1.1 Origins of Software-as-a-Service

Welcome to the very first video of the course where we are learning about the essential of software as a service Business. I think for the very first video, it is proper to learn about the origin of the SaaS field, as it is not that far back into the history when this whole field was created. So, let's go for that.

When we think about the internet sector, most of us imagine it as a universe with endless possibilities for businesses across the globe. Indeed, since its mainstream adoption in the 1990s, the Internet revolutionized various aspects of business culture, such as enabling near-instant communication, and altered how businesses operate and compete. However, the integration of the internet into the business world has not been linear and didn't just appear. It's been building up, changing how we do business, share ideas, and connect with each other.

The initial euphoria surrounding the internet's potential gave rise to an era of unprecedented growth and optimism, known as the dot com era or dot com bubble. Investors, entrepreneurs, and the general public were increasingly excited about the potential of Internet companies to revolutionize how business was done. Yet, beneath the surface of this booming enthusiasm, there were early, subtle signs that the story might not have a universally happy ending.

During this period from the late 1990s with its peak in 2000, countless stories began to emerge of millionaires and internet entrepreneurs who achieved enormous wealth overnight. Investors were eager to put their money into any company that had a ".com" in its name, anticipating that the internet would change the world. During this period, access to venture capital was relatively easy for tech startups. The success stories of early internet companies attracted a flood of venture capital funding to the sector, even for companies without proven revenue streams or clear paths to profitability. Moreover, a lack of deep understanding of the internet and its potential business models contributed to the bubble. Many investors and entrepreneurs understood the internet's potential for disruption but lacked a clear vision of how internet companies could turn a profit in the long term.

As the dot-com bubble grew, the market was filled with lots of internet startups, many of which weren't making any money. But investors kept their hopes high, believing that

investing in the internet was a surefire way to get rich. This led to venture capitalists and even new investors putting lots of money into these companies, even though the prices were way too high.

Well-known failures from that time, like Pets.com, Webvan, and Kozmo, became the face of this reckless spending. They got millions in investments even though their business plans were weak and they weren't likely to make any profit.

THE END OF .COM BUBBLE

NASDAQ Composite index
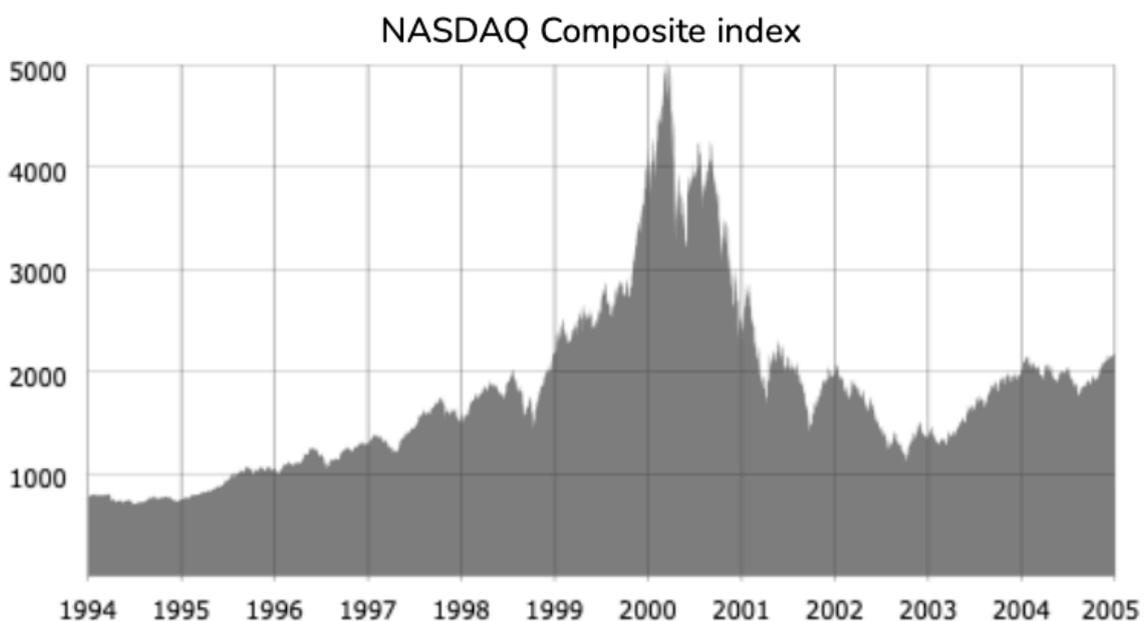
By the early 2000s, the bubble finally burst, leading to a dramatic collapse. Numerous internet firms declared bankruptcy, and the value of tech stocks dropped sharply. For example, the NASDAQ Composite Index, a benchmark heavily weighted by tech stocks, experienced a drop from over 5,000 in March 2000 to about 1,100 by October 2002, erasing nearly 80% of its value. The quick end of the dream of easy money from the internet left many people facing tough financial losses. Yet, it also taught some hard but valuable lessons about the reality of the internet business world. The landscape of investment in technology shifted dramatically because there was a crisis of trust. Investors became far more cautious and were all of a sudden not that willing to invest their money and their capital into the new companies. IT vendors needed to regain the trust of the investors and they came up with a new business model called Software as a Service. This model evolved naturally by leveraging foundational principles of Cloud Computing. Though the concept of Cloud Computing had been developing quietly in the background from the 1960s, it wasn't until the early 2000s that its potential began to be fully recognized. To understand its impact, let's define Cloud Computing and describe its key elements: It is a delivery of hosted computing services and IT resources like servers, storage, databases,

networking, software over the Internet with pay-per-use pricing. This definition encapsulates the essence of Cloud: flexibility, scalability, accessibility and represents a radical shift from traditional custom-made softwares that was utilized at that time. Let's take a look at key features of Cloud:

Cloud Computing

It is a delivery of hosted computing services and IT resources like servers, storage, databases, networking, software over the Internet with pay-per-use pricing.

→
- flexibility
- scalability
- accessibility

- **It is accessible anywhere with the Internet**

- **"Pay-for-what-you-use" Basis**

- **Easily scalable**

- **Manages maintenance and updates**

- **Offers configurability**

Traditional software requires installation, high upfront costs, and user-managed maintenance, while SaaS offers accessibility, scalability, and provider-managed updates through a subscription-based model.

- ***Accessible Anywhere with the Internet***

Firstly, Cloud computing is accessible anywhere from any device that can connect to the internet.

- ***"Pay-for-what-you-use" Basis***

Next, Cloud operates on a pay-for-what-you-use basis, which significantly reduces any upfront costs.

- ***Easily scalable***

It is also easily scalable which means that it allows for quick adjustment of resources based on demand, without the need for physical infrastructure investments.

- ***Manages Maintenance and Updates***

Next, cloud provider manages all maintenance, updates, and security.

- ***Offers Configurability***

And finally cloud computing offers configurability within the software's capabilities. This ensures that businesses can tailor services to their specific needs while still enjoying the benefits of continuous updates.

As cloud computing began to reshape the infrastructure of the digital world, it set the stage for SaaS to redefine how software is delivered and utilized. Prior to the emergence of SaaS, software delivery and usage were significantly different. Traditional software usually requires installation, high upfront costs, and user-managed maintenance, while SaaS offers accessibility, scalability, and provider-managed updates through a subscription-based model. In the upcoming lecture, we will explore the key characteristics of SaaS in more detail.

Building on the foundational understanding of cloud computing we can proceed to Software as a Service model itself. But before we explore it in detail, it's important to note that Cloud Computing encompasses three main service models: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). While our focus will be on SaaS, which is the most relevant to our discussion, PaaS provides a platform for developers to build, run, and manage applications without the complexity of maintaining the underlying infrastructure, and IaaS offers virtualized computing resources such as servers, storage, and networking, giving businesses more control over their infrastructure. These three models collectively form the foundation of Cloud Computing, each tailored to different needs and levels of control.

Cloud Computing

Software-as-a-Service Model	Platform-as-a-Service Model	Infrastructure-as-a-Service Model
	Platform for developers to build, run, and manage applications	Virtualized computing resources (servers, storage, networking) with more control
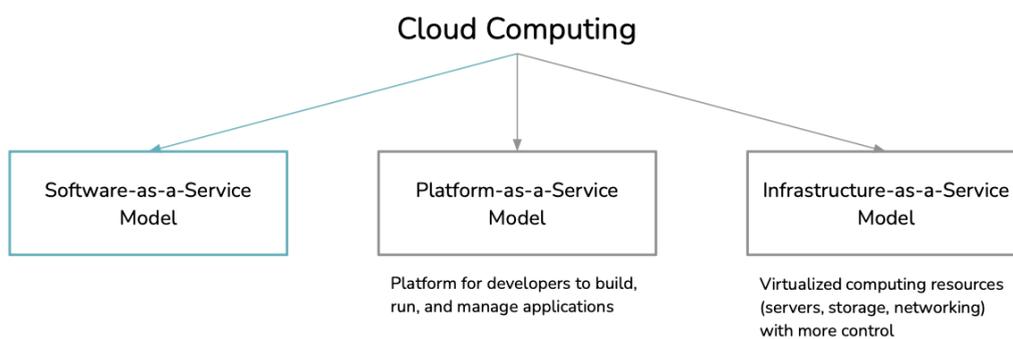
Now let's back to the Software-as-a-Service model.

Utilization of SaaS model and The first SaaS Product

As we have seen, the shift towards SaaS represented a major leap forward from traditional software models. But who was at the forefront of this bold move? Marc

Benioff. In 1999, he launched what is considered the very first SaaS company, Salesforce, right at a critical time, just before the dot com bubble reached its peak and ultimately burst.

Marc identified a unique opportunity within the Custom Relationship Management (CRM) industry. He recognized that companies were utilizing expensive custom-made software developed by existing IT vendors. These companies were individually investing thousands of dollars in this software, each of them paying let's say $1,000 upfront for individual licenses and periodic maintenance.

His vision was to create a single, efficient software platform that could serve multiple companies at once, without the need of upfront investments or on-site installation. With a more accessible pricing model, he was charging companies let's say $10 per month.

Salesforce found its place by targeting small to medium-sized businesses (SMBs), the segments often overlooked by traditional software vendors due to perceived lower spending power. However, the key features of Salesforce such ease of use, scalability, and subscription model quickly attracted a broader audience. This included larger enterprises that were searching for more agile and cost-effective software solutions.

His innovative approach made advanced CRM solutions affordable for a wider range of businesses and also laid the foundation for the modern SaaS business model.

Taking a look at how Salesforce has grown shows just how successful they've become. Within just three years from its inception, Salesforce achieved an impressive revenue of $22.4 million.

SaaS Origin Streams

The SaaS field was naturally created and gradually specified since then. But who has created these products in the past 25 years? Well we can observe two streams from which SaaS products have been coming: IT vendors and Startups. Firstly, let's talk about the corporate world of established IT vendors.

SaaS Origin Streams

| 1. Corporate world of established IT vendors | 2. Newly established Startups |

Corporate Culture
- Shifting from traditional software development to SaaS required a significant change in corporate culture.

Management
- Adopting the SaaS model often necessitates restructuring management processes.

Product Development
- Transitioning from custom-made software to SaaS involves a substantial shift in product development strategies.

A human institution operating under conditions of extreme uncertainty to produce cutting-edge technology.

- Eric Ries

- **Extreme Uncertainty**
- **Cutting-Edge Technology**

The main force behind the creation of new and innovative SaaS products.

1. Corporate world of established IT vendors

When Salesforce emerged as a small startup and quickly gained traction, the market was dominated by large IT vendors. These established companies had the resources and customer base to react to the emerging SaaS trend. However, transitioning to the SaaS model wasn't easy for them due to several factors:

- *Corporate Culture*

Firstly, shifting from traditional software development to SaaS required a significant change in corporate culture, which can be challenging for large, established organizations.

- *Management*

Next, adopting the SaaS model often necessitates restructuring management processes and teams, which can be a complex undertaking for large corporations.

- *Product Development*

And finally, transitioning from custom-made software to SaaS involves a substantial shift in product development strategies, which can be difficult for companies with long-standing practices.

Despite these challenges, some large corporations have successfully ventured into the SaaS market.

2. Newly established Startups

The other stream driving the SaaS industry forward is startup companies. Startup is a human institution operating under conditions of extreme uncertainty to produce cutting-edge technology. This definition highlights two crucial aspects: extreme uncertainty

and cutting-edge technology. Unlike large corporations, startups often operate with limited resources, namely money and time. This scarcity creates a unique culture within startup companies that encourages innovation and agility. Over the past 25 years, startups have been the main force behind the creation of new and innovative SaaS products.

As more businesses recognized the benefits of cloud computing, such as scalability, flexibility, and cost-effectiveness, the adoption of cloud services increased rapidly.

One of the key players in this growth has been Amazon Web Services (AWS). AWS has become the leading cloud provider, offering a wide range of services including computing power, storage, and databases. Other major cloud providers, such as Microsoft Azure and Google Cloud Platform, have also contributed significantly to the expansion of cloud usage. As the SaaS industry has matured, it has become an integral part of our daily lives. We use numerous SaaS products without even realizing it. Let's take a look at some examples:

Formerly known as G Suite, Google Workspace includes popular tools like Gmail, Google Calendar, Google Drive, Google Docs, or Google Sheets. Next is a video conferencing platform called Zoom that gained massive popularity during the COVID-19 pandemic, enabling remote work and virtual meetings. Or Dropbox that allows users to access their files from anywhere, on any device, making collaboration seamless. And finally, An AI-powered language model called CHatGPT that has taken the world by storm. It demonstrates the potential of AI-as-a-Service, where advanced AI capabilities are made accessible through a SaaS model.
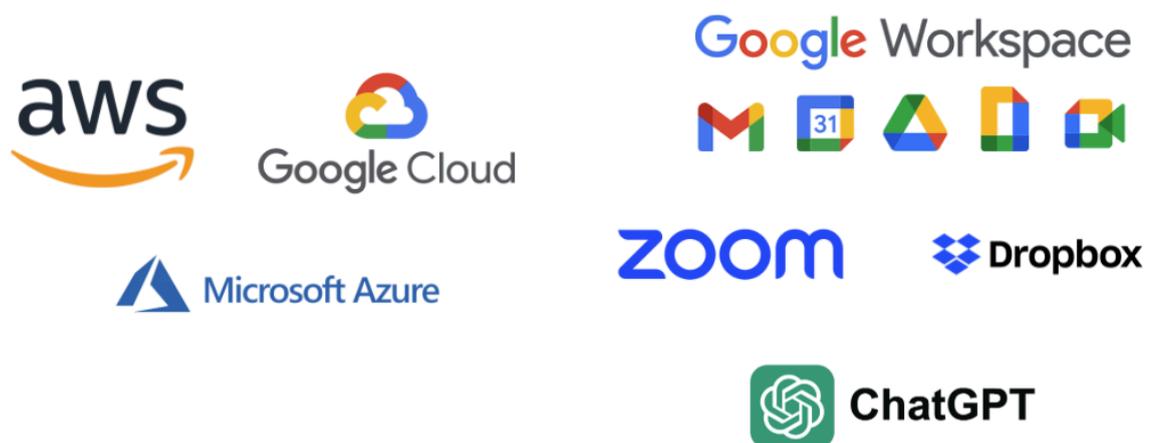
These are just a few examples of the countless SaaS products that have become essential tools in our personal and professional lives. From communication and collaboration to productivity and AI, SaaS has transformed the way we work and interact. In the following lecture, we will explore the characteristics of Software-as-a-Service in detail. Looking forward to seeing you there.