Introduction to Cloud

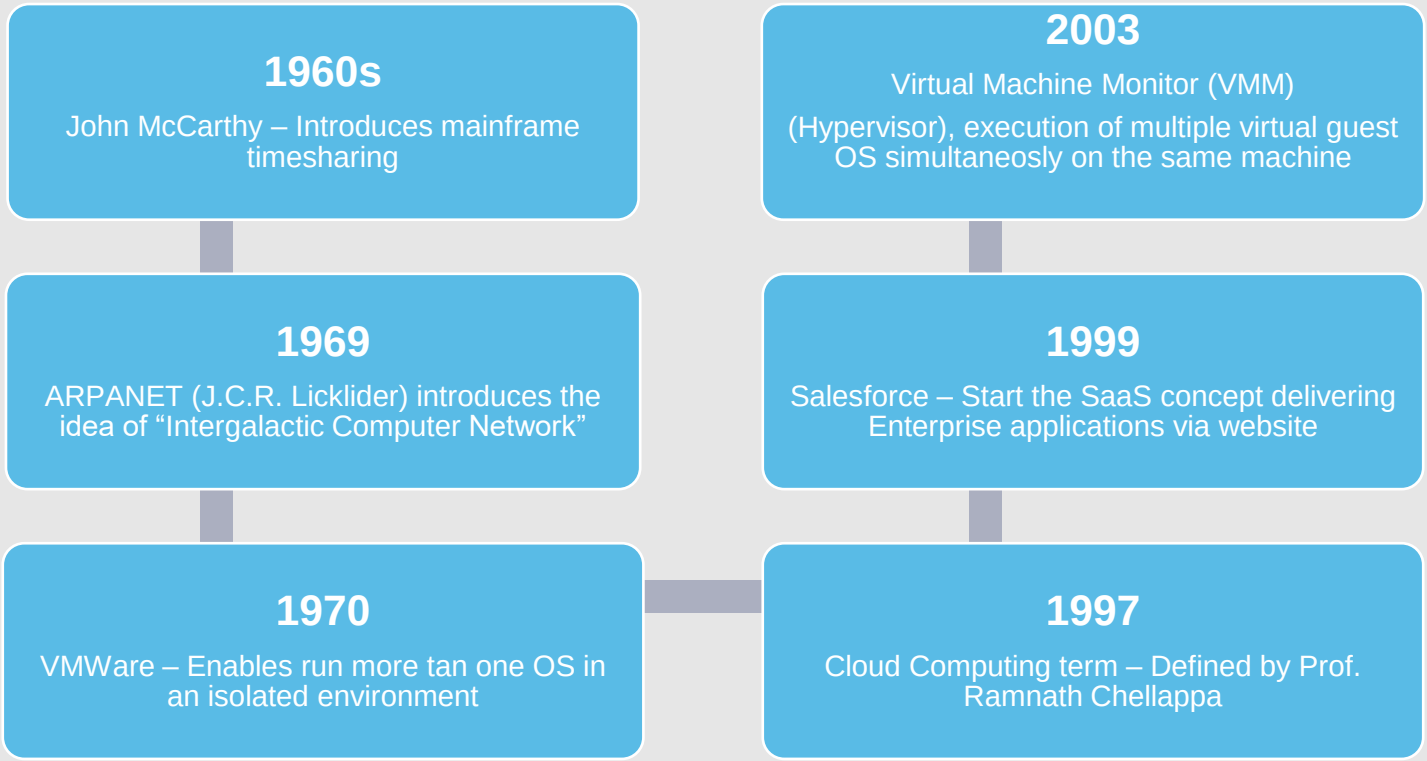
INNOVATE. TRANSFORM. DELIVER.

Agenda

1. History of Cloud Computing
2. What‘s the smell of Clouds?
3. Cloud Providers
4. Advantages
5. Disadvantages
6. Use Cases

History of Cloud Computing

History of Cloud Computing



History of Cloud Computing

1995 amazon.com was launched

2000 Amazon launch an e-commerce service called Merchant.com

2002 Amazon Web Services platform exposes technology and product data from Amazon

2003 The initial growth of the idea evolved (the operating system becomes the internet)

2006 **AWS launches Infrastructure as a Service (IaaS)**

amazon web services

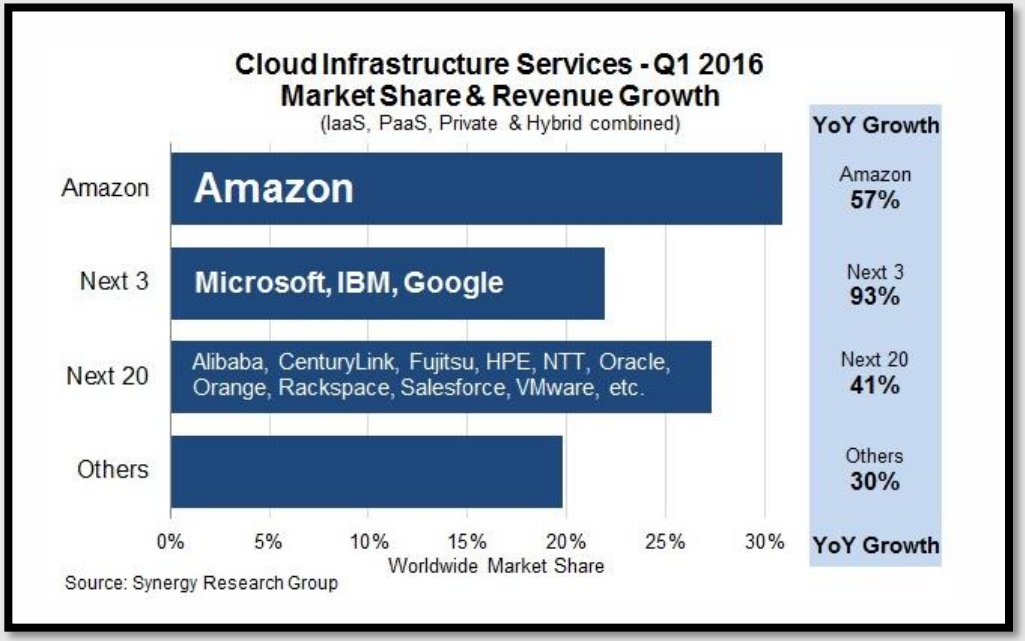
Amazon EC2

Amazon S3

History of Cloud Computing

2014

2016



What‘s the smell of Clouds?

What‘s the smell of Clouds?

- What is “**The Cloud**”?
- What is “**Cloud Computing**”?
- What **services** do Cloud Services Providers (CSP) **offer**?
- What is **deep inside** those services?
- What are the Cloud Computing **Models**?
- …

What‘s the smell of Clouds?

- **What is “The Cloud”?**
  - Easy, “The computer of another”

What‘s the smell of Clouds?

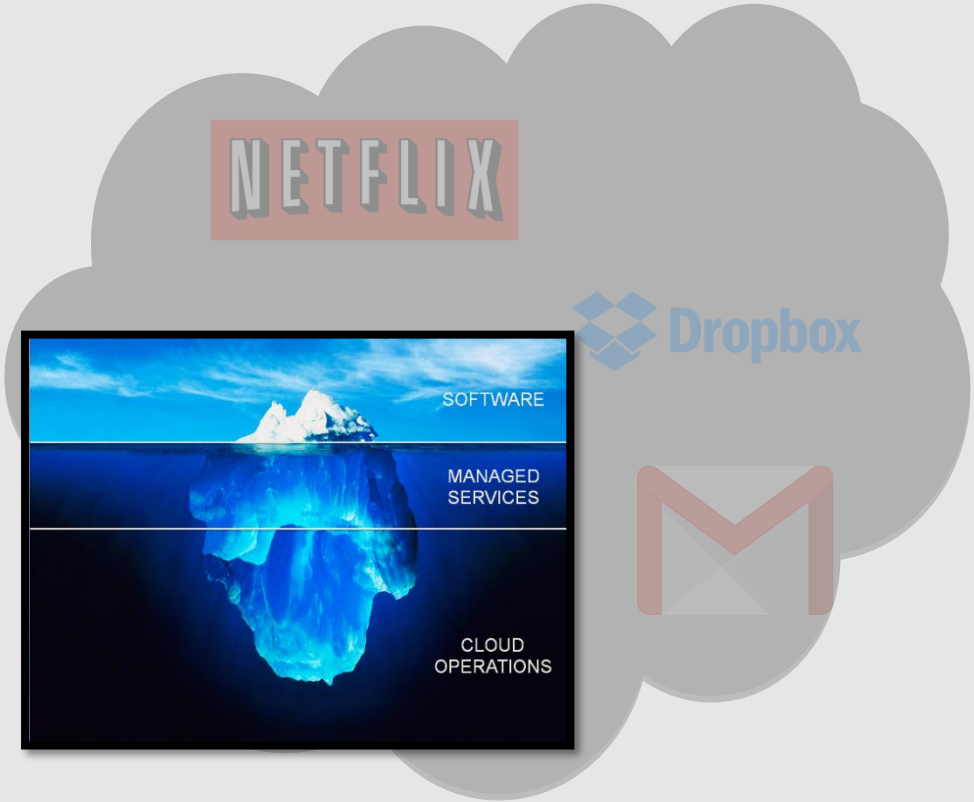
- **Common Deployment Models:**
  - Public (**Hosted** - onPremise)
  - Private (Hosted - **onPremise**)
  - Hybrid (**Hosted & onPremise**)

What‘s the smell of Clouds?

- What services do Cloud Services Providers (CSP) offer

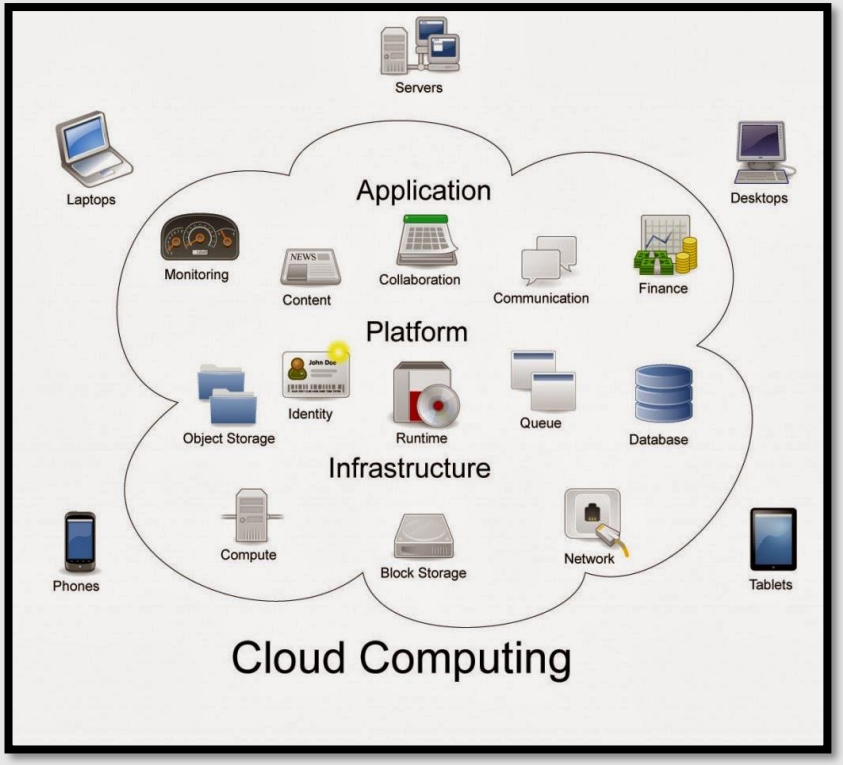
What‘s the smell of Clouds?

- **What services do Cloud Services Providers (CSP) offer?**



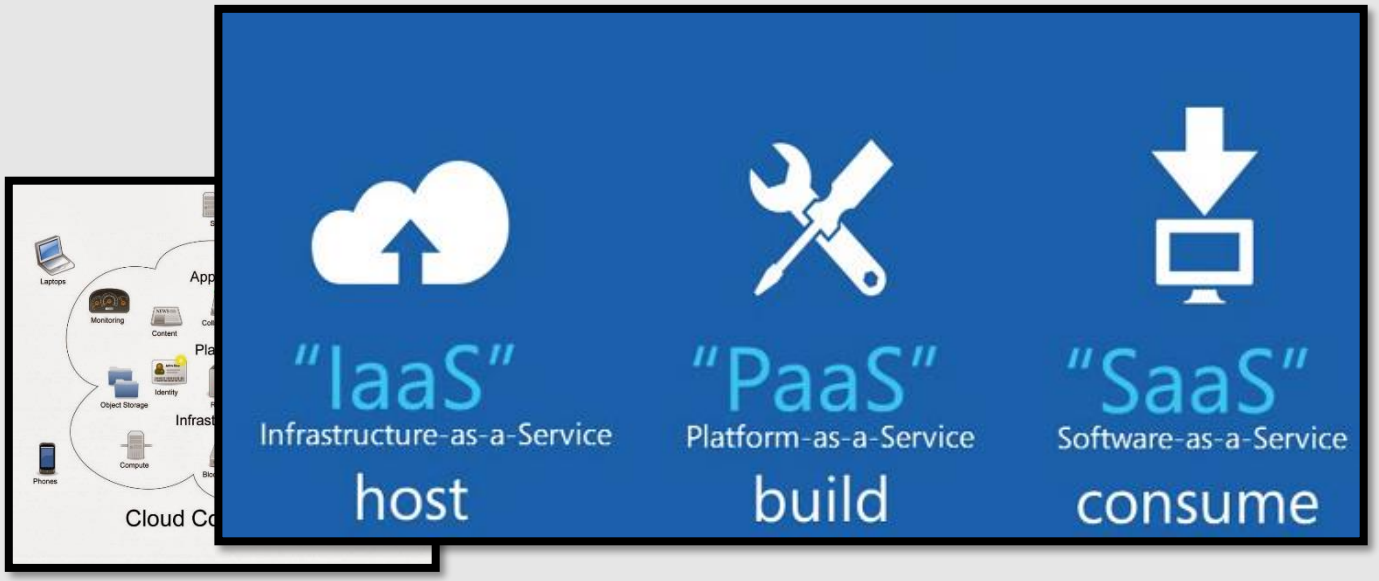
What‘s the smell of Clouds?

- **What is deep inside those services?**

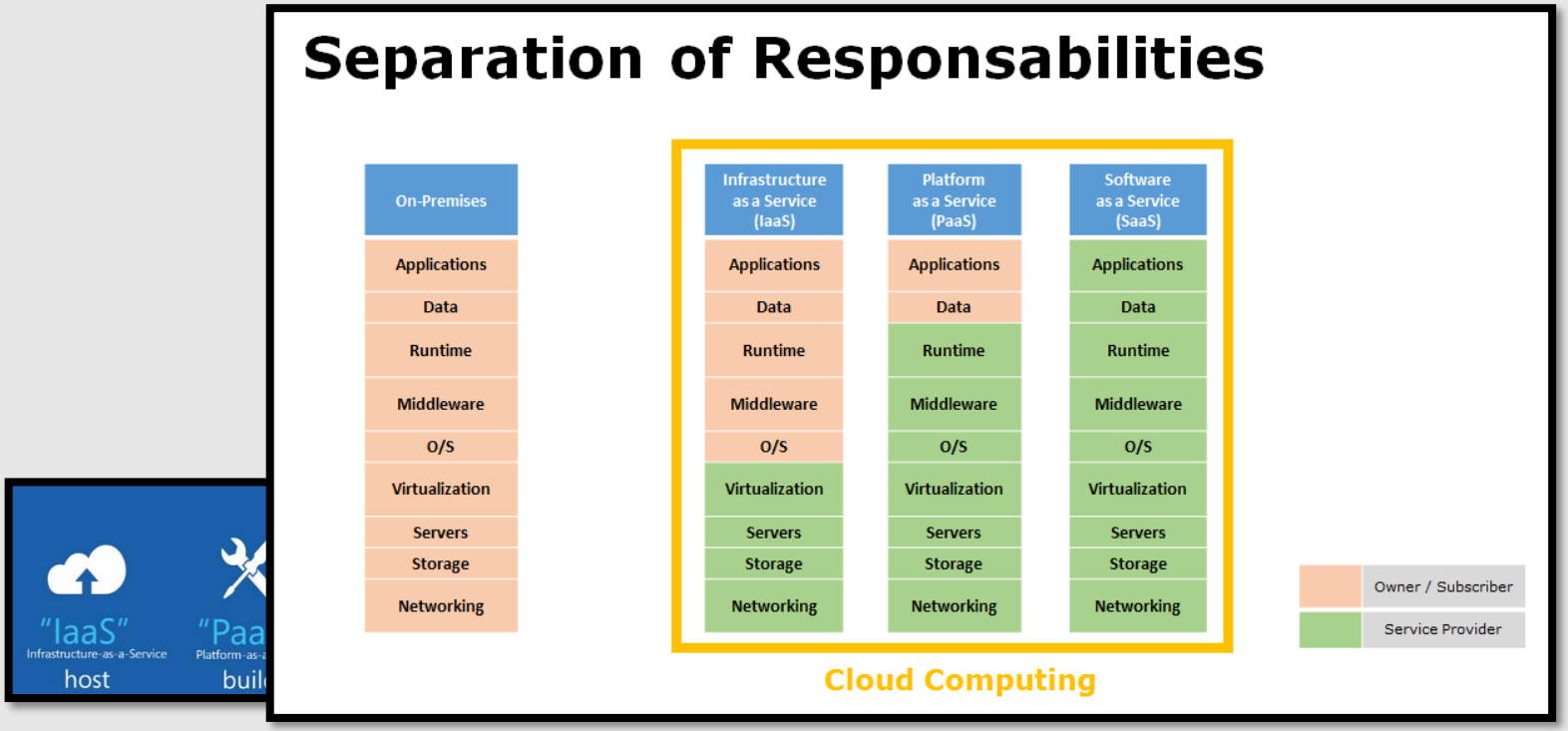


What‘s the smell of Clouds?

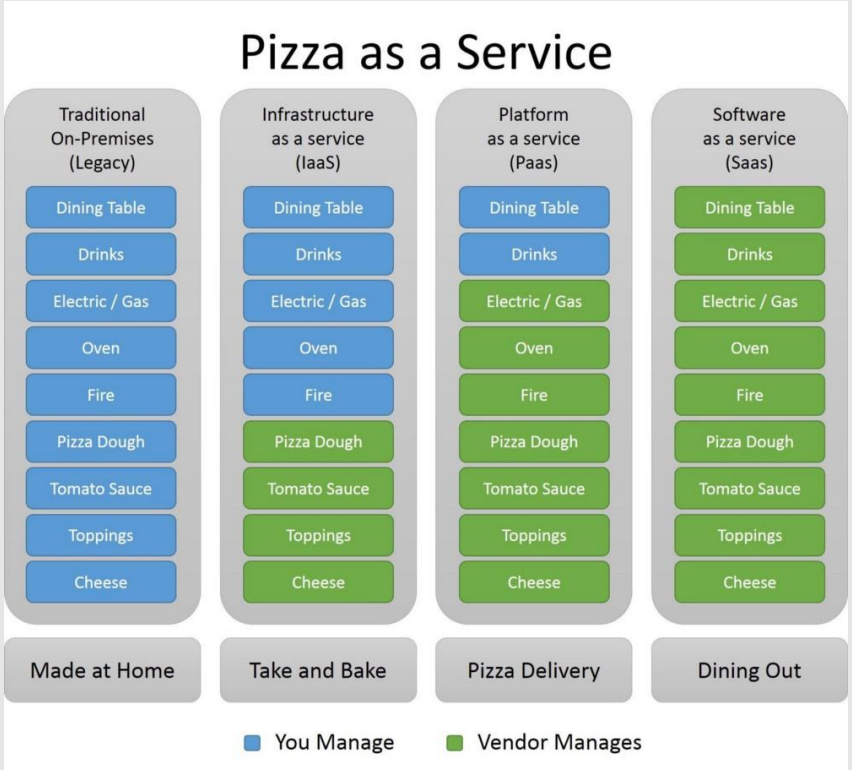
- **What are the Cloud Computing Models?**



What‘s the smell of Clouds?

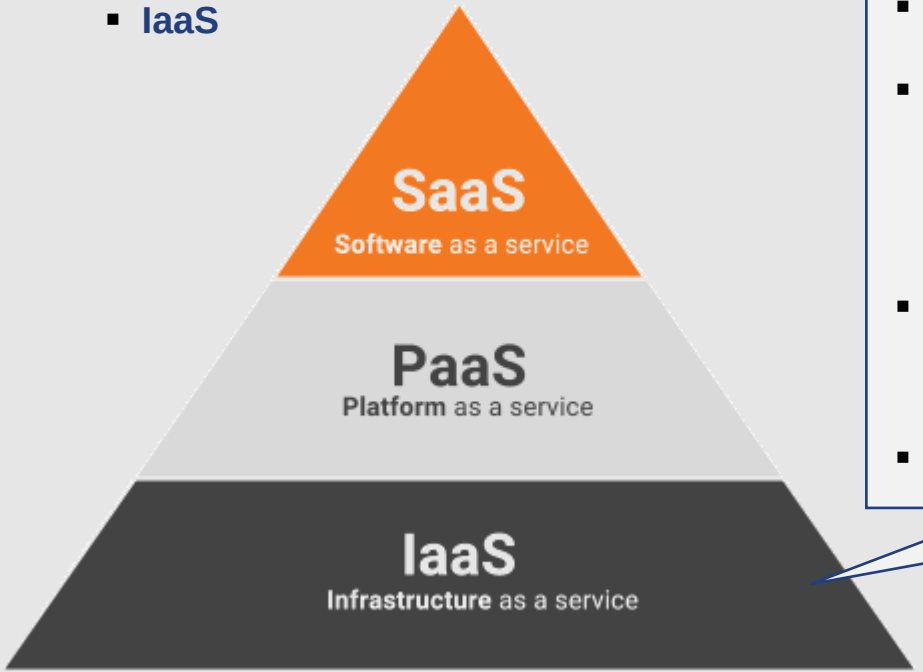


What‘s the smell of Clouds?



What‘s the smell of Clouds?

- **IaaS**

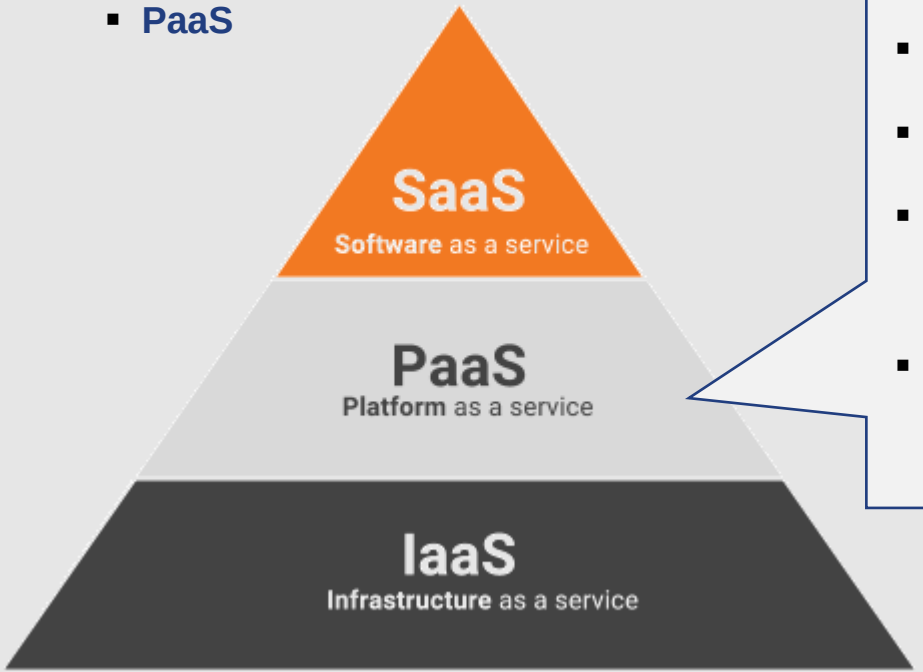


- Target **Audience**: DevOps
- **DevOps Responsibilities**: Environment Setup (OS, app. server, network), Hardware needed (CPU, Memory, etc) , etc.
- **Providers Responsibilities**: Hardware provisioning.
- **E.g**: AWS EC2, VMWare, vCloud

Flexibility – Responsibility – Cost

What‘s the smell of Clouds?

- **PaaS**

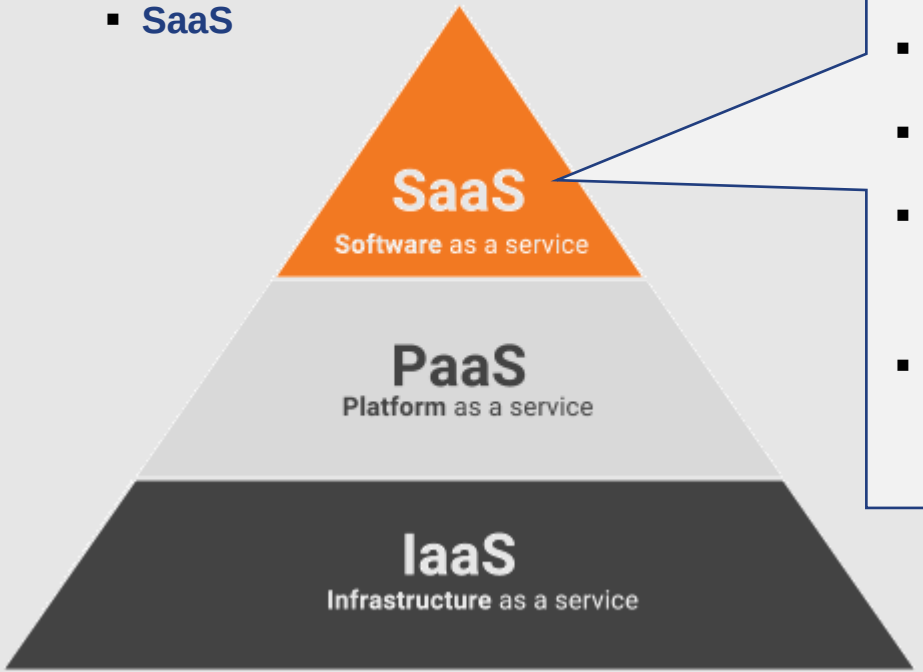


- **Target Audience**: Developers
- **Developers Responsibilities**: development
- **Providers Responsibilities**: Infrastructure maintenance.
- **E.g**: AWS Beanstalk, Google App Engine, Heroku, etc.

Flexibility – Responsibility – Cost

What‘s the smell of Clouds?

- **SaaS**

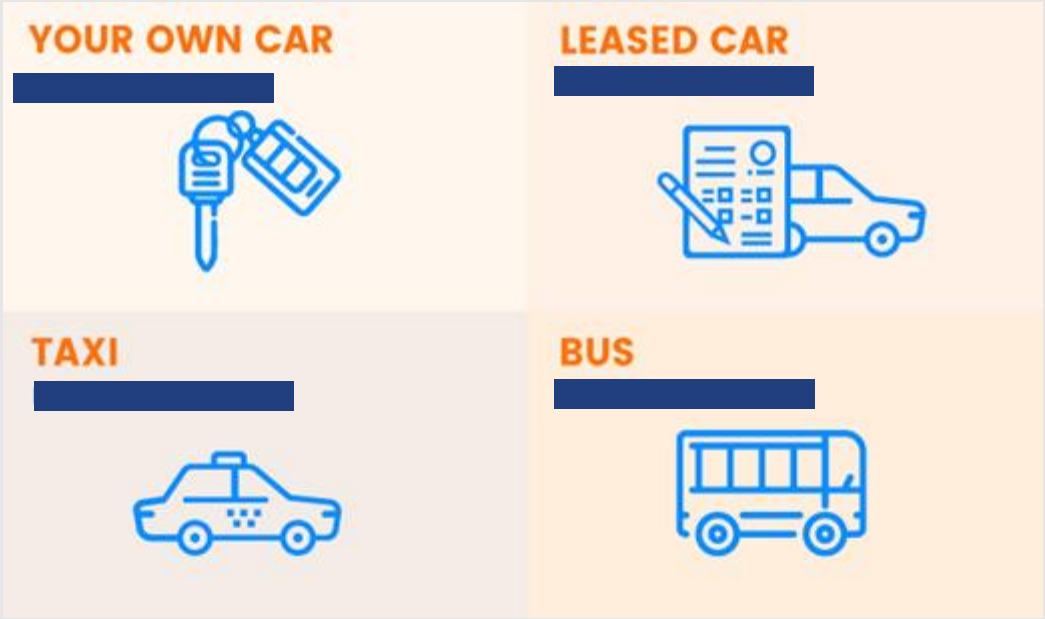


- **Target Audience**: Users & Developers
- **Users Responsibilities**: none
- **Providers Responsibilities**: development, application maintenance, etc.
- **E.g**: Gmail, dropbox, drive, google docs, etc.

Flexibility – Responsibility – Cost

What‘s the smell of Clouds?

- Quiz 1



What‘s the smell of Clouds?

- **Quiz 2**
  - **In a PaaS approach who have the responsability to update/patch the Operative System?**
    - The user
    - The Cloud Provider
    - Your company IT department

Cloud Providers

Cloud Providers

- 2006

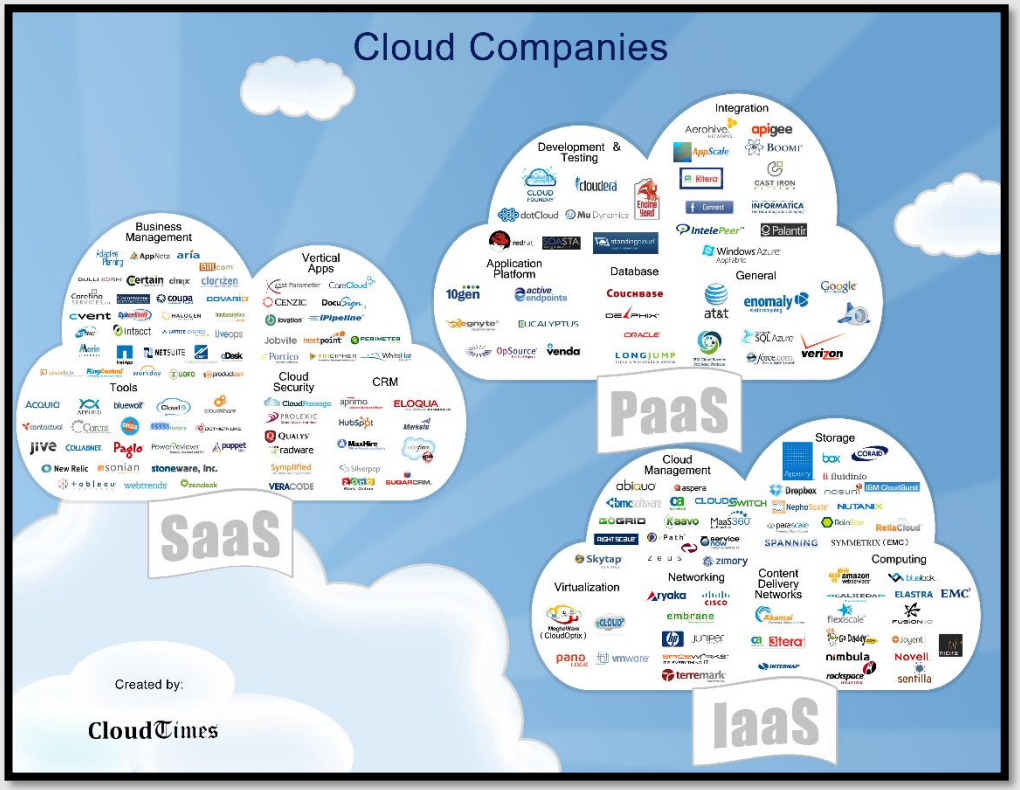
- IaaS

Amazon
EC2

Amazon
S3

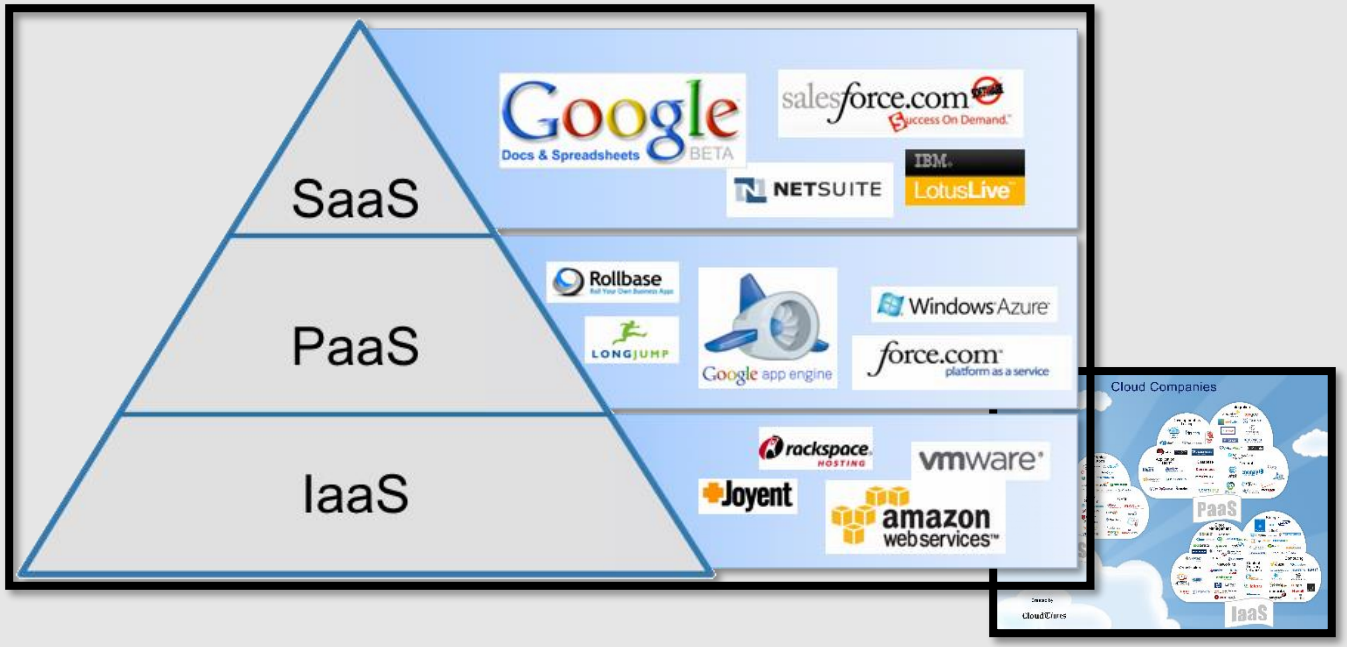
Cloud Providers

- 2011

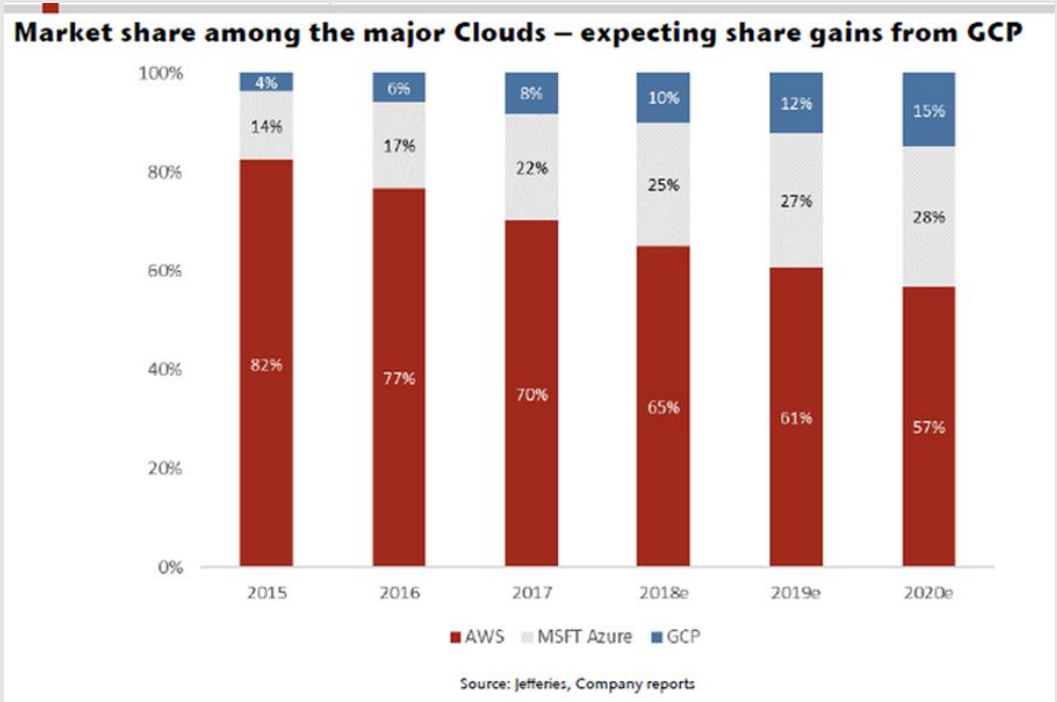


Cloud Providers

- 2015



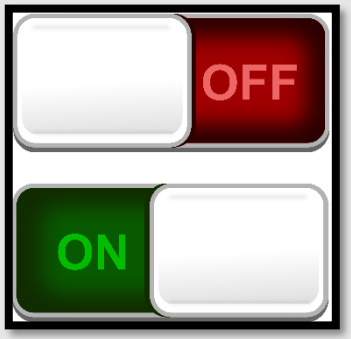
Cloud Providers

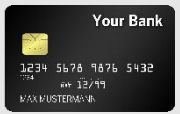


Advantages

Advantages

- Quick provision of the infrastructure





Advantages

Project Natick

- Out of the box Infrastructure security

Advantages

- **Increased Availability and Reliability**

Cloud Reliability

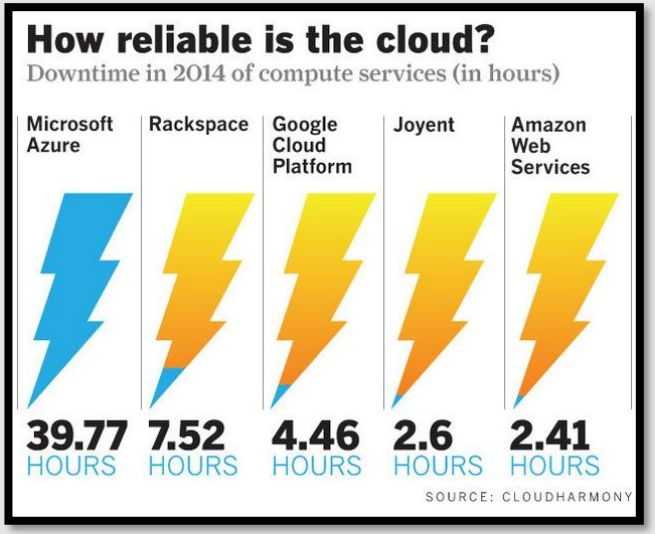
99,5 %

Source: http://itbusinessedge.com

Traditional Data Center Reliability

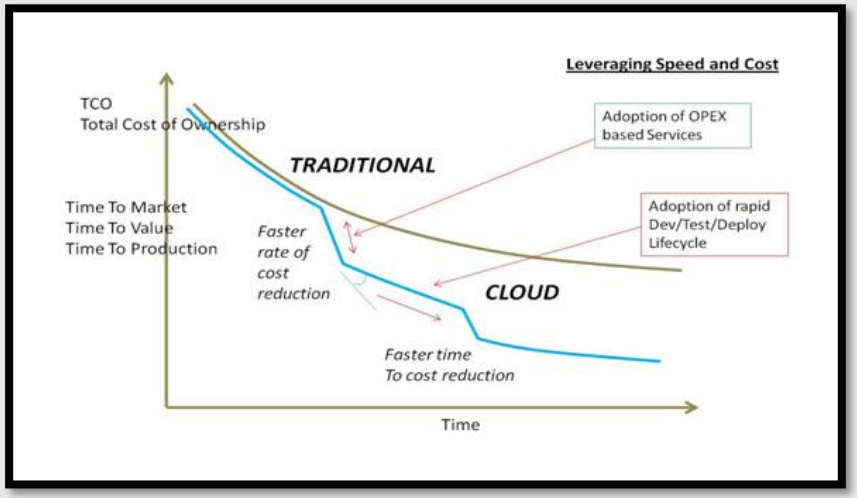
98,5 %

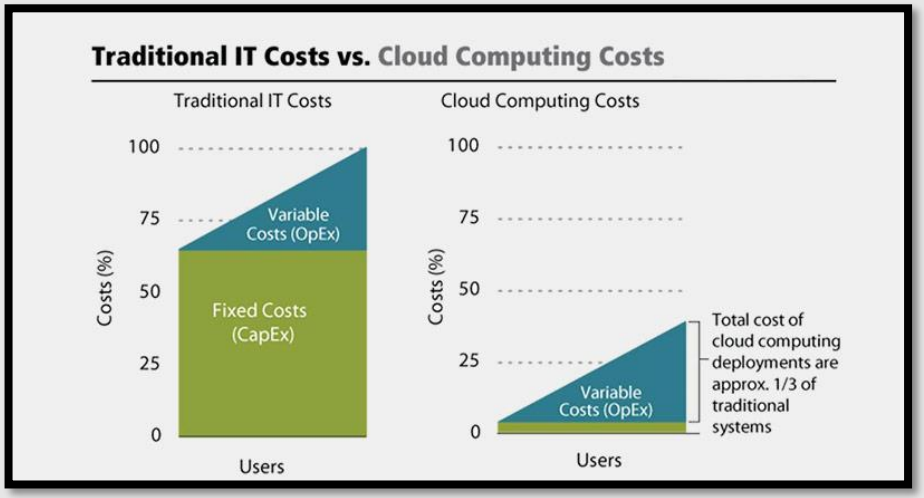
Source: cloudtweaks.com



Advantages

- **Reduced Investments and Proportional Costs**



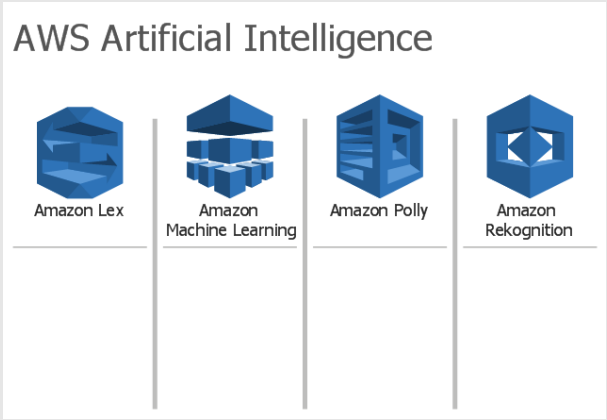


Advantages

- Pay per Use

Advantages

- **Amazing Saas Services**



IBM WATSON

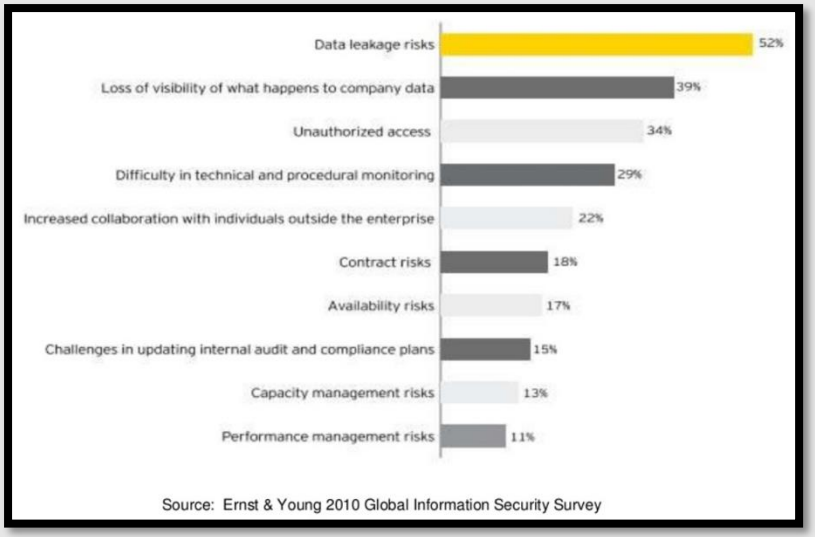
TensorFlow

Dialogflow

Disadvantages

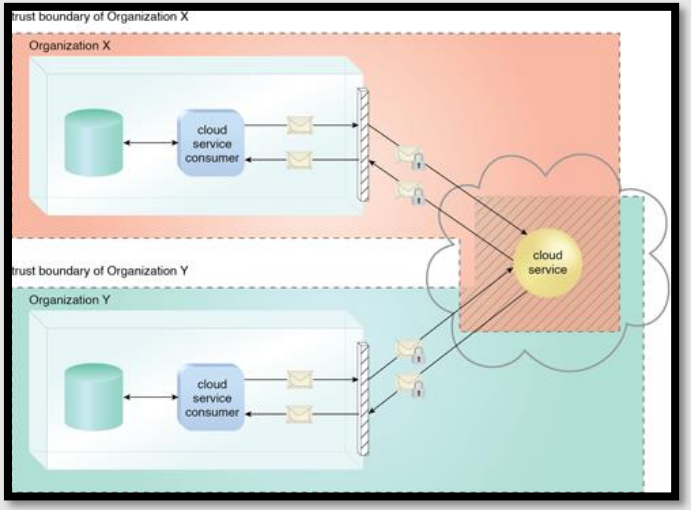
Disadvantages

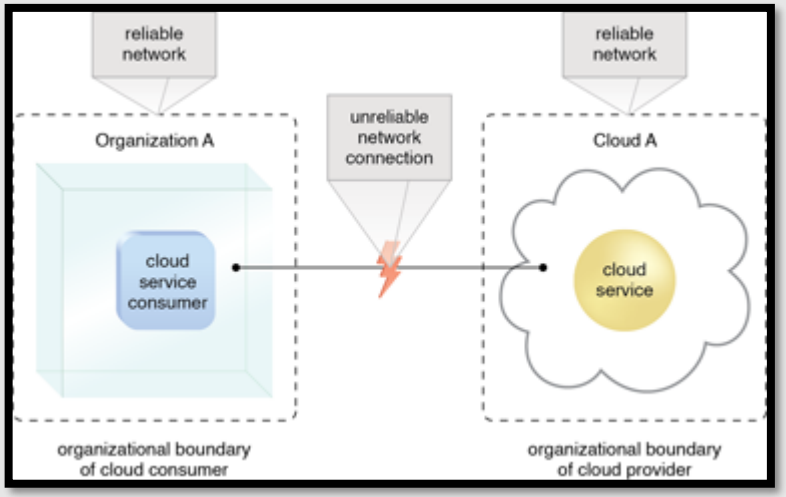
- **Increased Security Vulnerabilities**



Disadvantages

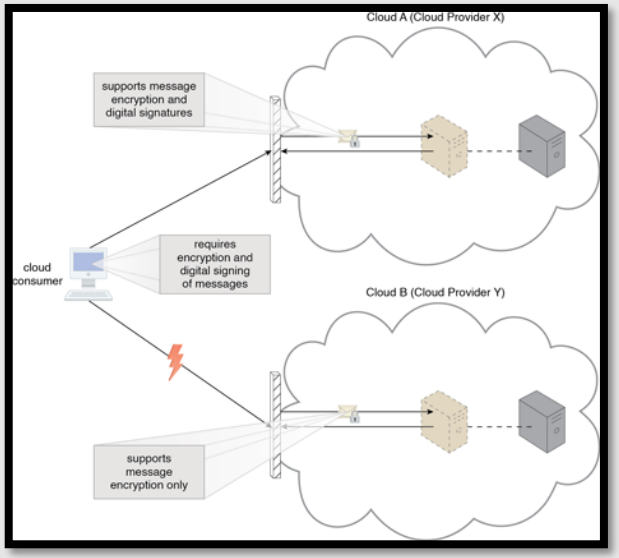
- **Reduced Operational Governance Control**

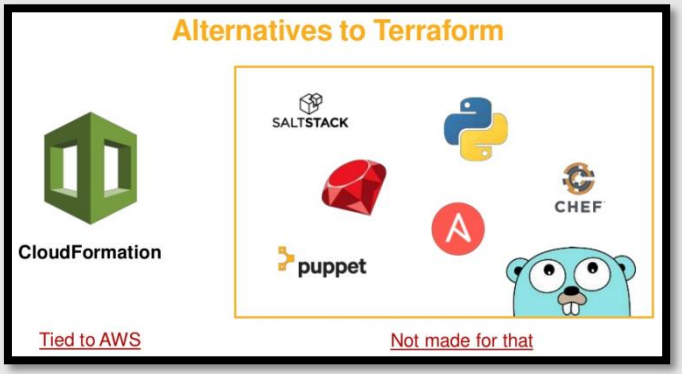


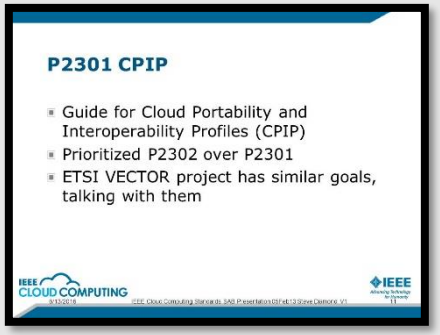


Disadvantages

- Limited Portability between Cloud Providers

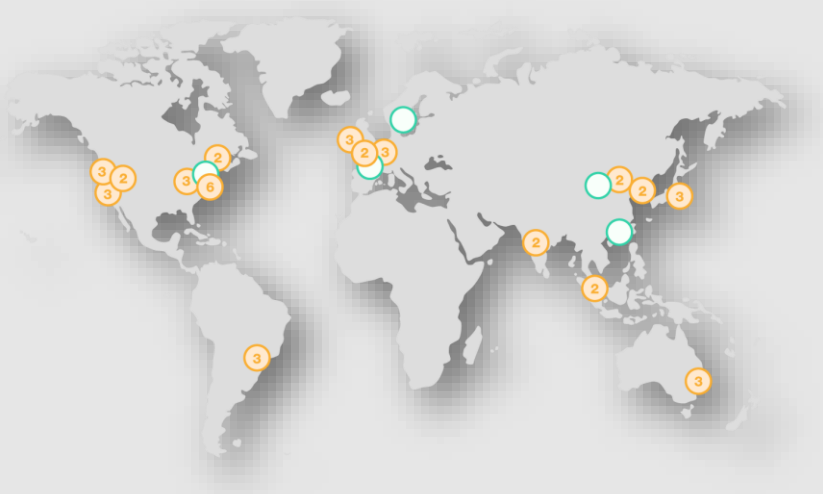


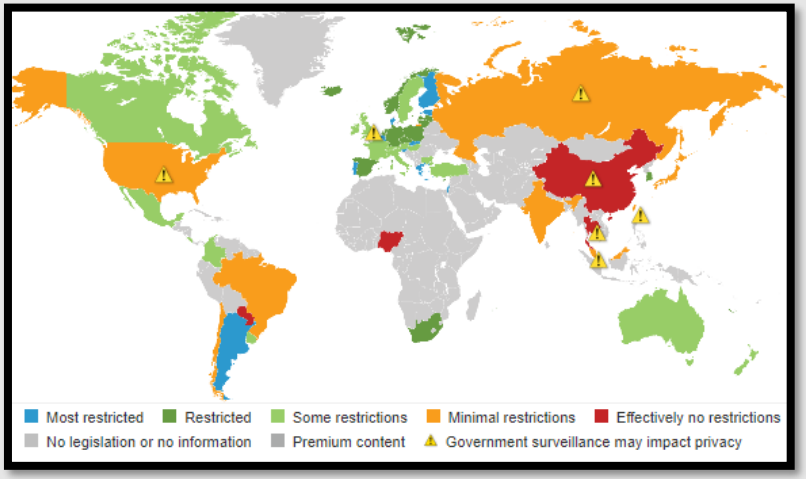




Disadvantages

- **Multi-Regional Regulatory and Legal Issues**





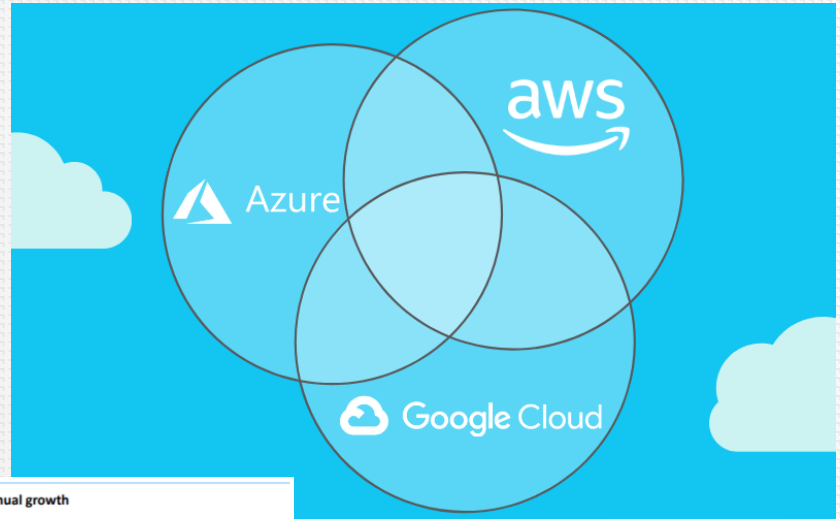
Let’s see them in action!

Google Cloud

Introduction

During last months you have seen multiple technologies now is time we talk about platforms.

In GFT we define ourselves as cloud provider agnostic, but for training purpose we will use GCP as main provider.



Worldwide cloud infrastructure spending and annual growth
Canalys estimates, Q4 2019

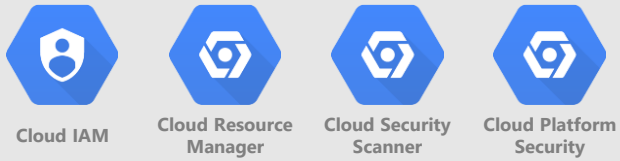
Cloud service provider	Q4 2019 (US$ billion)	Q4 2019 market share	Q4 2018 (US$ billion)	Q4 2018 market share	Annual growth
AWS	9.8	32.4%	7.3	33.4%	33.2%
Microsoft Azure	5.3	17.6%	3.3	14.9%	62.3%
Google Cloud	1.8	6.0%	1.1	4.9%	67.6%
Alibaba Cloud	1.6	5.4%	1.0	4.4%	71.1%
Others	11.6	38.5%	9.3	42.4%	24.4%
Total	**30.2**	**100.0%**	**22.0**	**100.0%**	**37.2%**

canalys

Note: percentages may not add up to 100% due to rounding
Source: Canalys Cloud Channels Analysis, January 2019

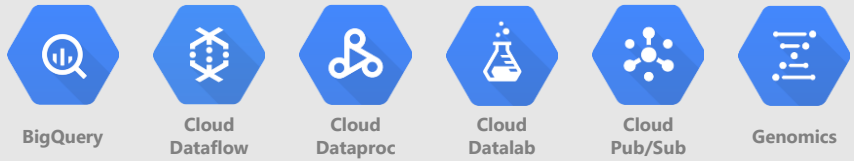
Compute

Identity & Security

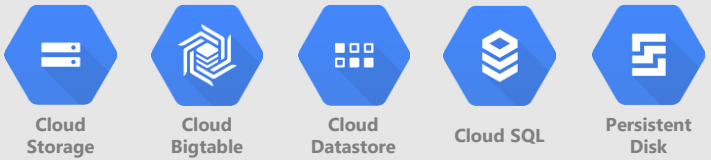


Networking

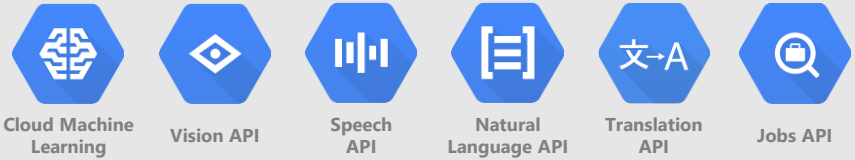
Big Data



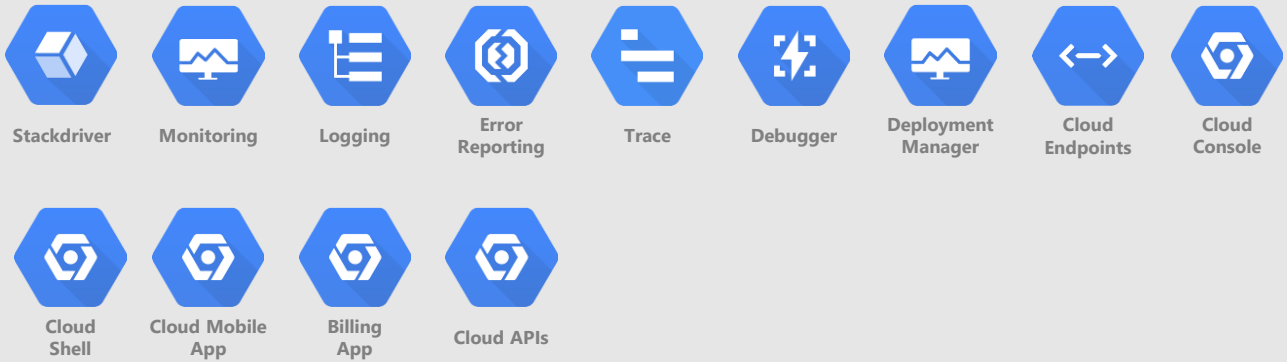
Storage and Databases



Machine Learning

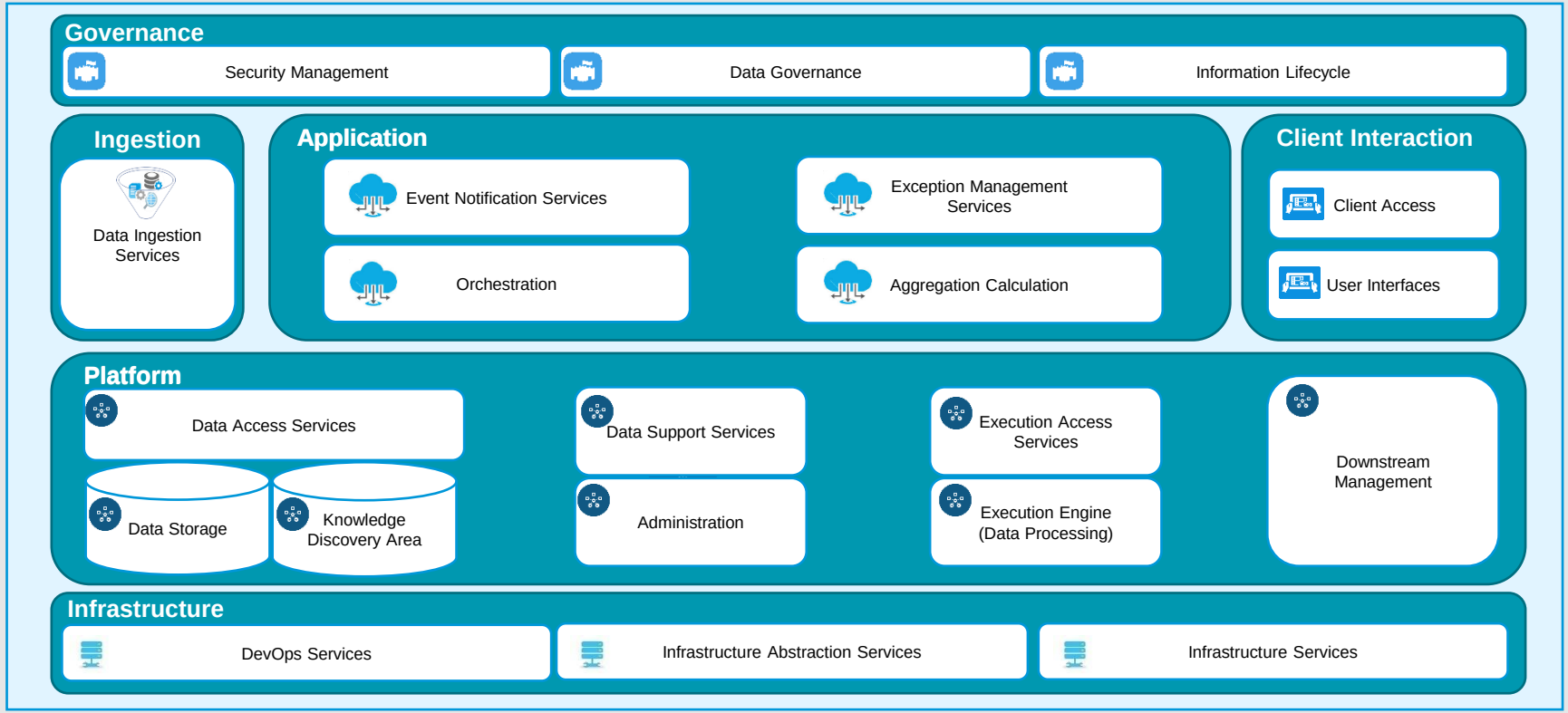


Management Tools

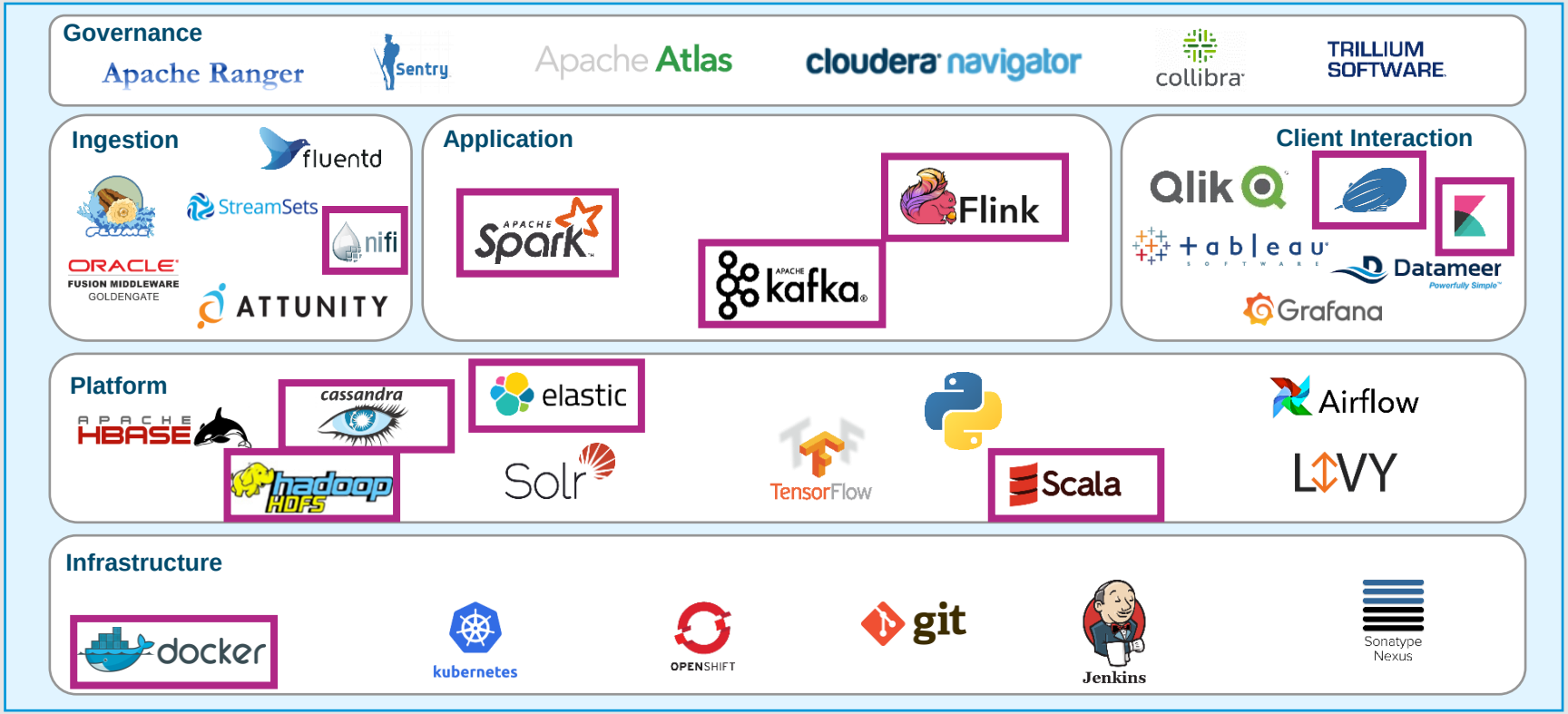


Developer Tools

Data Reference Architecture



Technologies



As a summary…

What you have seen in DLP

Ingestion

nifi

hadoop

debezium

Processing

Spark

Flink

kafka

Storage

cassandra

elastic

SQL

Analysis

Apache Zeppelin

HUE

CO

The mapping in Cloud (GCP)

Google Cloud Platform

Ingestion

IoT Core

Processing

Cloud Pub/Sub

Cloud Dataproc

Cloud Dataflow

Storage

Cloud Bigtable

Cloud SQL

Analysis

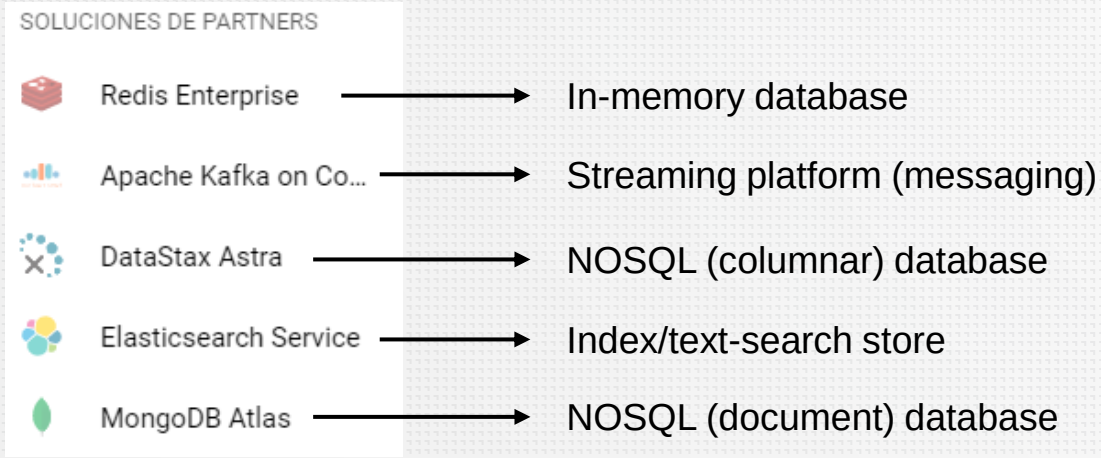
jupyter

CO

Cloud Datalab

Vendors as a service

- Even though GCP provides similar services, in order to facilitate adoption and reduce vendor lock-in, they also provide **third party's software as a service**.



Shaping the future of digital business