

A Review of Advancing Sustainable Practices in International Business Through “AWS and Other Cloud Services”

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Abstract:

The world has evolved and every firm operates differently as a result of the widespread usage of new technology. The newest technology is called cloud computing, which is a pay-as-you-use on-demand delivery service via the internet. It offers a variety of services, including database tools, servers, network services, data storage, and application development tools. "Cloud" refers to an open environment where anyone can safely store and access their data. Compared to on-premise architecture; it offers a tonne of benefits. The reason cloud computing got its name is that the data it accesses is located remotely in a virtual environment called the cloud. [2] Cloud service providers give customers the ability to store files and apps on distant servers and then access all of the information online. This implies that the user can access it remotely because they are not confined to a physical location. Among the top providers of cloud services is AWS. This study compares the major global competitors of AWS and demonstrates how small and medium-sized businesses have profited from the development of AWS services and how cloud services are crucial to a company's capacity to survive in the global marketplace as these days, operating sustainably is a need rather than a choice.

Keywords: AWS services, Cloud computing, TBSB, Virtual environment, Mongo DB, Snowball & Snowmobile.

Introduction:

Cloud means: Although the phrase "cloud" can have a hazy definition, it basically refers to a global network of servers, each of which performs a different purpose. Instead of being a physical object, the cloud is a massive global network of isolated servers that are connected to one another and designed to function as a unified ecosystem. There are many different cloud features that bring advantages to sustainable development for a business, such as easy maintenance, positive economic impact, resource pooling, and large network access. In order to provide flexible resources, quicker innovation, and economies of scale, cloud computing refers to the supply of computing services—such as servers, data storage, databases, networking, software, analytics, and intelligence—over the internet. To put it another way, rather of buying data centers, businesses can hire access to third-party servers, storage, and databases and pay only for the resources they really use by renting from a Cloud Computing service provider.

There are numerous instances in the public sector of small and medium-sized firms (SMEs) utilizing cloud innovation to produce favorable results for their clients in the public sector. To encourage exclusive marketing, technical, and business support access, AWS offers Think Big for Small Businesses (TBSB) programmes. [1] Cloud services enable small firms with constrained resources and budgets to expand more quickly.

Various services are offered by the cloud, including:

- Auto emailing services.
- Streaming audio and video.
- Offers DBMS facilities and data storage space.

- Offers various software for on-demand use, etc.

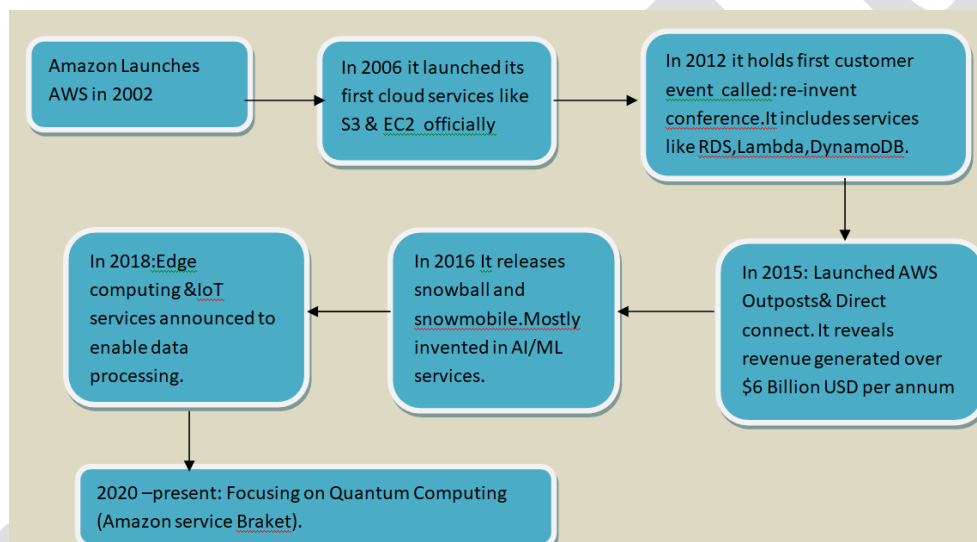
A brief history of Amazon AWS:

The premier cloud computing platform, Amazon Web Services, was first offered as an afterthought by amazon.com with the goal of enhancing its technology. The main systems were created during a three-year period starting in 2000, and this resulted in the creation of the large-scale company AWS. Because of the hyper-growth it underwent, it was necessary to address scalability concerns and create an internal system cure.

The demand for cloud computing arose from the necessity to manage hardware and physical infrastructure remotely in order to free up businesses to focus on their business cases, as well as the fast growing volume of data.

Chris Pinkham and Benjamin Black examined in a 2003 study how companies may use Amazon services to control data and infrastructure to their benefit. It was six pages long and included a thorough explanation of Amazon services.

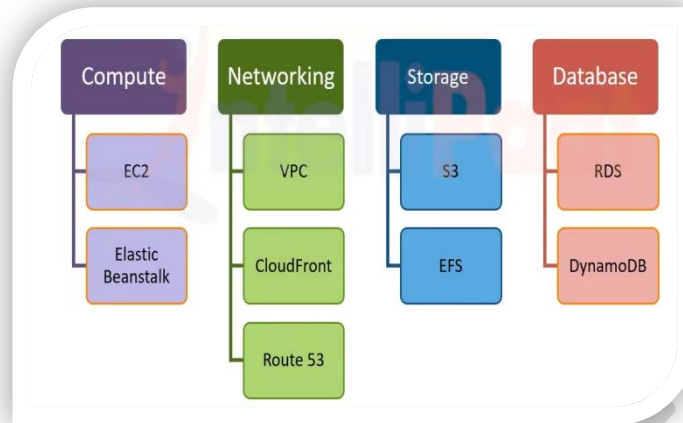
The following table provides a basic overview of how Amazon services have evolved:



AWS service Model:

Depending on what businesses require, AWS offers a variety of services. At the moment, AWS offers more than 200 services to businesses, including specialised computer resources and several deployment strategies. Amazon Web Services, or AWS, offers a variety of deployment methods that cater to a wide range of user-specific requirements and provides organizations with customized computing resources.

Following is the list of the top 4 cloud services of Amazon:



1. **Computer Service Domain:** This domain offers processing power similar to that of internet servers. Users may run apps, handle data, and execute code on these servers without having to worry about managing physical hardware because they come pre-installed with the necessary software. Elastic Beanstalk, Lambda, Lightsail and EC2 are some common compute services. These are models of Platform as a Service (PaaS)
2. **Networking Services:** AWS provides networking services that are On-demand, fast, scalable, and highly secure. VPC, Cloud Front, Route 53, ELB and many more network services are there that AWS offers. With the help of these networking services from AWS, users can create network infrastructures that are safe, dependable, and easy to integrate with both external resources and other AWS services. AWS maintains high availability of critical network load-balancing services.
3. **Storage Services:** SMEs, enterprises, and startup companies alike can benefit from highly secure storage services offered by Amazon Storage Service S3, which is highly available and scalable regardless of the volume of data involved. From highly parallelized, scale-out applications requiring the maximum throughput to single-threaded, latency-sensitive workloads, Amazon EFS (Elastic File System) is well suited to support a wide range of use cases. Amazon Glacier offers a cost-effective storage option for long-term data backup and preservation.
4. **Database Services:** There are different types of database services available, like Amazon Aurora, Amazon RDS, Amazon Dynamo DB, etc. Amazon provides different types of database services depending on the nature and volume of the data and cost constraints. AWS's database services give customers adaptable, scalable, and reasonably priced cloud storage, management, and analysis options. Users can gain high availability, durability, and performance for their workloads and mission-critical applications by utilising AWS database services.

Research Background:

A. Why do companies choose AWS instead of on-premise facilities?

Cloud computing has revolutionized the IT industry. Businesses now have a reliable and flexible option to replace the traditional on-premises operating strategy. Among the various players in the cloud computing space, AWS led the pack as of Q3 2022 with the biggest market share of 34%. Businesses like Adobe, Netflix, Facebook, Dropbox, and others are using AWS services to grow rapidly. Cloud computing technology helps companies save overall costs, boost revenue, and enhance efficiency.

The cloud provides a virtual environment for any application or database service without requiring any infrastructure or software installation. It also provides elastic load balancing and auto-scaling services that adapt to service demand.

B. Advantages of AWS over other Cloud service providers:

AWS is ranked among the top 4 cloud service providers globally. At the moment, more than 7,500 governmental organizations and 5,000 academic institutions use its cloud services.[5] Microsoft Azure and Google Cloud are currently AWS's two principal rivals.

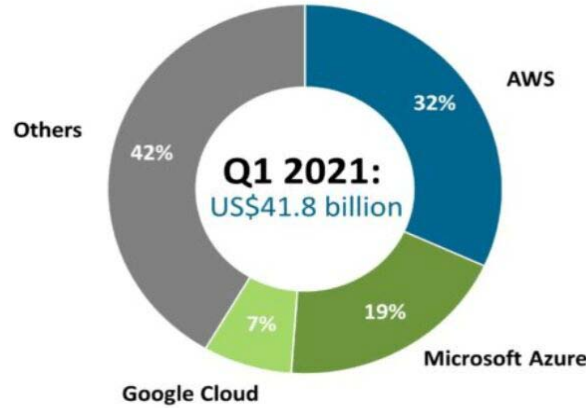


Fig: Pie chart (AWS & other cloud service providers)

➤ **Comparisons between AWS ,Azure and Google Cloud:**

Sr.No.	AWS	Azure	Google Cloud
1.	Introduced by Amazon	Introduced by Microsoft	Introduced by Google
2.	AWS has services like AWS S3, EBS, Beanstalk, Lambda, Glacier and many more.	Azure Storage Services offers Blob Storage, Disk Storage, and Standard Archive and many more.	Google provides Compute Engine, Google App Engine, Google Kubernetes Engine, Google Cloud Functions and more.
3.	In 2006, AWS made its public debut with service offerings.	In order to give organisations access to a reliable cloud computing platform, Microsoft Azure, formerly known as Azure, was introduced in 2010.	In less than ten years since its launch in 2011, Google Cloud Platform has established a strong reputation for itself in the cloud market.
4.	Amazon Web Service divides into 33 geographic regions and 105 availability Zones.	Azure is accessible in 140 countries and has more than 54 regions globally.	The Google Cloud Platform is made up of more than 200 edge sites, 103 zones, and 34 cloud regions.
5.	<i>AWS key tools: Artificial Intelligence and Machine learning: AWS has released Gluon. This open-source deep-learning library allows developers and non-developers to build neural networks without prior knowledge of AI.</i>	<i>Azure key tools: Cognitive Services: Bing Web Search API, Face API, Computer Vision API, and Custom Vision Service are among the cognitive services available.</i>	<i>Google Cloud Key Tools. From IoT to Serverless: Google Cloud offers APIs for advanced technologies like speech, natural language processing, translation, and others.</i>

C. Fact about AWS: The United States Navy on Monday [Dec 21st, 2022] awarded Amazon.com Inc's cloud computing division a five-year enterprise software license contract worth \$723.9 million. The deal will provide the Navy with access to Amazon Web Services (AWS) commercial cloud environment, Professional Services, and its training and certification.

D. A list of a few businesses that profited from utilizing Amazon Cloud Services:

Just as extensive as the cloud itself is the spectrum of applications available for AWS. Who said, companies who use AWS well typically see increases in speed and efficiency along with a decrease in the amount of time required for deployments. Here are some examples:

- 1. Unilever:** Unilever had a problem. He wanted a standard technology to grow his business. He chose AWS for data backup and recovery and increased report generation from various places which help to increase business demands and earn more revenue.
- 2. Kellogg's:** Kellogg's was facing problems of maintaining a high volume of data and computing problems. So, it adopted AWS services and now it is growing faster and offering promotions faster with the cloud, they have a powerful IT environment to run its business faster.
- 3. Netflix:** Netflix is an internet video streaming network that offers little latency and delay. Making it possible for users to watch videos on demand that suit their interests is Netflix's primary goal. Delivering ease of enjoyment for clients is their primary objective. In 2009, they moved to the AWS cloud in order to combine sustainable development with worldwide content distribution. They choose AWS because they wanted to focus more on updating, storing, and managing cloud instances.
- 4. Toyota in AWS:** Leading the global automobile industry, Toyota Motor Corporation (Toyota) is dedicated to provide the most responsible and safest means of transportation for people. In the corporation markets its products in over 170 countries in addition to manufacturing automobiles in 27 different locations. Toyota innovates throughout its company, utilizing Amazon Web Services (AWS) as a foundation. Examples of this innovation include tracking vehicle trips from manufacturing to dealerships and utilizing the Toyota Connected data lake to identify vehicle problems and enhance customer product quality.
- 5. Sales force:** In an effort to revolutionize data processing and analysis, Salesforce's Unified Intelligence Platform Team (UIP) oversees a petabyte-scale data lake. UIP Uses Amazon EC2 Spot Instances to Reduce Data Processing Times by More than 90% and Save Over \$1 Million Monthly. The UIP Team was able to create a scalable, elastic compute infrastructure with the help of Amazon Elastic Compute Cloud (Amazon EC2), which offers safe and resizable compute capacity for almost any workload.

E. How businesses can unleash creativity with the correct cloud solutions to improve sustainability: Businesses can transform more easily thanks to cloud services, but there are also major obstacles to overcome; many still find it difficult to demonstrate the value of transformation. Large server rooms and data centers are still a staple of many businesses, but these outdated configurations are not only expensive but also inefficient and harmful to the environment. In addition to providing scalable, effective computing resources, agile service delivery, and economy the cloud is a good substitute to achieve organizations goal. As these are on-demand services, the costs are kept to a minimum. Businesses may cut waste, use less energy, and help create a more sustainable world by utilizing the cloud's power.

Key benefits of choosing cloud as a service:

- F.** Encourage flexibility to keep the business moving forward in the face of changing customer needs or market conditions.
- G.** Disaster recovery and high availability.
- H.** Automation and Management.
- I.** Allows service providers to scale up or down with flexibility.

Key points to be remember while choosing a Cloud type:

- Always go with the hybrid multicloud plan that best suits the requirements of your business.
- Examine the service providers' ability to scale up or down with flexibility, and keep an eye out for any hidden fees.
- Will it be simple to integrate your present apps and software with the cloud infrastructure of the service provider?
- Examine the security infrastructure and protocols that the vendor has implemented.
- Review the policies regarding disaster recovery and data backup.
- **F. Difficulties and Things to Think About:**

Even while cloud computing has a lot to offer the environment, there are certain things to think about and hurdles to overcome. These include the necessity for careful migration planning, potential vendor lock-in, dependence on internet access, and privacy and data security issues. Companies that want to mitigate any possible hazards should carefully consider these elements and collaborate with reliable cloud service providers.

J. Conclusion:

The cloud is an open space where anyone can store data and retrieve data from anywhere; with any device remotely. Cloud helps businesses to grow smoothly without bothering about the installation of any type of hardware, software and any type of infrastructure, and security. AWS is one of the top cloud service providers today. It is currently providing more than 100 services to different types of businesses. Microsoft Azure and Google Cloud are the main competitors of AWS. After the evolution of Cloud services companies growing faster and gaining more and more revenue with low cost and with more security concerns. Amazon provides cloud services at the global level. EPS (Earn per Share) is \$12.37 vs. the \$7.29 analysts expected. Amazon's revenue exceeded analyst expectations. Throughout the world, hundreds of thousands of new jobs are being created by Amazon. In an effort to innovate and give its customers new experiences, Amazon is continuously introducing new services and cutting-edge technology. In light of this, we can predict that AWS will remain the most widely used service for a considerable amount of time. It is possible to argue that cloud services are created with best practices, procedures, and management in mind, with the goal of minimizing company risk and operating efficiently. Therefore, while moving from traditional to cloud services, there are a few considerations we constantly keep in mind, such as cost, security issues, technical capabilities, business health, support, etc. The cloud is designed with the principle of just using what you need in mind. This is a popular slogan in the construction of a sustainable future. With little waste, computing resources are made available as needed. The cloud's sustainability business case is straightforward: it lessens the footprint that comes with hardware, computation power, and electricity/cooling on-premises.

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