History And Evolution of SaaS.

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ABSTRACT - The use of cloud technology has evolved over time in a diverse range of areas, including IT, business, e-commerce, and many more. This paper offers you with a comprehensive overview of the origin, description, and evolution of cloud technologies, with a focus on the SaaS service model and how the presence of the internet has impacted its expansion and the use of SaaS in comparison to other web or application technologies. And I'd like to mention about a cloud application that we used in our project as backend source.

INTRODUCTION

1.1 INTRODUCTION TO CLOUD COMPUTING

Over the recent years, the IT industry has been migrating towards cloud computing software than On-premises software, as this could provide us access over online storage, infrastructure and applications. This can be very advantageous in terms of cost reduction since it allows you to perform dynamic elasticity, whereas on-premises software must always be maintained and configured locally, which can be very expensive, and time consuming in terms of maintenance and needed workforce. Furthermore, it enables remote access, which gives you the freedom to connect through your system regardless of geographical restrictions. As a result of its usage of virtualization technology, it offers essential characteristics for cloud computing environments, such as scalability and multi-tenancy within a single software program that may serve several users at once. These qualities are fundamental to cloud computing by enhancing the pooling and sharing of resources to improve many things such as enhanced business value, flexibility, agility, and reduced costs.

1.1.1. SERVICE MODELS

The cloud service approach comprises of mainly three different service models which are namely Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a service (SaaS) [3,4,6]. Other models are included in 'Anything as a Service" model (XaaS), for examples; Data as a service (DaaS), Database as a service (DbaaS).

- **Infrastructure as a Service (IaaS)**

The most basic level of service model is IaaS. It distributes resources like servers, virtual machines, and virtual storage as a service over the network. In this model, a third party provider manages all of the infrastructure's components (hardware, storage, software, etc.). Clients have no influence over the activities of the infrastructure's components. The third-party provider is in charge of managing operations including maintenance, backup, and recovery planning. Iaas is a very adaptable on-demand platform that may be modified depending on the type of workload. Users pay on a pay-per-use basis.

- **Platform as a service (PaaS)**

Platform as Service model is used to deliver applications over the internet. Cloud service providers offer hardware and software tools to its consumers as a service. Users cannot maintain cloud infrastructure, i.e., they do not need to install hardware or software locally; the cloud providers handle this task since they host hardware and software. Only the applications that the user has downloaded are accessible. This doesn't imply that the PaaS replaces all business infrastructure; rather, users simply require access to important services.

- **Software as a Service (SaaS)**

In cloud computing SaaS model distribute software as a service over the network. A third party hosts the application and distributes software amongst its various users. Users have no control over the storage, application capabilities, or cloud infrastructure. Applications don't need to be installed or operate on internal PCs when using a SaaS approach. It fixes the issues with maintenance, license renewal, and support. Users can simply subscribe to SaaS offers and pay for them on a pay-as-you-go basis rather than purchasing the software.

AGILE ACCESS OF CLOUD COMPUTING OVER WEBSYSTEMS

Although the cloud services has been advantageous to the various commerce and IT industries, the inteface to access or retrieve the data purely depends on the web-based or app-based technologies.
It is defined as a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction".

One of the most significant models is SaaS, which employs web or app software to access cloud storage or computing. The best feature of this model is that it offers the user agile accessibility of the interface. Even someone who is unfamiliar with the programs can easily use the cloud resources.

Moreover, the other considerable fact about the SaaS model is that the users need not to worry or consider about the hardware and software maintenance such as patches and updates. This provides the user to focus more on their desired task than maintenance. Many communication applications such as Gmail, Outlook
And Databases such as Salesforce.com, Workday, firebase, Snowflake warehouse
And many more successful applications were built upon the SaaS model.

Example for SaaS applications:

1) **Firebase Application:**

Firebase SaaS app is a NoSQL Realtime database which is allows users to store the data directly from websites or applications. One of the advantages of this application is that it provides each access to users, when compared to the Traditional databases such as Oracle DB. The Realtime Database API is designed to only allow operations that can be executed quickly. This enables you to build a great realtime experience that can serve millions of users without compromising on responsiveness.

2) **Snowflake Cloud warehouse:**
One of the recent trending warehouses for analytical purpose, either it can structured, semi-structed and unstructured data with SaaS application is snowflake. It attained a different architecture, as it decoupled the storage and computing to improve the performance to users when compared to traditional Datawarehouse such as SAP HANA.

3) **Salesforce CRM DB:**
Salesforce.com created its hosted solutions from the ground up, utilizing entirely web-based architectures and taking advantage of internal cost advantages from "multi-tenancy" and configurability. These architectural attributes enabled these solutions to provide long-term cost advantages over traditional on-premises software, as we will see below. essential components of a fruitful, profitable If one considers the costs of administering a

software product in the conventional way (that is, installed on the premises of the client), a significant portion of the costs are associated with managing various versions of the product and providing upgrades to numerous customers. Because of this, updates are frequently less frequent and larger, which causes instability in the final product and necessitates the release and management of interim patches.

CONCLUSION

This paper highlights about cloud computing definitions and various service models, its description. In detail about about SaaS service model and how web systems have been advantageous to the users, when uxsing a SaaS application with a few examples (one of them has been used as a database in our project).

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