experience company powered by the intelligent enterprise



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# SAP S/4HANA THE INTELLIGENT ERP

# For an Intelligent Enterprise, SAP S/4HANA is a Foundational Requirement

## SAP S/4HANA Supports the Intelligent Enterprise through Four Key Pillars



### Digital Age User Experience

Digital assistance and natural language conversations for increased productivity and user satisfaction



### Intelligent Automation

Artificial intelligence and robotic process automation eliminate more than half of manual tasks



### New Business Models

Rapidly design and execute new business models and digital services, based on advanced end-to-end processes



### End-to-end Analytics & Real-time Steering

Context aware, real time, predictive insights so you can make better decisions, adjustments, faster



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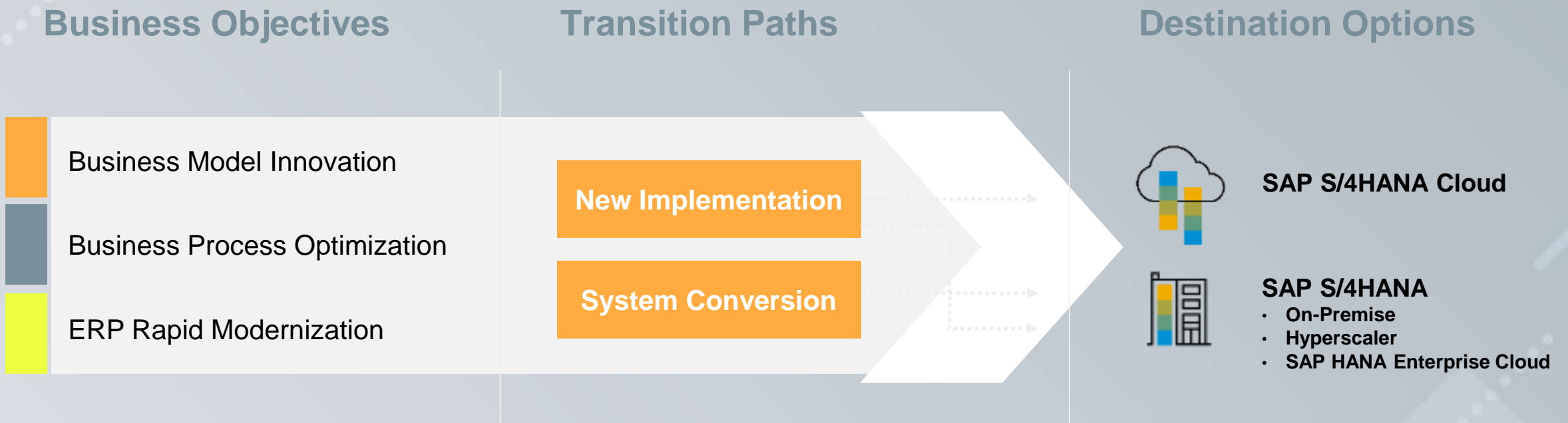
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# Consider Your Strategic Choices

Match your business objectives to possible transition paths and destinations



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**More than 45% of  
applications in SAP  
systems are custom code**



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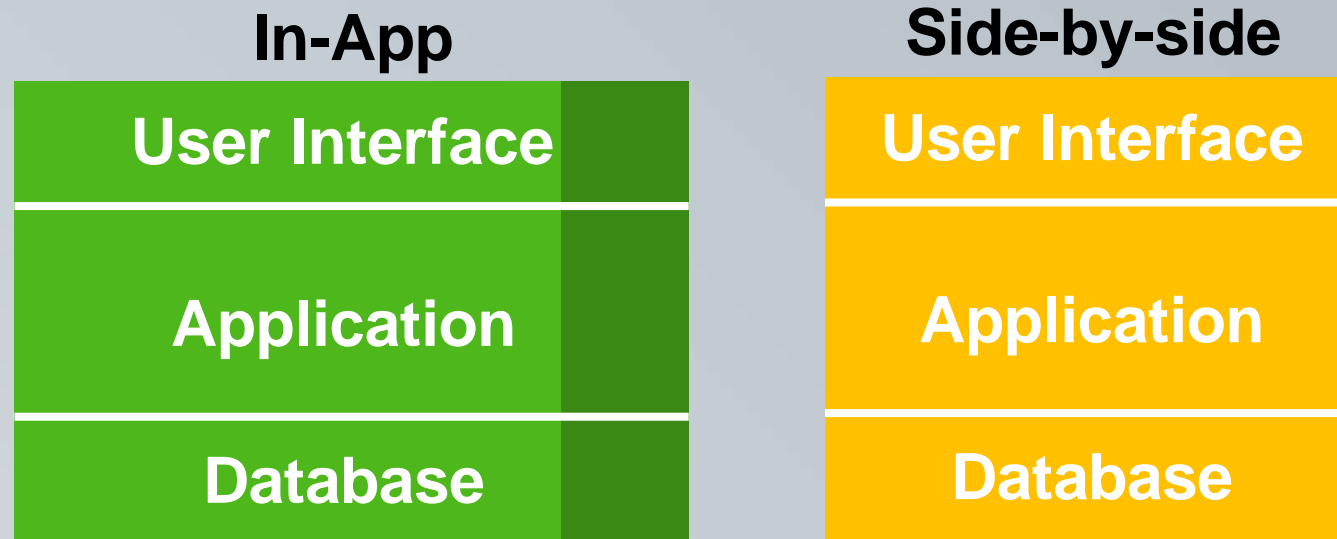


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# SAP S/4HANA EXTENSIBILITY



# Extensibility Concept in SAP S/4HANA



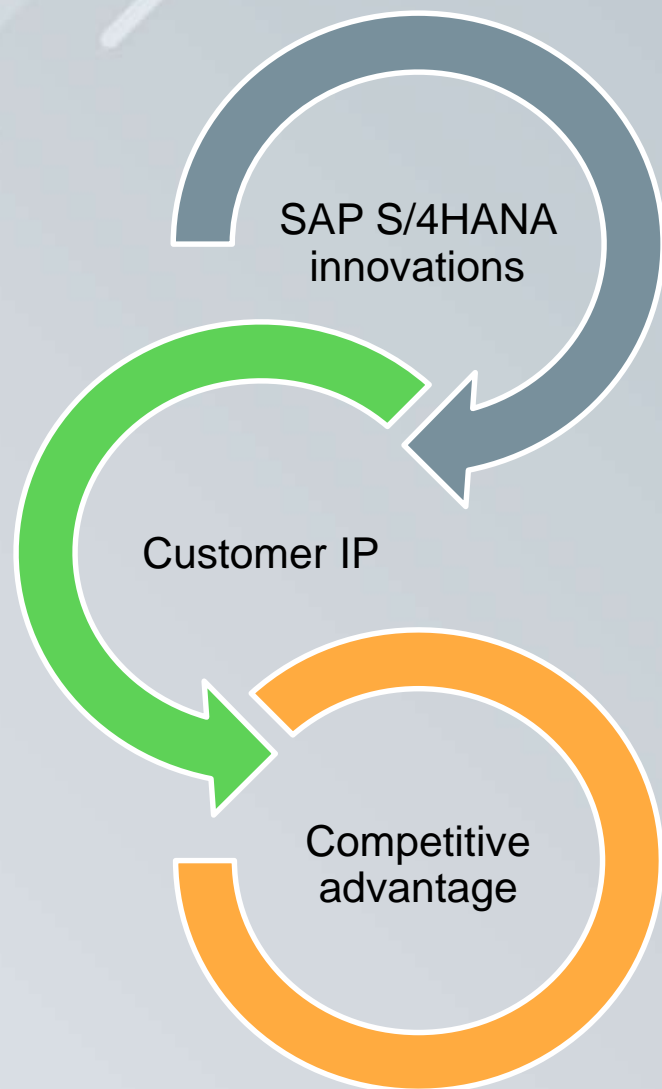
## De-coupling and Lifecycle Stability

- Only extensibility that does not block SAP software updates and continue to work after an update without manual steps is allowed.
- Custom extensions are loosely coupled, i.e. the software lifecycle of extensions is de-coupled from stable systems of records.



# Motivation for a New Extensibility Concept in SAP S/4HANA

## “Keep the Core clean” and generate competitive advantage



### Fast innovation cycles

- Software is always patched and upgraded based on a fixed schedule

### Custom and partner extensions don't block SAP software updates

- Continue to work after an update without manual steps

### Software lifecycle of extensions is de-coupled from stable core

- Modification free
- Clash free
- Use whitelisted APIs and extension points
- Compliant with zero-downtime principles



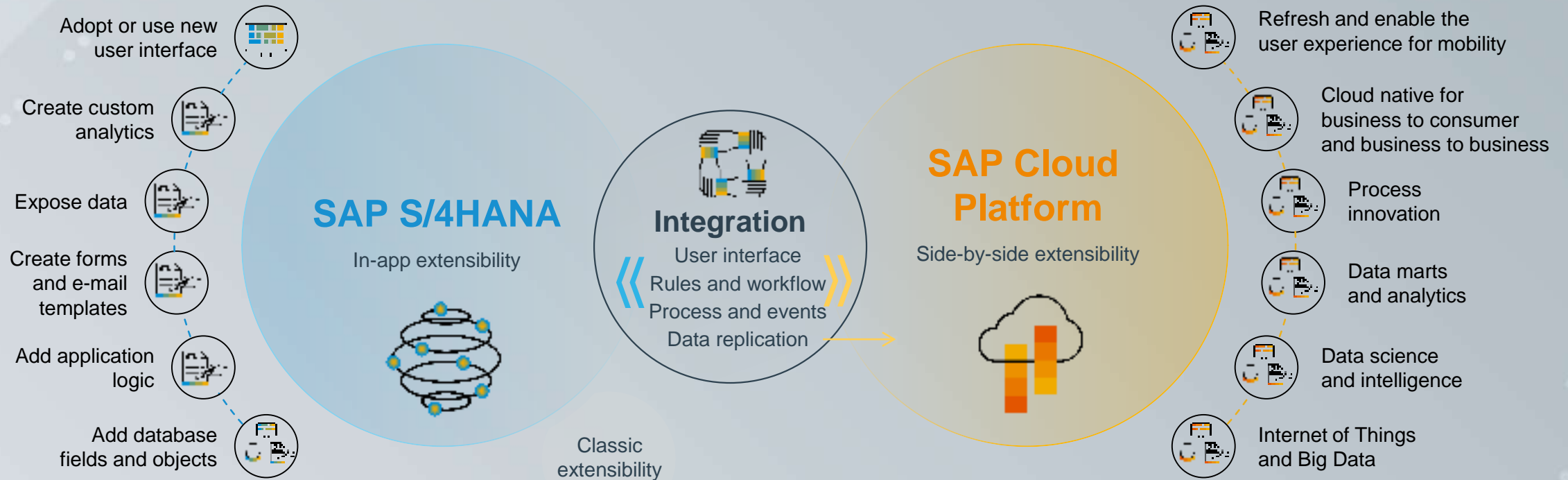
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# SAP S/4HANA: Big picture of extensibility



**Comprehensive security and comprehensive lifecycle management**



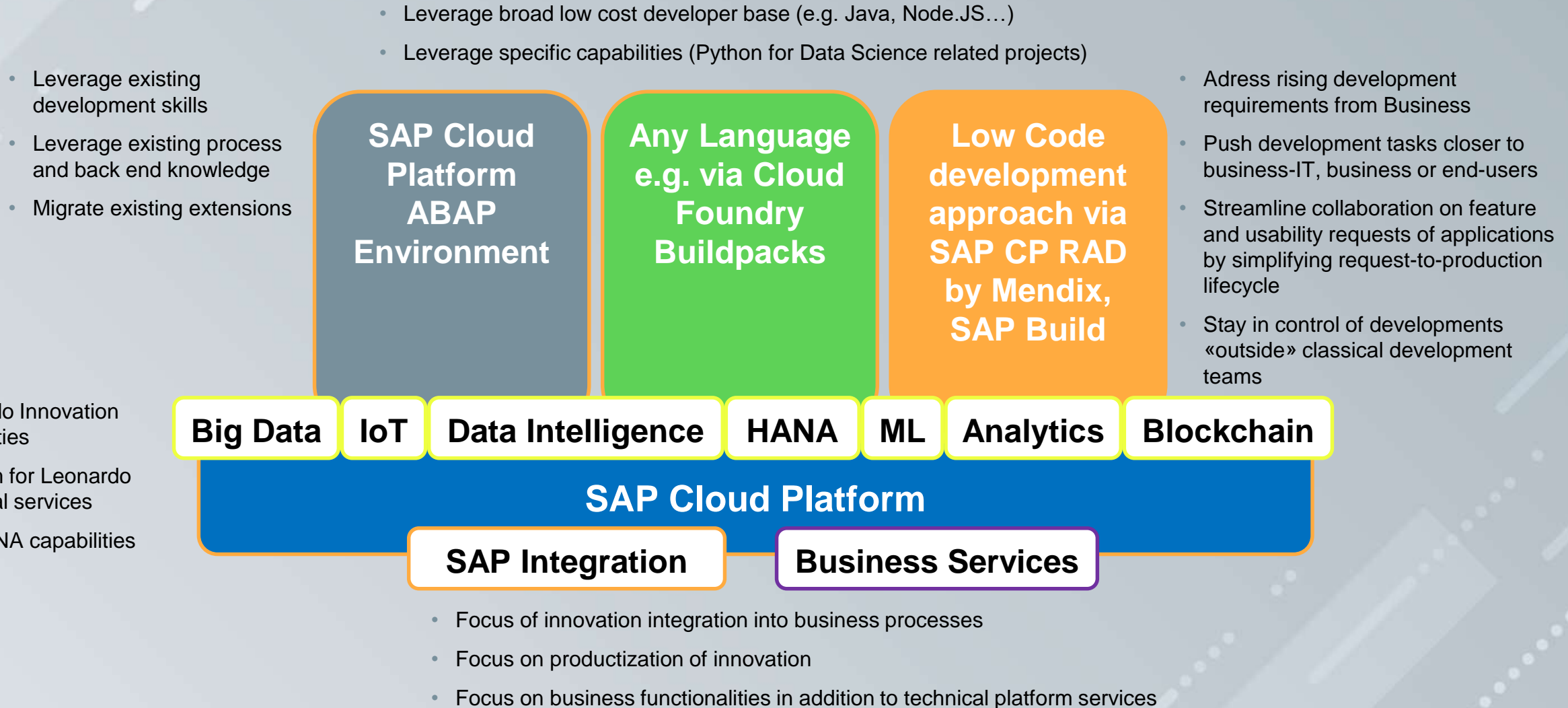
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# Building innovative applications & extensions on SAP Cloud Platform



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# The future of application development

**IDC predicts that by 2021, 90% of applications will be built on cloud platforms using microservices and cloud functions, and over 95% of new microservices will be deployed in containers.**

Source: IDC Partner Spotlight, Capgemini Helps Businesses Containerize Existing and Modern Workloads with Red Hat OpenShift to Become Cloud and Digital Native, April 2019



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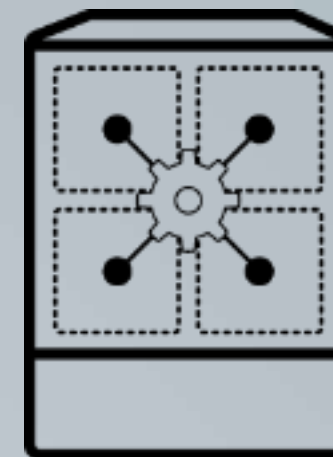


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# Why customers choose containers



OPENSIFT



OPEN SOURCE  
INNOVATION

ONE PLATFORM,  
ANY CLOUD

DEVELOPER &  
APPLICATION  
FLEXIBILITY

AUTOMATED  
PLATFORM  
OPERATIONS



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# Agile integration products

STRATEGIC CAPABILITIES NEEDED BY TODAY'S ENTERPRISES

## Flexibility

**RED HAT®  
FUSE**

DISTRIBUTED  
INTEGRATION

## Scalability



RED HAT  
OPENSIFT CONTAINERS  
Containers Platform

## Re-usability



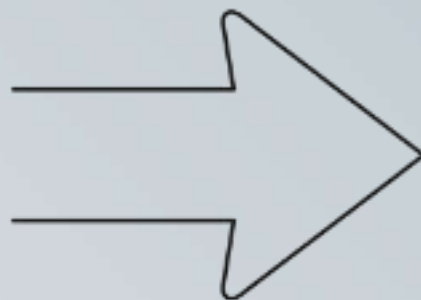
3scale  
BY RED HAT

APIs

Distributed integration

Reusable pattern toolkit

Rich transformation,  
routing, & messaging



Move away from  
the monolith to  
microservices

Wrap & use legacy

Create and connect APIs



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# Agile integration products

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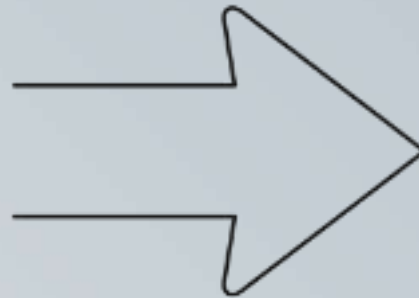
## Re-usability



**Deploy & manage  
container apps**

**Seamless across  
Hybrid Clouds**

**Automated and scalable**



**Shift to a containerized,  
DevOps deployment model**

**Consistency across  
environments**

**Key Microservices enabler**



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# Agile integration products

STRATEGIC CAPABILITIES NEEDED BY TODAY'S ENTERPRISES

## Flexibility

**RED HAT**  
**FUSE** DISTRIBUTED  
INTEGRATION

## Scalability

**RED HAT**  
**OPENSHIFT** CONTAINERS  
Container Platform

## Re-usability

**3scale** APIs  
BY RED HAT

Overview



API Consumers

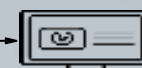
(App Developers)



Developer Portal

- API Provider Branded
- API Description
- Signup
- ActiveDocs (OAS)

API Manager



Admin Portal

- Dashboard
- Developer / Application / Key Management
- CMS
- Analytics
- Billing



API Provider

(Line Of Business / Product Manager, Developers, Writers, Ops)



Developer Apps

API Request



API Gateway

Authorized API Request



API Backend

Hybrid cloud access



SAP API, <https://api.sap.com/>

100% Open Source

Modular

No single point of failure

Hybrid cloud access

Highly scalable



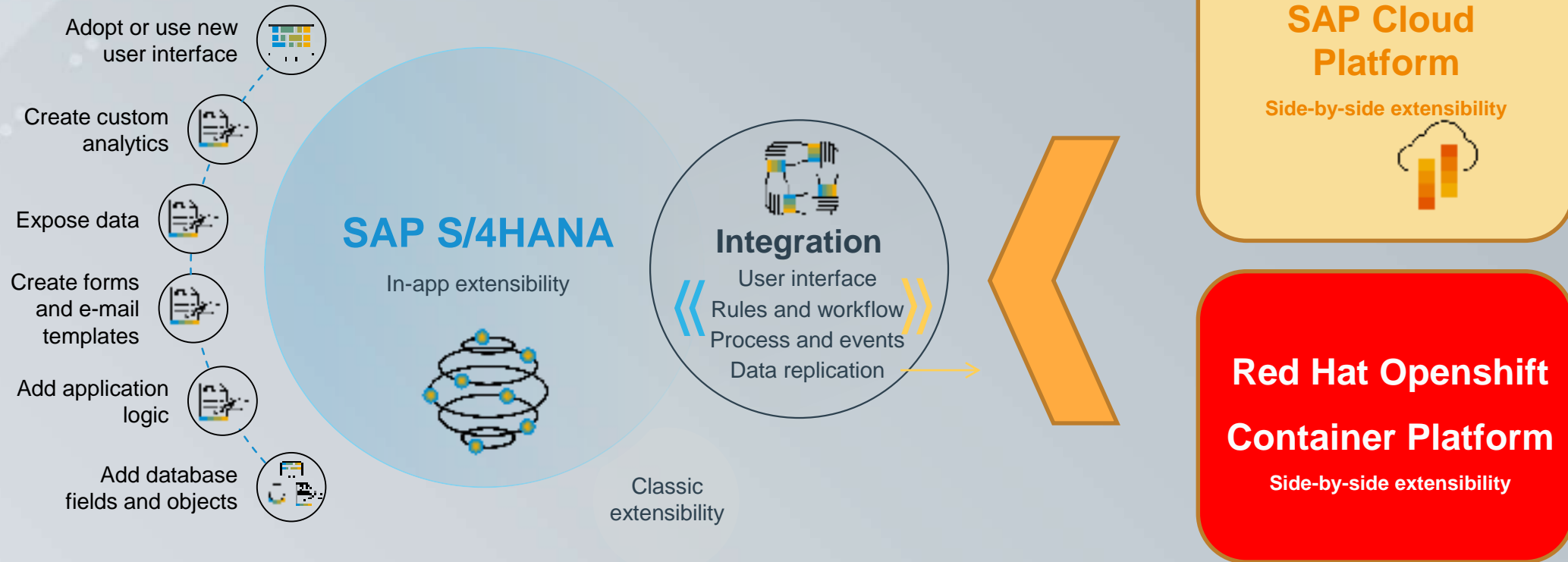
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# SAP S/4HANA: Additional option of extensibility



**Comprehensive security and comprehensive lifecycle management**

 User interface layer  Application layer  Database layer



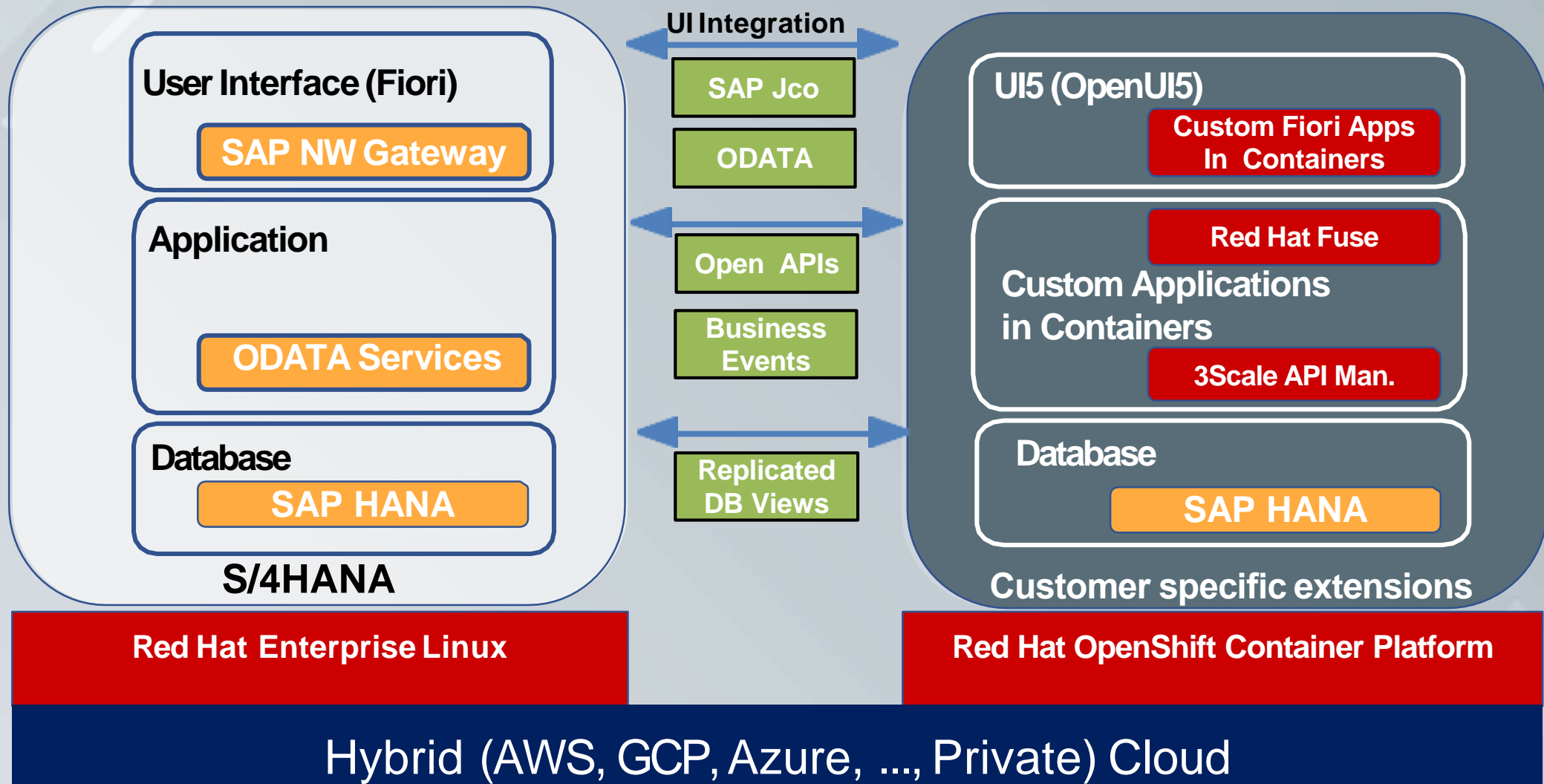
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# SAP Side-by-Side Extensibility to OpenShift Platform



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# Value for the customer

- **Enable cloud-native developers** with no ABAP experience to build applications and integrations using modern tools.
- **Provide automation** to build/deploy UBI-8 containers with just the Fuse/SAP functionality we need for specific use cases.
- **Enables building from user-specified versions** of Camel/Spring/SAP connectors etc, making it easy to test/upgrade different combinations.
- **Supports Digital Transformation** projects as it allows to provide different developer teams access to just the SAP functionality that they need to develop new SAP solutions, cloud/on-prem integrations etc.



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**“The landscape of cloud adoption is one of hybrid clouds and multi-clouds.**

**By 2020, 75% of organizations will have deployed a multi-cloud or hybrid cloud model.**

**Technology product managers at cloud service providers must seize this revenue opportunity.”**

**GARTNER** | September 2018

**Source:** Gartner, *Market Insight: Making Lots of Money in the New World of Hybrid Cloud and Multicloud*. ID: G00364355. | September 2018. <https://www.gartner.com/doc/3889017/market-insight-making-lots-money>



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