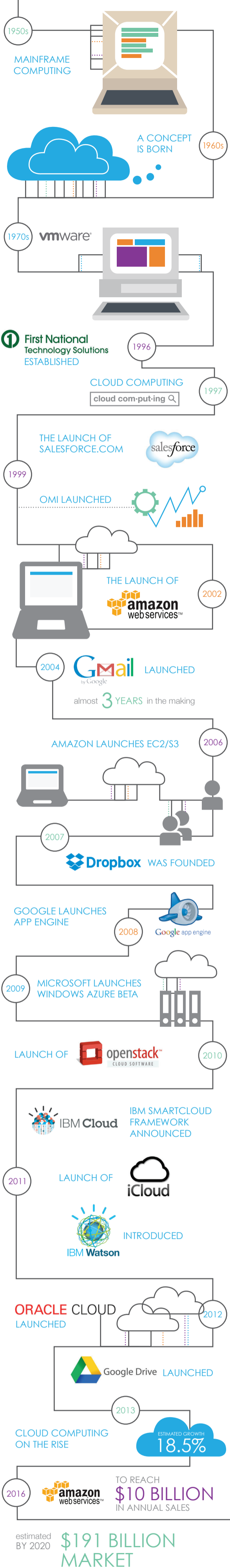


# CLOUD COMPUTING

## WHERE IT BEGAN



Because of the costs to buy and maintain mainframe computers, it was not practical for an organisation to buy and maintain one for every employee. Nor did the typical user need the large (at the time) storage capacity and processing power that a mainframe provided. Providing shared access to a single resource was the solution that made financial sense.

The concept of cloud computing came from ideas of pioneers like J.C.R. Licklider, who envisioned computation in the form of a global network and John McCarthy (who coined the term 'artificial intelligence') who proposed the idea of computation being delivered as a public utility. Some of the first uses included the processing of financial transactions and census data.

Using virtualisation software like VMware, it became possible to execute one or more operating systems simultaneously in an isolated environment. Complete computers (virtual) could be executed inside one physical hardware which in turn can run a completely different operating system.

Offers IaaS to financial institutions for application development, testing, disaster recovery, failover, and data storage.

The term was first coined by information systems Professor Ramnath Chellappa from Emory University.

The service pioneered the concept of delivering enterprise applications via a simple website. This paved the way for both specialist and mainstream software firms to deliver applications over the internet.

Providing market research and analytics that enable financial services companies to segment their markets and target their products so they can grow their customer bases and product penetration.

Amazon Web Services was a platform for creating innovative web solutions and services designed specifically for developers and web site owners. Amazon provided a suite of cloud-based services including storage, computation and even human intelligence through the Amazon Mechanical Turk. AWS is being used by some large banks to run portfolio credit risk simulations in as little as 20 minutes.

Google's email breakthrough was almost three years in the making. But it wasn't a given that it would reach the public at all. Some pick this as a single date to mark the beginning of the modern era of the web.

Amazon launches its Elastic Compute cloud (EC2) as a commercial web service that allows small companies and individuals to rent computers on which to run their own computer applications. This was the first widely accessible cloud computing infrastructure service. This is an example of where cloud offers the opportunity to put building blocks together to serve as architecture to solve problems.

Founded by MIT students Drew Houston and Arash Ferdowsi, as a startup company from the American seed accelerator Y Combinator.

The developer tool enabled users to run their web applications on Google's infrastructure. This was a major step towards widespread adoption of cloud computing.

This was Microsoft's first cloud-based operating system that let developers write programs that run on servers in Microsoft's data centres. This is a key event in cloud computing because the largest software company made a small but significant shift to the web.

Rackspace Hosting and NASA jointly launched the open-source cloud software initiative, which was intended to help organisations offer cloud-computing services running on standard hardware.

This was a framework designed to support Smarter Planet (an IBM initiative). Among the various components of the Smarter Computing foundation, cloud computing is a critical piece.

As of February 2016, the service had 782 million users.

Watson, an artificial intelligence system capable of answering natural language questions, which won several Jeopardy! games against human contestants on the site. Developed in IBM's DeepQA project by a research team led by principal investigator David Ferrucci. Watson was named after IBM's first CEO and industrialist Thomas J. Watson.

While aspects of the Oracle Cloud are still in development, this cloud offering is poised to be the first to provide users with access to an integrated set of IT solutions, including applications, platform and infrastructure layers.

It had 240 million monthly active users as of October 2014. As of September 2015 Google claimed to have over 1 million users / organisations who have purchased paid features of Google Drive.

Gartner forecast that the public cloud services market would grow 18.5% in 2013 to total \$131 billion worldwide, up from \$111 billion in 2012.

In 2015, AWS achieved net sales of \$7.9bn, with Q4 coming in at \$2.4bn – up from \$1.4bn in the previous year.

Cloud computing will be a \$191 billion market, with giants like Google and Microsoft challenging Amazon with their own cloud services.

## HOWEVER THE FINANCIAL INDUSTRY SEEMS TO BE BEHIND THE UPTAKE

**61%** of respondents admitting that a CLOUD STRATEGY IS ONLY IN THE FORMATIVE STAGES WITHIN THEIR ORGANISATION | according to a survey by Cloud Security Alliance

“ Amazon really paved the way with cloud, making it available to the masses not just techies. Today it is hard to distinguish between offerings, cloud is becoming commoditised. The next generation of cloud computing will deliver more value by automating everything from request to deployment and configuration. ”

BRETT NORTON, CTO, PROVENIR