

Course Title

IoT Wireless & Cloud Emerging Technologies

❖ Modules

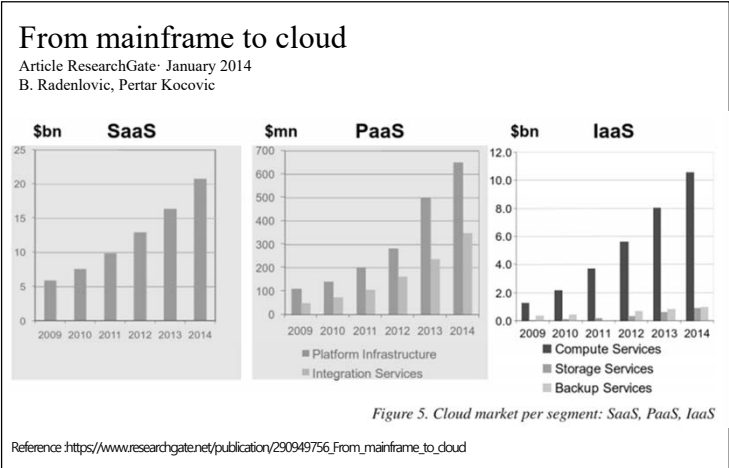
- 1. IoT Business & Products
- 2. IoT Architecture & Technologies
- 3. IoT Networks
- 4. Wi-Fi & Bluetooth
- 5. Cloud Technology
- 6. IoT Bluetooth & Wi-Fi and EC2 Cloud Projects

Cloud Technology

Cloud Market Analysis

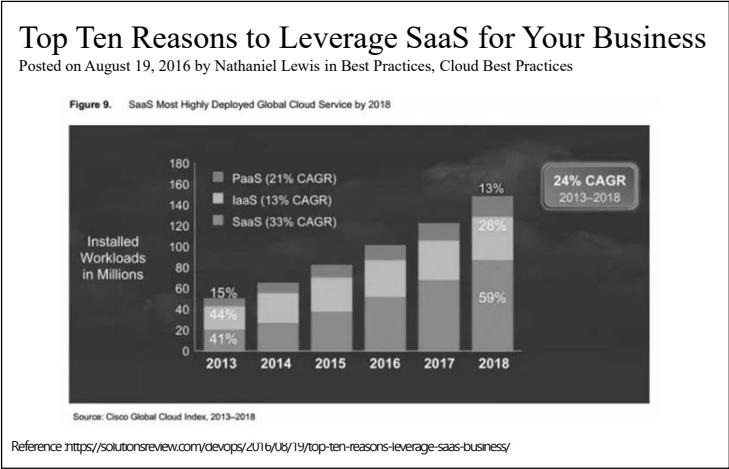
Cloud Market Analysis

❖ 2017 Cloud Infrastructure Services



Cloud Market Analysis

❖ 2017 Cloud Infrastructure Services

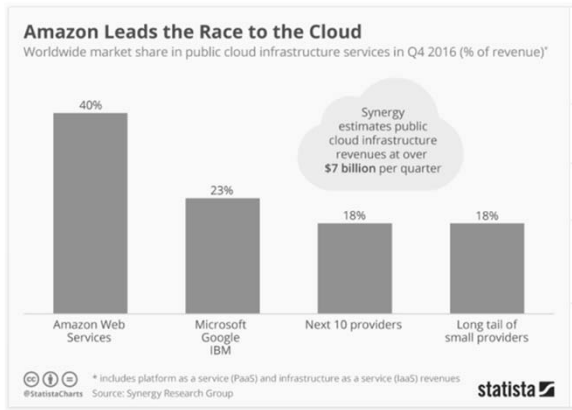


Cloud Market Analysis

❖ 2017 Cloud Infrastructure Services

Amazon Leads the Race to the Cloud

by Felix Richter, Feb 8, 2017



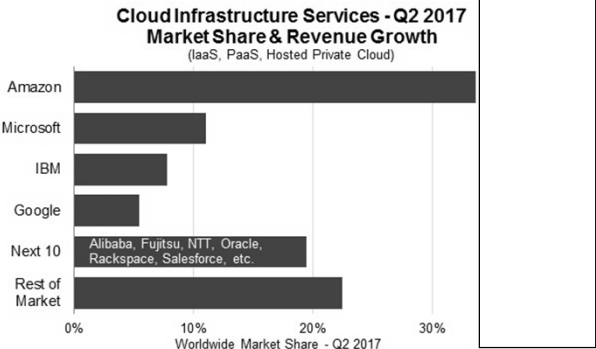
Reference: <https://www.statista.com/chart/7994/cloud-market-share/>

Cloud Market Analysis

❖ 2017 Cloud Infrastructure Services

The Leading Cloud Providers Continue to Run Away with the Market

RENO, NV, July 27, 2017



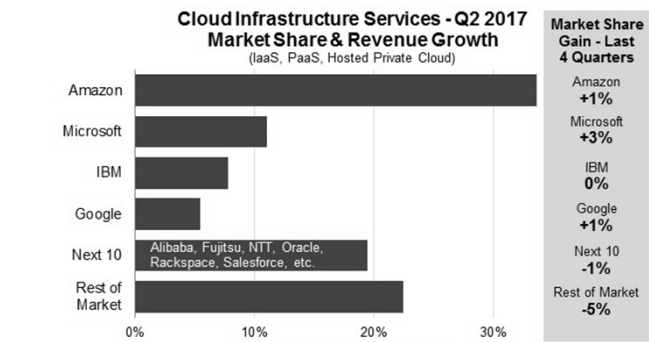
Reference: <https://www.srgresearch.com/articles/leading-cloud-providers-continue-run-away-market>

Cloud Market Analysis

❖ 2017 Cloud Infrastructure Services

The Leading Cloud Providers Continue to Run Away with the Market

RENO, NV, July 27, 2017




Source: Synergy Research Group
Reference <https://www.srgresearch.com/articles/leading-cloud-providers-continue-run-away-market>

Cloud Technology

Top Cloud Companies & Services

Top Cloud Companies & Services

❖ Top Cloud Provider Companies

- Amazon Web Service 
- Microsoft 
- IBM 
- Google 

Cloud Technology



Top Cloud Companies & Services

❖ AWS



- AWS (Amazon Web Service)
- The #1 Cloud Corporation (1st > 2nd+3rd+4th)
- Launched in 2006
- AWS global cloud-based products
 - Computing, Storage, Databases, Analytics
 - Networking, Mobile, IoT, Management, Security
 - Developer & Management tools, Enterprise Apps.

Top Cloud Companies & Services

❖ AWS



- Amazon EC2 (Amazon Elastic Compute Cloud)
 - Web services that provides Cloud computations
 - Secure
 - Resizable
 - Developer tools are provided
 - Supports failure resilient application development
 - Helps to eliminate common failure scenarios

Top Cloud Companies & Services

❖ AWS



- Amazon S3 (Simple Storage Service)
 - Security and Access Management
 - Includes several mechanisms to control and monitor who can access your data
 - Can easily control how, when, and where your data is accessible
 - Secure connections using VPC (Virtual Private Cloud) endpoints
 - Does not need a gateway or NAT instances

Top Cloud Companies & Services

❖ Amazon S3



- Public web service original releases
 - United States in March 2006
 - Europe in November 2007
- Provides storage through web service interfaces
 - REST
 - SOAP
 - BitTorrent



Top Cloud Companies & Services

❖ Amazon Cloud Drive



- Amazon Cloud Drive was released in March 2011
- Web storage application from Amazon
- Storage Space Characteristics
 - Allowed access from up to 8 devices
 - Multiple mobile devices & different computers
 - Access permitted using different browsers on the same computer

Top Cloud Companies & Services

❖ Amazon Cloud Drive



- Cloud Player (Originally bundled)
 - Users can play music in their Cloud Drive from any computer or Android device
 - Music browsing based on song titles, albums, artists, genres (website only), and playlists

Top Cloud Companies & Services

❖ Amazon Cloud Drive Options



- Unlimited Photos
 - Unlimited storage for photos & raw data files
 - Multi-gigabyte video storage capacity
- Unlimited Everything
 - Unlimited storage for photos, videos, documents, and various files types

Cloud Technology

Microsoft



Microsoft

Top Cloud Companies & Services

❖ Microsoft



- The #2 Cloud Corporation
- Launched in 1975
- Microsoft develops, manufactures, licenses, supports, and sells computer software, consumer electronics, personal computers, and services
- In 2014, the company started to scale back on hardware development and started to focus more on Cloud technology

Top Cloud Companies & Services

❖ Microsoft



- Microsoft Office 365
 - Cloud-based subscription service
 - Combines apps (like Excel and Outlook) with cloud services (like OneDrive and Microsoft Teams)
 - Enables users to create and share anywhere on any device

Top Cloud Companies & Services

❖ Microsoft



- Microsoft Azure
 - Compute, Networking, Storage, Web, Mobile, Database, Data analysis, etc.
 - Users can access, build, and deploy cloud technology wherever needed
 - Hybrid cloud technology
 - Helps to develop data-driven intelligent apps
 - Advantages in Microsoft security, privacy, transparency, and computer compliances

Cloud Technology

IBM



Top Cloud Companies & Services

❖ IBM



- IBM (International Business Machines) Corporation
- The #3 Cloud Corporation
- Supports public, private, and hybrid clouds
- Offers more than 130 unique services
 - IaaS (Infrastructure as a Service)
 - PaaS (Platform as a Service)
 - SaaS (Software as a Service)

Top Cloud Companies & Services

❖ IBM's Main Service



- IBM Cloud Object Storage
 - Supports data storage, management, and controlled access
 - Direct application connection to Object Storage and integration to IBM Cloud services
 - Supports Self-Service Portals & REST APIs
 - REST: Representational State Transfer
 - API: Application Programming Interface

Top Cloud Companies & Services

❖ IBM's Main Service



- IBM Cloud Private
 - Transformative platform used in building (or modernizing) cloud applications
 - Pre-packaged enterprise-class solution
 - Provides enhanced security, speed, and control
- IBM Cloud Streaming Video
 - Provides solutions that simplify workflow management and video streaming
 - B2B (Business to Business) based video services support

Cloud Technology

Google



Top Cloud Companies & Services

❖ Google



- The #4 Cloud Corporation
- Launched in 1998
 - Google Search is the most dominant search engine in the United States market, with a market share of 65.6%
- In 2011, Google started the Google Cloud Platform



Top Cloud Companies & Services

❖ Google



- Google Compute Engine
 - Provides IaaS based VMs (Virtual Machines)
 - VMs run in Google's data centers
 - Provides cloud tools and workflow support
 - Enables scalable global services based on advanced load-balancing cloud technology

Top Cloud Companies & Services

❖ Google Cloud



- Google App Engine
 - Released as a preview in April 2008
 - PaaS (Platform as a Service) for web applications
 - Provides automatic scaling based on resource demands and server load
- Google Cloud Storage
 - Launched in May 2010
 - Online file storage service

Top Cloud Companies & Services

❖ Google Cloud



- Google BigQuery
 - Released in April 2012
 - Data analysis tool that uses SQL-like queries to process big datasets in seconds
- Google Compute Engine
 - Released in June 2012
 - IaaS (Infrastructure as a Service) support to enable on demand launching of VMs (Virtual Machines)

Top Cloud Companies & Services

❖ Google Cloud



- Google Cloud Endpoints
 - Released in November 2013
 - Tool to create services inside App Engine
 - Easily connects from Android, iOS, and JavaScript clients

- Google Cloud DNS (Domain Name System)
 - DNS service supported by the Google Cloud

Top Cloud Companies & Services

❖ Google Cloud



- Google Cloud Datastore
 - NoSQL (No Structured Query Language) data storage

- Google Cloud SQL (Structured Query Language)
 - Released in February 2014 as GA (General Availability)
 - Fully managed MySQL database

Top Cloud Companies & Services

❖ Apple's iCloud

- Developed by Apple, Inc.
- Public release in October 2011
- Cloud Storage & Cloud Computing
- OS (Operating System)
 - OS X (10.7 Lion or later)
 - Microsoft Windows 7 or later
 - iOS 5 or later



Top Cloud Companies & Services

❖ iCloud replaces MobileMe

- Subscription-based collection of Apple's online services and software
- MobileMe was replaced by iCloud
 - MobileMe ceased services in June 2012
 - MobileMe users were allowed transfers to iCloud until July 2012

mobileme



Top Cloud Companies & Services

❖ iCloud Features

- Email, Contacts, and Calendars
- Find My Friends
- Backup & Restore
 - Back up feature for device settings & data
 - iOS 5 or later required
- Find My iPhone
 - Enables a user to track the location of an iOS device or Mac
 - Formerly a feature of MobileMe



Top Cloud Companies & Services

❖ iCloud Features

- Can manage lost or stolen Apple devices
- Back to My Mac
 - Enables remote log in to other computers that have Back to My Mac installed (using the same Apple ID)
- iWork for iCloud
 - Apple's iWork suite (Pages, Numbers, and Keynote) made available on a web interface



Top Cloud Companies & Services

❖ iCloud Features

- Photo Stream
 - Can store (most recent) photos
 - Free storage (with day limit)
- iCloud Photo Library
 - Stores all photos at original resolution
 - Stores photo metadata
- Storage
 - First introduced in 2011
 - Free storage per account



Top Cloud Companies & Services

❖ iCloud Features

- iCloud Drive
 - Can save photos, videos, documents, and apps
- iCloud Keychain
 - Secure database for Website and Wi-Fi password
 - Secure Credit card & Debit card management for quick access and auto-fill



Top Cloud Companies & Services

❖ iCloud Features

- iTunes Match
 - iTunes music library scan and match tracks function
 - Serves tracks copied from CDs or other sources



Cloud Technology
References

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