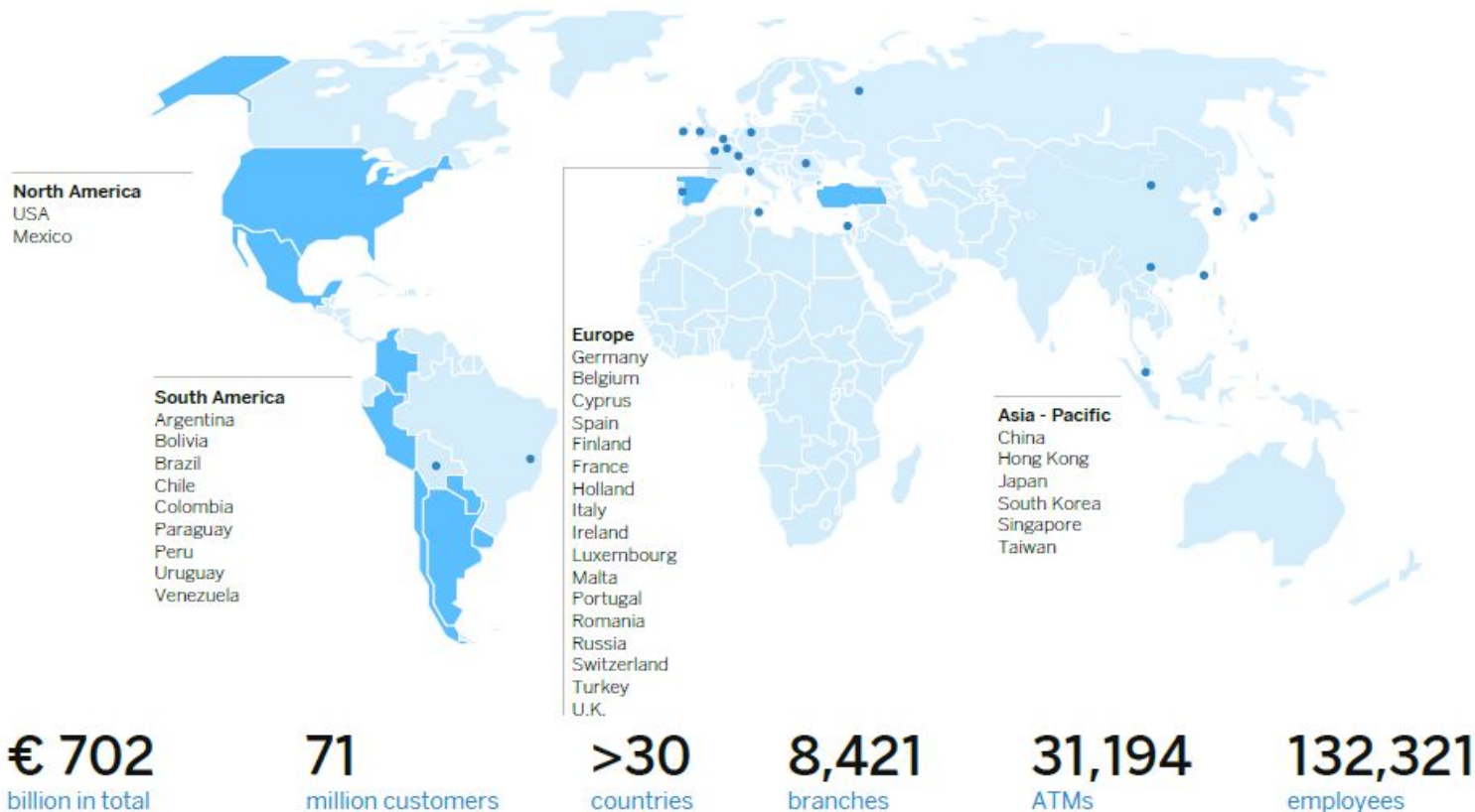




**Cloud computing: the new IT paradigm**  
A must for the banking industry

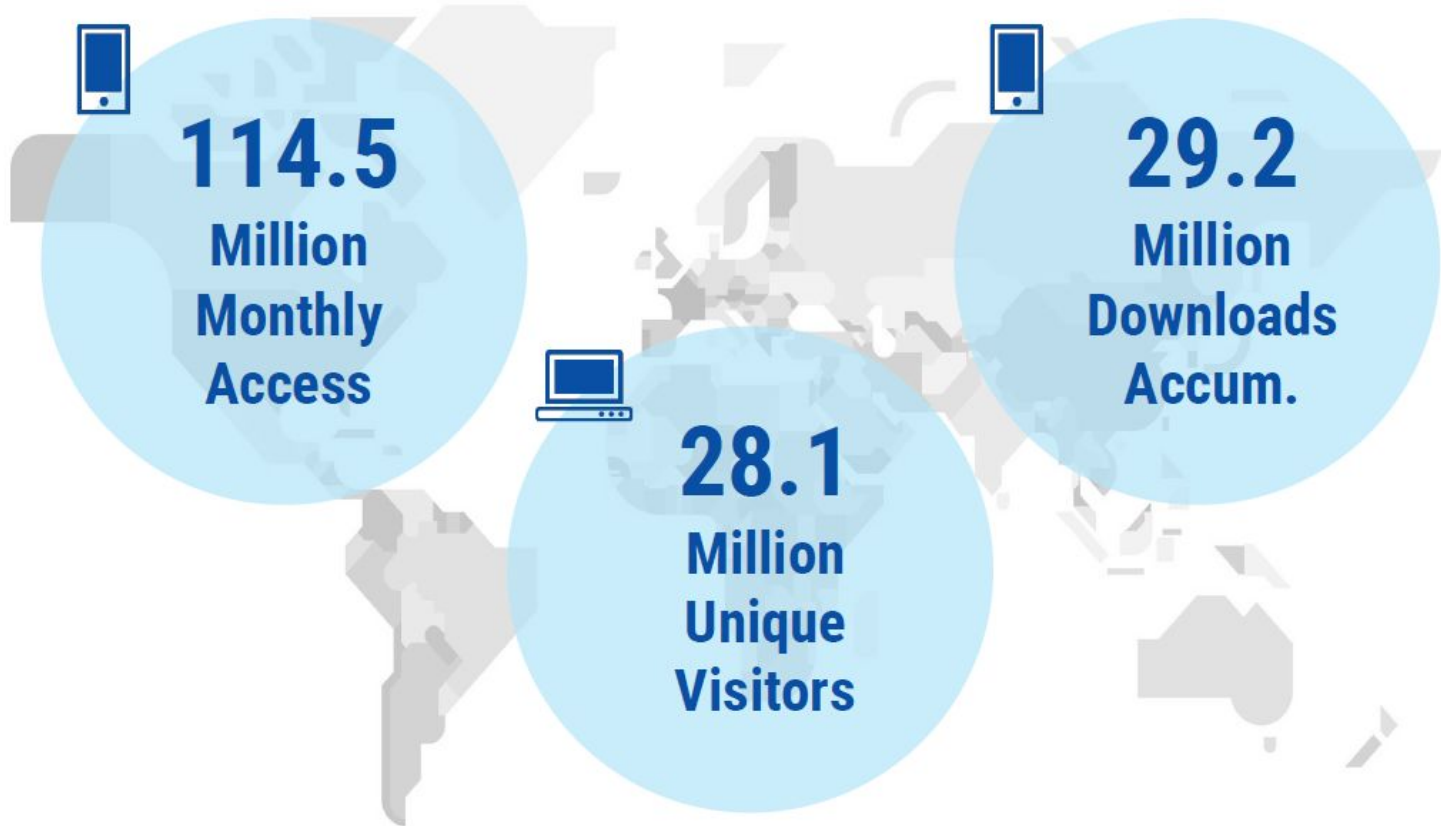
**What is BBVA?**

# BBVA, a european bank with a strong position in 3 continents...

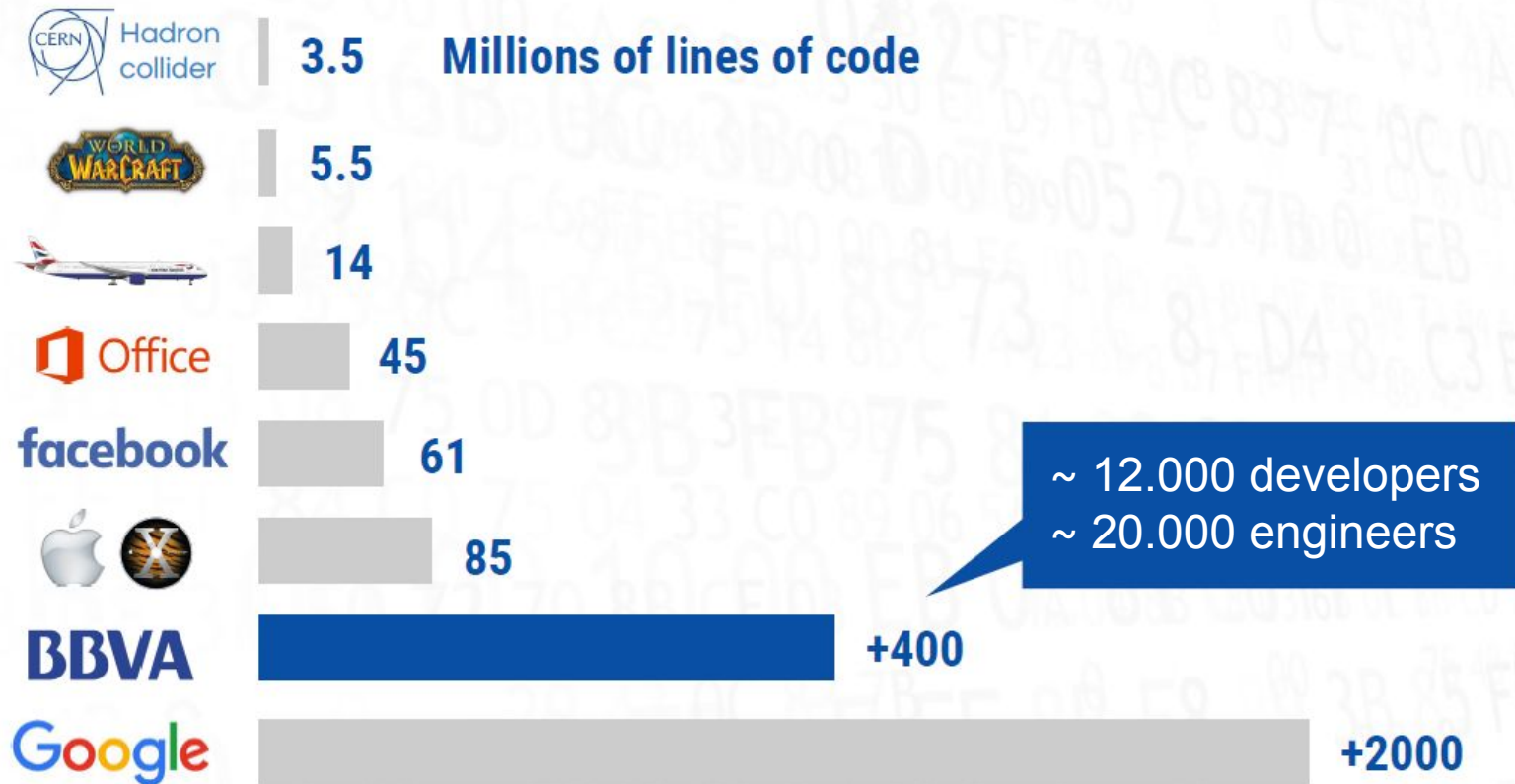


Note: As of June 2017.

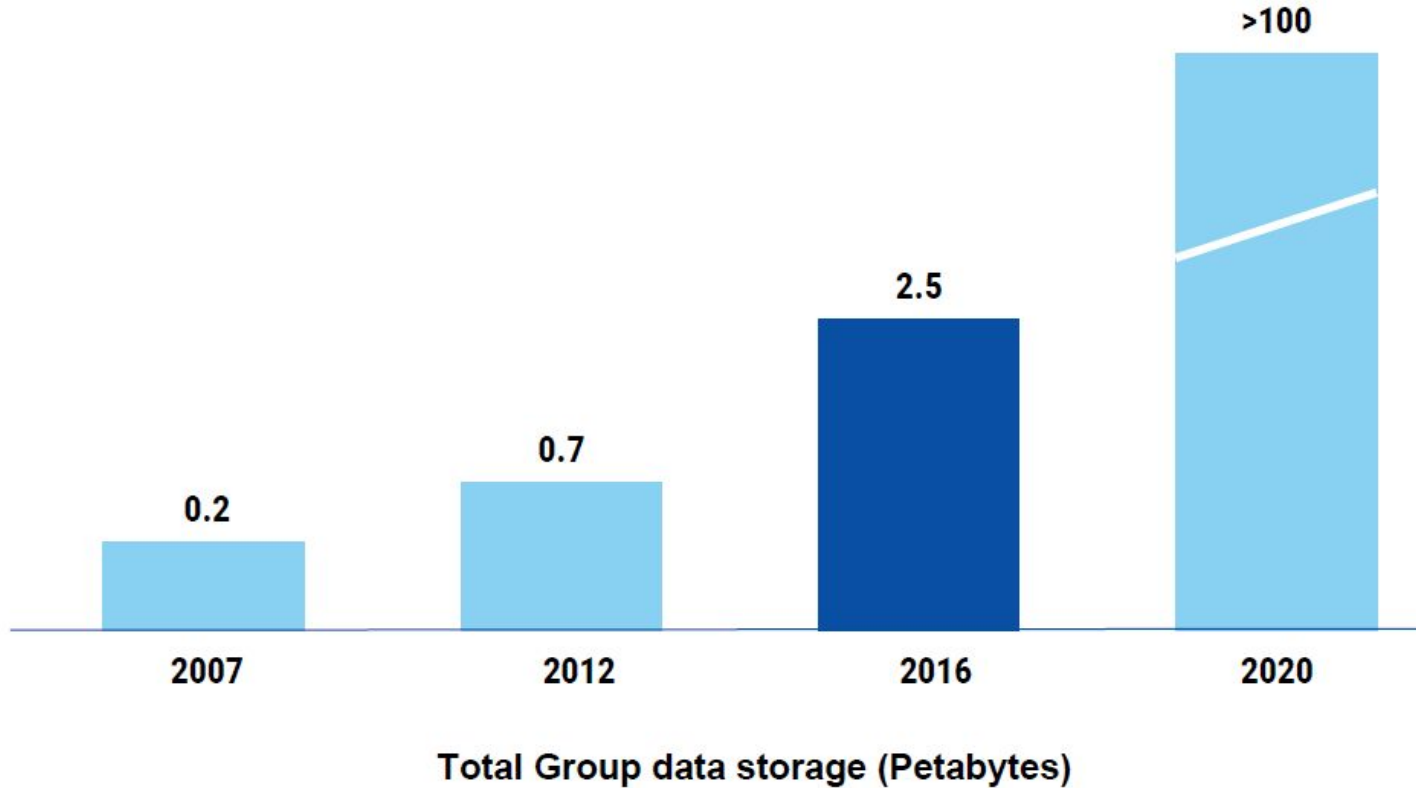
... with more than 70MM of customers, with significant digital behaviour



## A software company embedded in a bank...



**...with and unprecedented asset increasing faster than ever**

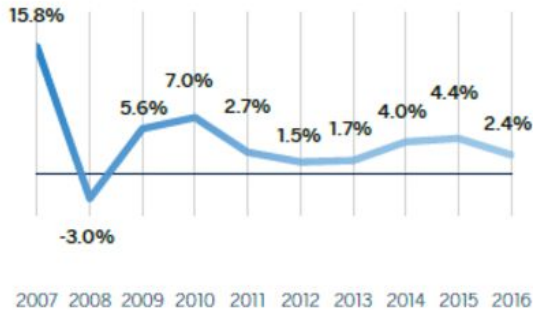


**Financial industry is under severe pressure**

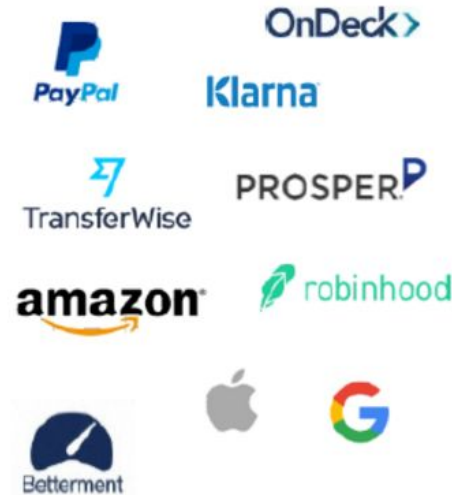
# The industry is being reshaped

Complex macro environment and need for adaptation to regulation impacting profitability

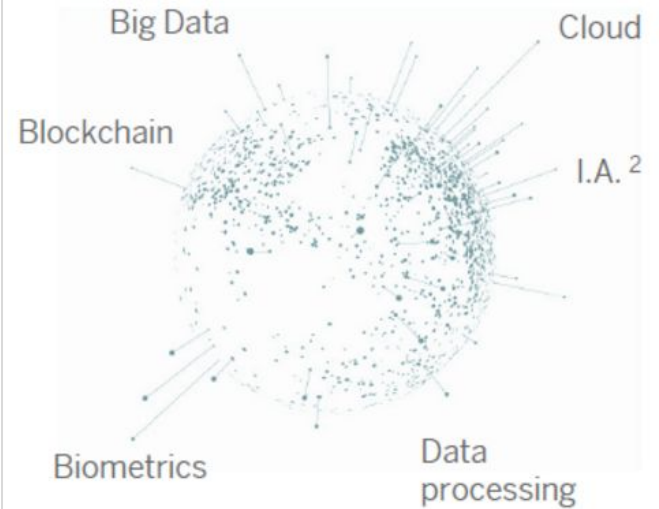
### Banks ROE Evolution<sup>1</sup> (%)



New players are entering in the value chain



Transforming technologies and use of data



(1) Source: BBVA; Banks in peer group: Santander, Deutsche, Commerzbank, BNPP, SocGen, CASA, Intesa, Unicredit, HSBC, Barclays, Royal Bank of Scotland, Lloyds, UBS y Credit Suisse, Citigroup, Bank of America, JP Morgan y Wells Fargo.

(2) Juniper Research Future Proofing Digital Banking.





## Clients demands are changing

### ■ Shifting customers and needs

Banking anytime, anywhere

### ■ Used to digital experiences

Expect proactive and personalized help in their finance management

### ■ Interaction with multiple devices and applications

Seeking the best experiences for each of their banking needs

**“Only those banks able to adapt will survive”**

Danièle Nouy - ECB Supervisory Board Chair

**Cloud, a lever for surviving  
with challenges to face**

# Cloud technology offers an unprecedented opportunity



## Costs

Allows for **disruption** of own technology with more efficient, **equally (or even more) reliable** infrastructure



## Time to market

Fosters **automation** of the product development lifecycle, all tasks are defined **as SW services**



## Globality

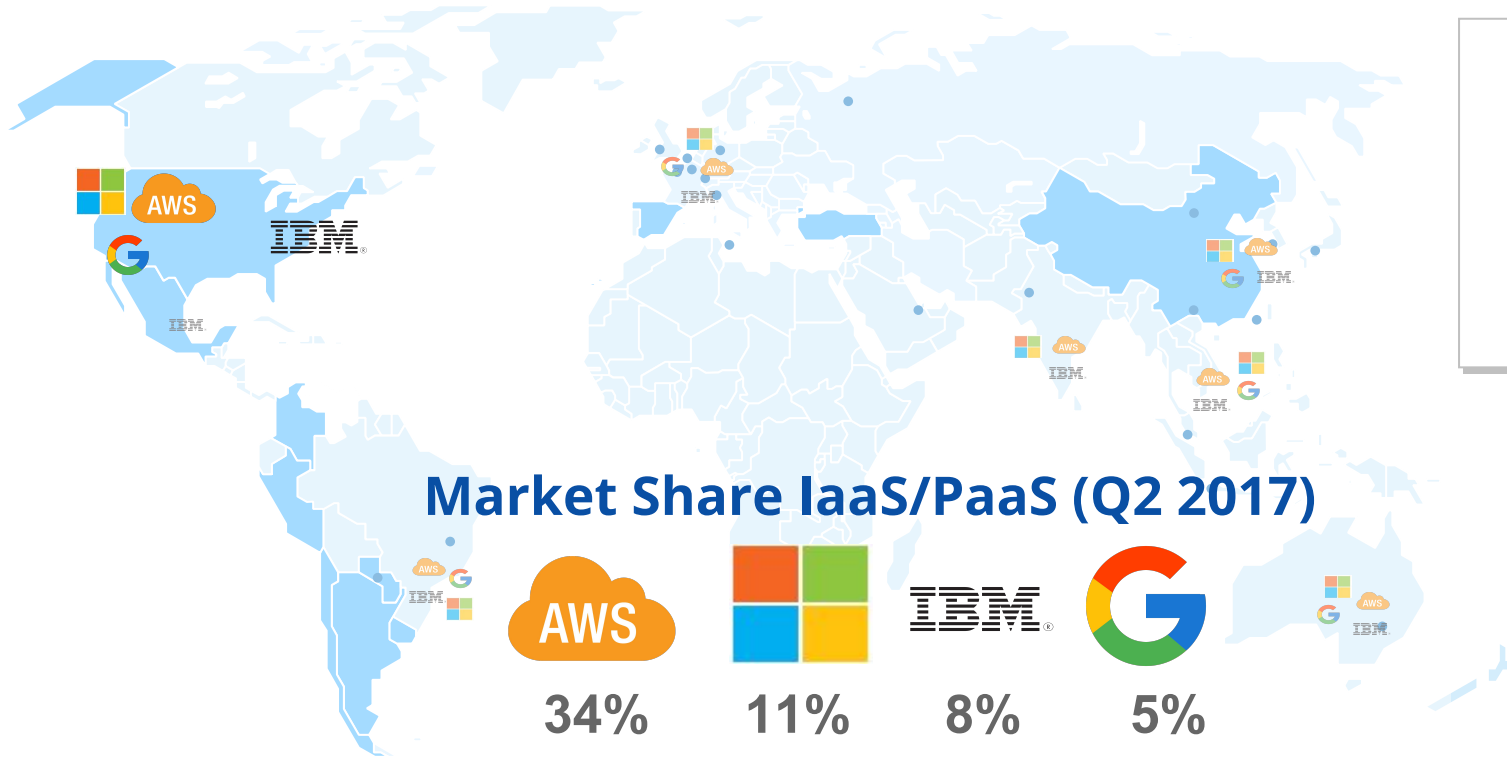
Enables global construction & **re-use** of software products and components



## Innovation

Incorporates to the value chain 'unbundled' **best-of-breed products** that are better served by third parties

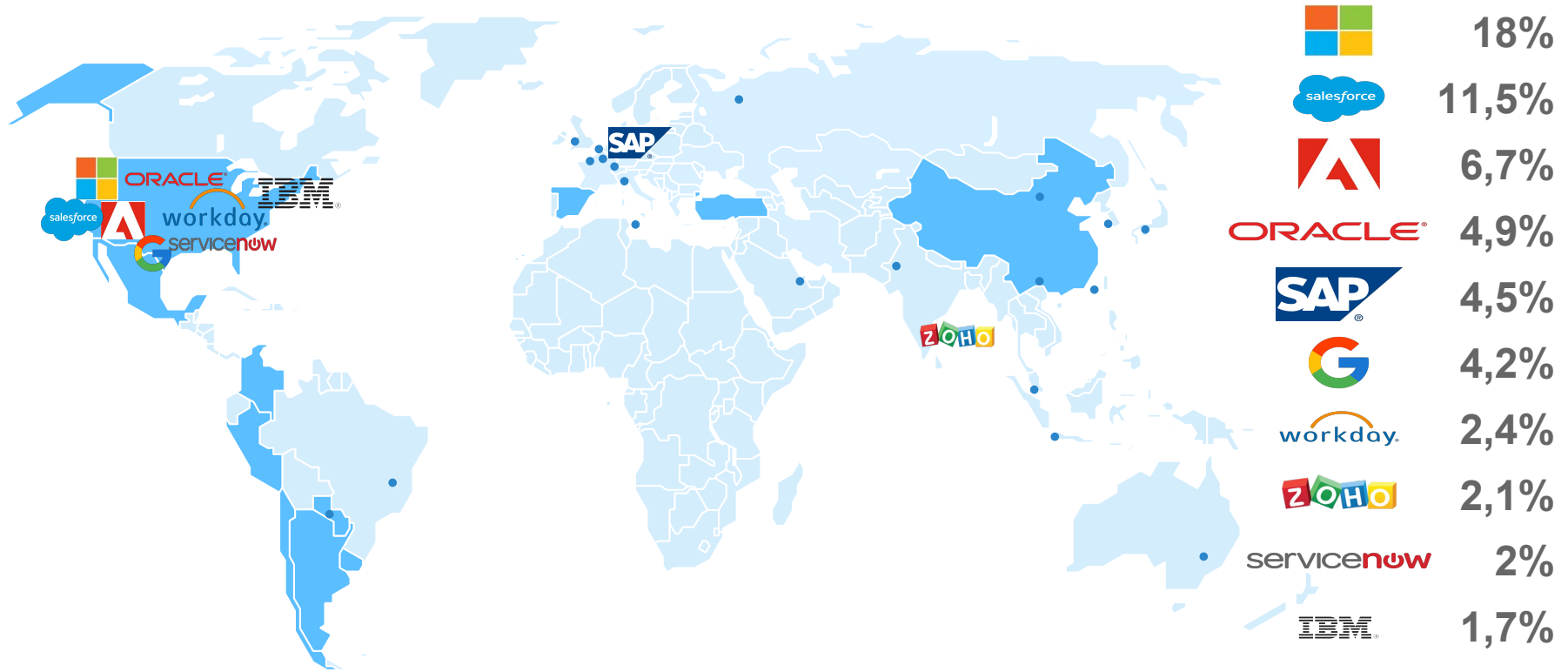
# Adoption is growing fast, cloud oligopolies are rising for IaaS / PaaS...



By 2020 the top 5 cloud players will control at least 75% of combined PaaS / IaaS market according to IDC.

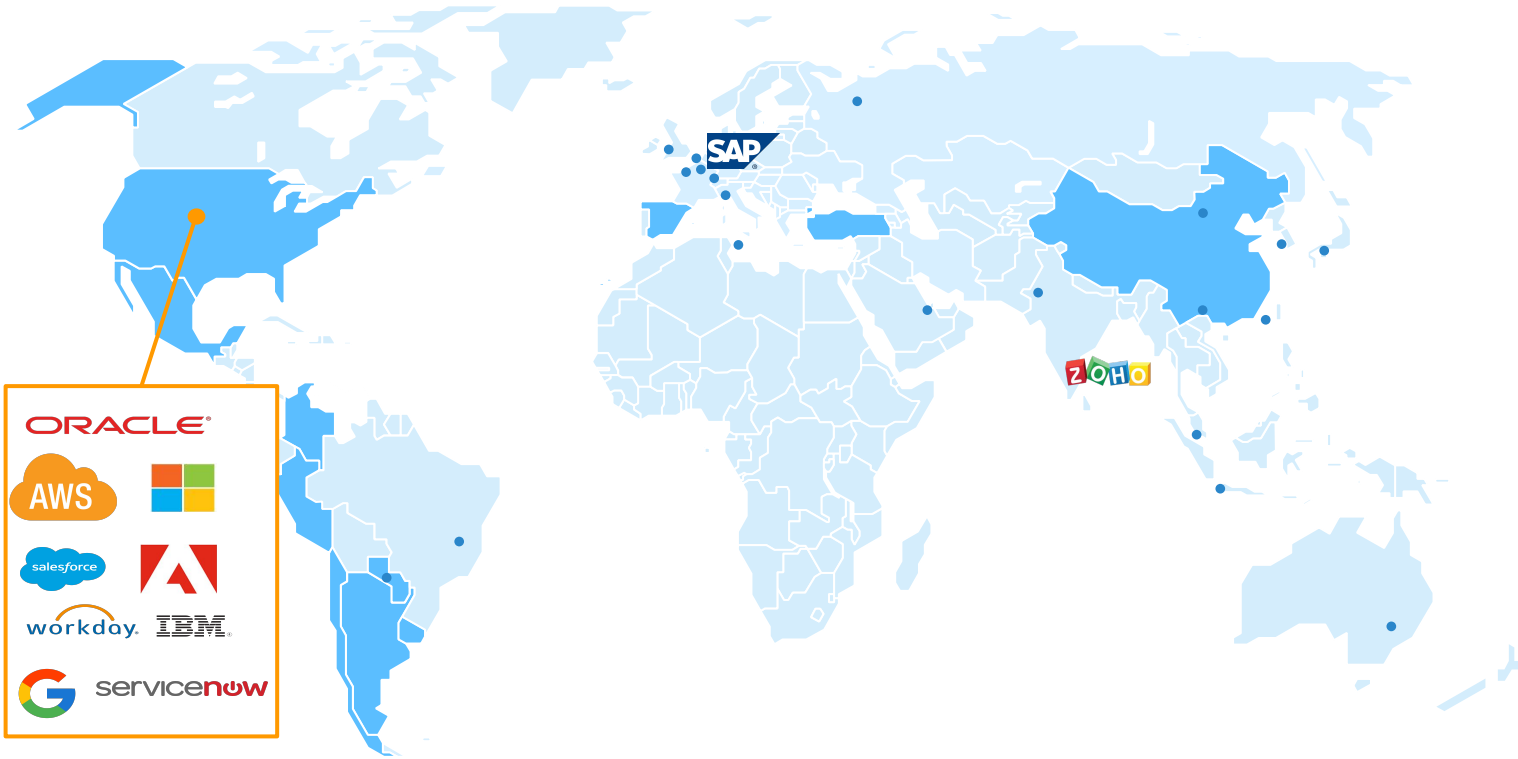
AWS, Azure, IBM and Google came out the winners from the IaaS / PaaS competition

## ... being more competitive the context in SaaS



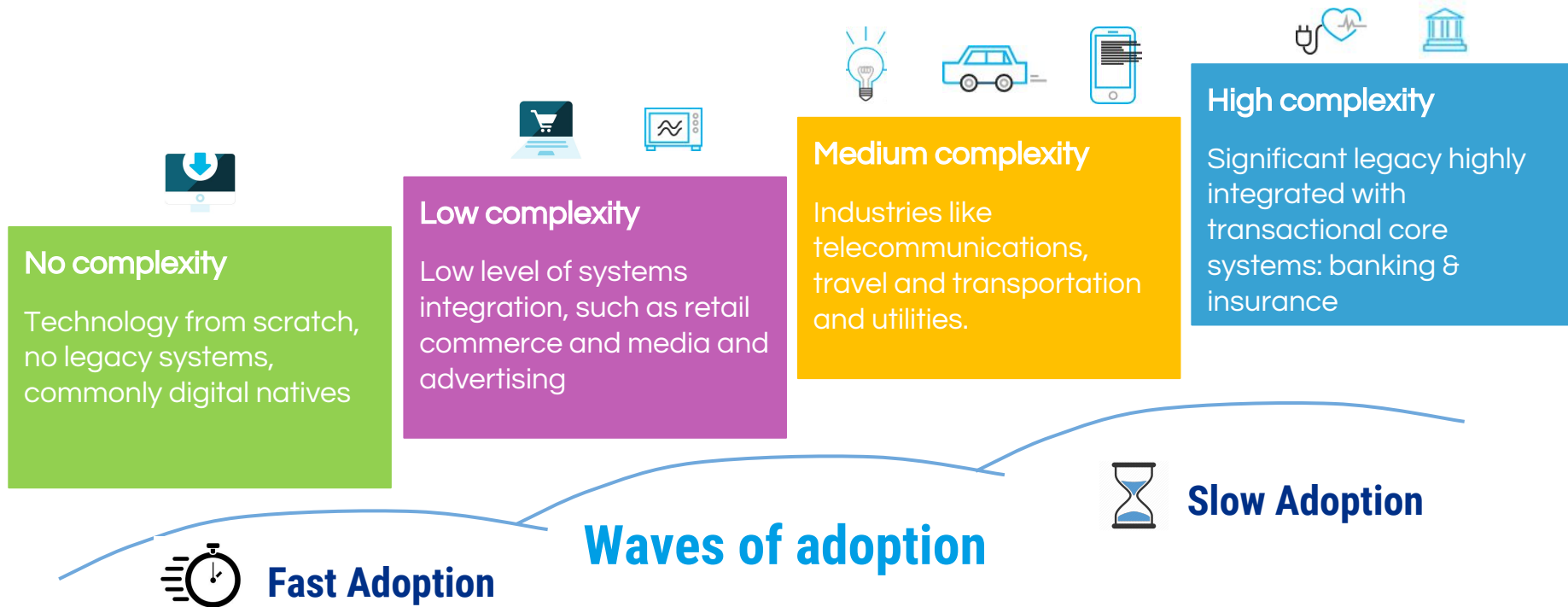
Not only digital players but **traditional companies** are transforming for providing SaaS solutions

# Public cloud is concentrated in few vendors and majorly in the USA



The United States holds the 4 main IaaS/PaaS vendors and the 8 of SaaS (58% and 52% market share respectively, only considering those vendors)

# Adoption speed within multinational organisations varies across industries according to technological complexity

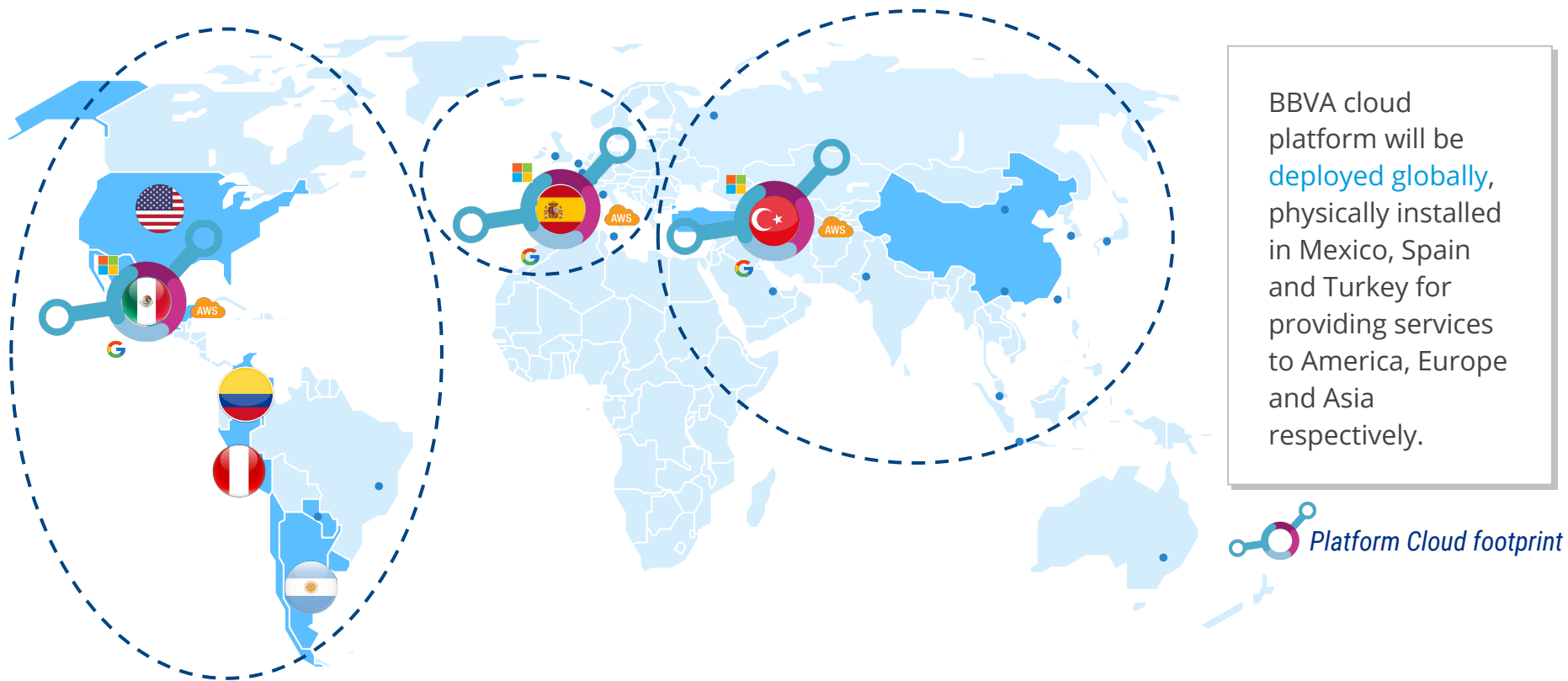


Most financial entities are starting the journey but **not significant impact yet**



# **BBVA public cloud strategy**

# One single platform providing service to all BBVA developers



BBVA cloud platform will be **deployed globally**, physically installed in Mexico, Spain and Turkey for providing services to America, Europe and Asia respectively.

 Platform Cloud footprint

We will leverage public cloud existing footprint when possible

# Our cloud technology journey has been built around three strategic lines

## 1 Hybrid Cloud

Combining **private** and **public** cloud as needed

## 2 Vendor Agnostic

Building '**portable**' SW (APIs) that decouples functionality from vendor-specific technology

## 3 'Platform' approach

Consuming cloud services from **one global BBVA Cloud Platform** as a means to govern adoption

# Combining public + private cloud is both necessary and desirable

## SaaS

Focus on **non-banking services**  
such as Marketing, ERPs, etc

- Third party incumbents with **leading products that have become market standards**
- Strategy is to move fast** to adopt public cloud, looking for simple, **plug-&-play integration**

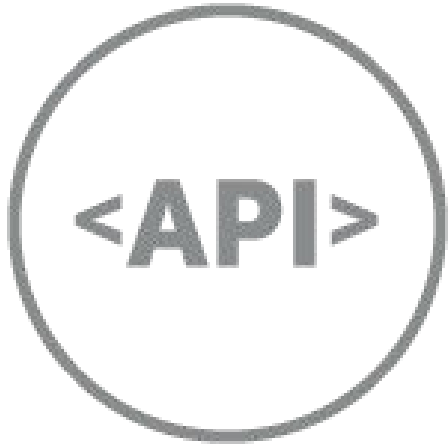
## PaaS + IaaS

**Banking software & data services**  
built by BBVA developers

**Technical services developers need**  
to build products & applications

- Go private at the outset to capture benefits while **de-risking the Cloud learning curve** (talent transformation, different operating model, etc)
- Achieve **strictest security and operation standards with critical workloads** (critical data, etc)
- Ensure compliance while regulatory uncertainty clears out** & public cloud players mature (geo-localization of data, etc)
- Use private cloud to **reduce vendor lock-in** and as a **gateway to govern adoption of public cloud services**

## 'Portable' API-fied software is the key to avoid vendor lock-in



Building products natively in [Amazon/Google](#) compromises our ability to mitigate vendor lock-in

APIs are the way to decouple functionality from [technology](#), for banking and technical SW services

In our Journey to Cloud, every service is [API-fied](#), then consumes specific underlying technologies

It will allow us to incorporate **best of breed services** from multiple vendors as needed since cloud still not a commodity

# We have already started the cloud computing journey towards...

## SaaS

- Global agreements giving us **'best of breed'**
- Premium **partnerships** with additional benefits
- **Same solution** for same problem



## PaaS

- Single **point of entry** for dev. ecosystem
- Global API catalogue
- **Marketplace**
- Common pipeline

Global catalogue deployed: **>300** global apis  
**>1500** next gen developers across BBVA

## IaaS

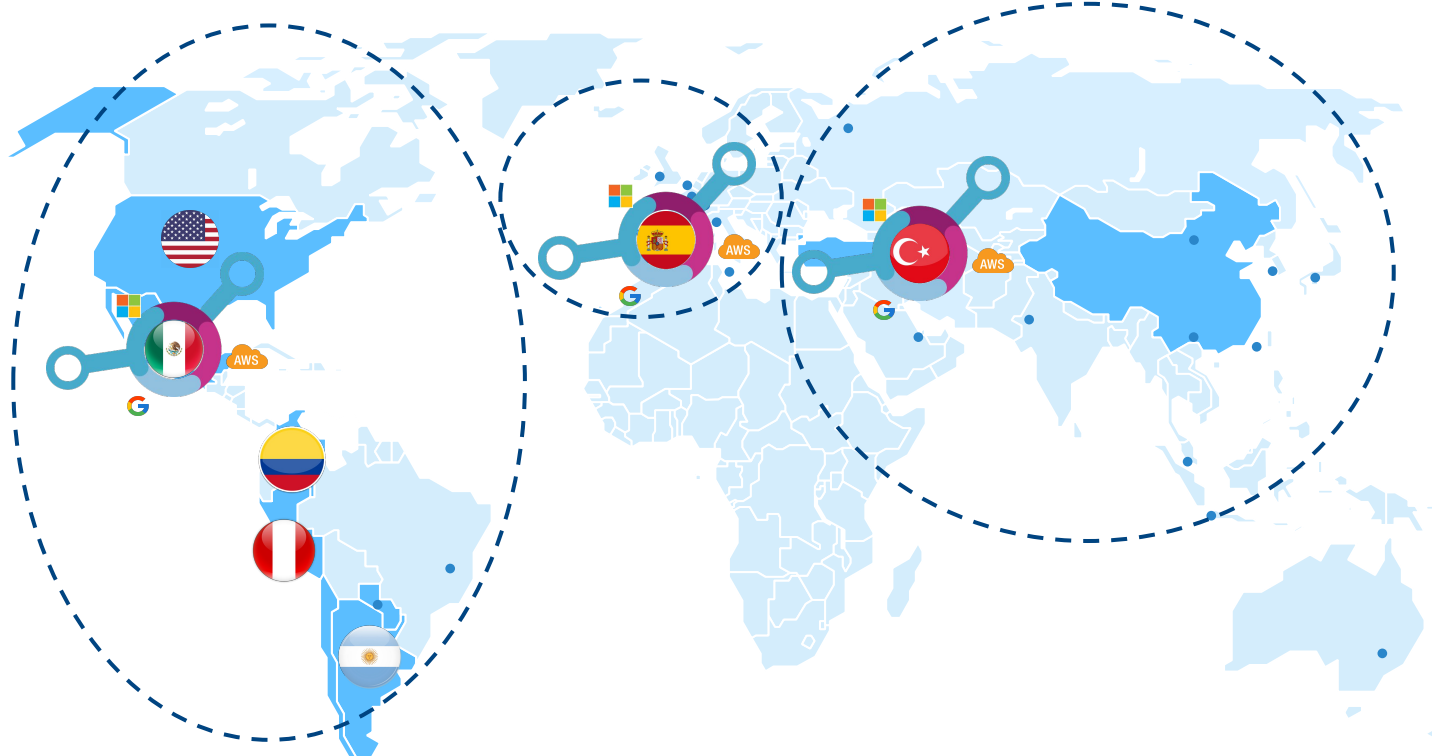
- **Common tech stack**
- Low cost and **autoscalable** infra
- Private and public
- **Operation** and **security** standards

**28%** low cost processing in Spain  
**6,1 bn** YTD of low cost transactions across BBVA

...infrastructure productivity x3 and software development x2

**Create a cloud computing culture is key for  
succeeding**

# Global strategy with 3 technological hubs for providing service to more than 30 countries where regulations differs

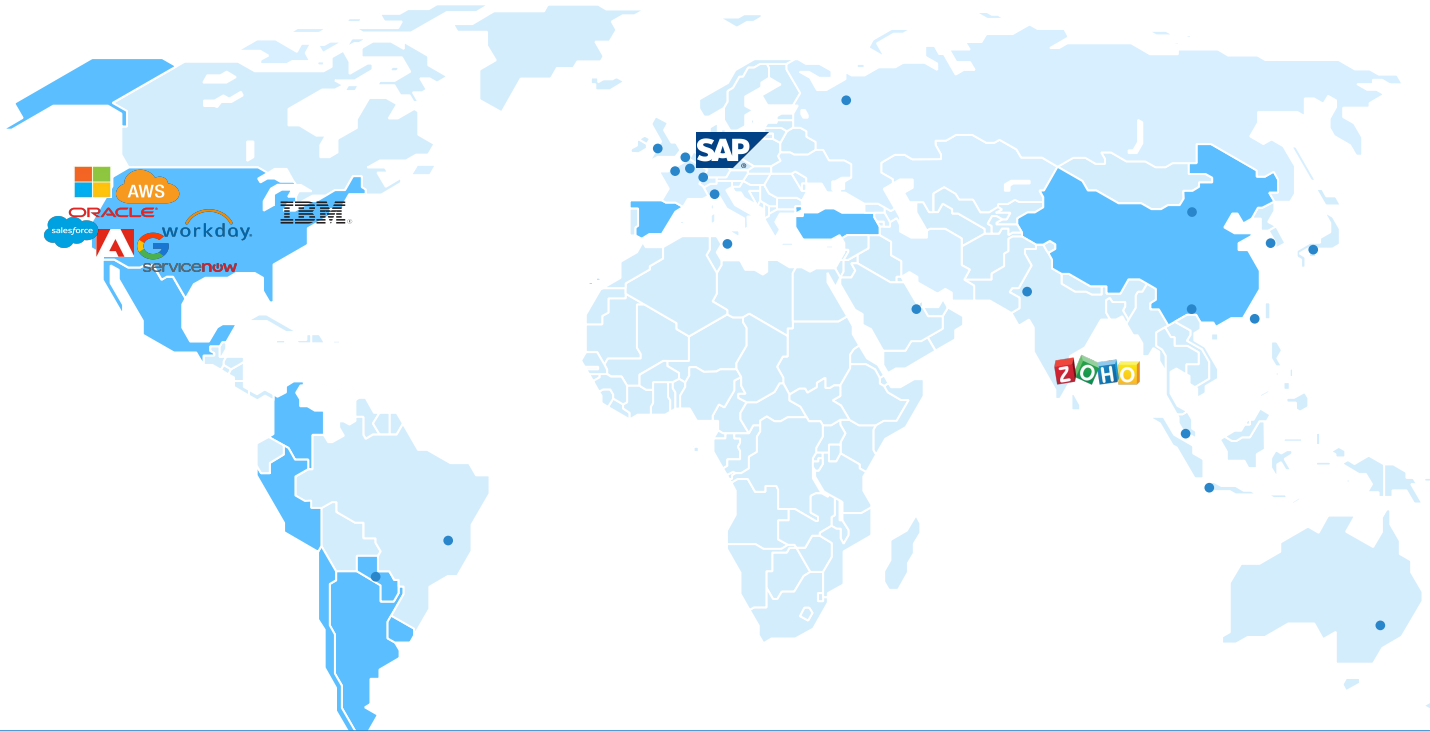


Different regulation criterias across geographies with new regulations coming up (GDPR, PSD2) and/or strict restriction to international data transfer may have a significant impact on our strategy.

**Harmonization of criterias** among supervisors and regulators from different geographical areas and **international data transfer** is critical for global organizations



# In the future cloud computing as regulated utility, not treated as outsourcing



Cloud computing still **treated as a traditional outsourcing** where approval process is based on a **case by case approach**, slowing decision making down

**Create a global cloud computing culture** is a must for succeeding and understanding the benefits of cloud

**Ex-ante regulatory clarity and ex-post supervision for accelerating adoption**





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