

Practical No. - 7

Aim: Case Study - Amazon Web Services/Microsoft Azure/Google cloud service..

Introduction To AWS, Azure and Google CloudAmazon Web Services (AWS)

[Amazon Web Series or AWS](#) as we abbreviate it is one of the leading Cloud Service providers in the market. It was initiated in 2002. Back then, it offered only a few sets of tools and services. It was in 2003 when Chris Pinkham and Benjamin Black presented a paper that helped automate and revolutionize the AWS platform.

They believed that the retail platform, Amazon, could serve a bigger and better purpose. This is when Amazon started looking at it from a larger business perspective, and we had services like Cloud Storage and

Computation that came into existence by the end of 2004. It was Christopher Brown and his team that made this possible and [Amazon services](#) was cherished across the globe.

The popularity of AWS is unfathomable, and we will understand what makes this 170+ Cloud Service Provider work well. Before that, let us go ahead and understand the Microsoft Azure Cloud Platform.

Microsoft Azure Microsoft Azure, as the name suggests, is Microsoft's Cloud platform that lets you test, build, deploy, and even manage applications that are placed in Microsoft Azure's data centers or Availability Zones. It has all three service model solutions just like AWS, which are infrastructure as a Service, Platform as a Service, and Software as a Service. It lets you integrate with different open source and Microsoft Stack of products/tools and programming languages.

It was announced in 2008 but was released on February 1, 2020, as Windows Azure and later on renamed to Microsoft Azure as we know it today.

Azure is similar to AWS and offers a variety of products and solutions for app developers. The Azure platform offers good processing and computing power. It is capable of deploying and managing virtual machines at scale. Azure can also run large-scale "parallel batch computing" – a unique feature that it shares with AWS over the Google Cloud Platform.

[Google Cloud Platform](#) (GCP)

Google Cloud Platform (GCP), also known as Google Cloud, announced in 2008 its first Public Cloud Service Google App Engine which became public in 2011. It was the first Platform as a Service introduced by Google Cloud. Post that, Google introduced various service cloud services in the public domain. These services reside on the same cloud space where popular Google Services reside like Google Search, YouTube, Gmail, etc.

Google is popularly known for its services in Machine Learning, [Data Analytics](#), Compute, Storage, etc.

I believe this is enough information about the Cloud Service providers we plan to compare. Let us go ahead and understand how these compare with each other.

Market Share

When we start with market share, what better way to see the numbers than to start by taking a look at the Gartner's Magic Quadrant for Cloud Infrastructure services.

This tells you that AWS is still leading the Cloud Market with a definitive edge. Yes, Azure and Google Cloud follow suit, but they do have some catching up to do.

Talking about the numbers, AWS had a clear head start in the market since it initiated quite early than others.

But it still holds on top position in the market and by quite a margin, as Q4 in 2019, these were their respective market shares were as follows-

- ❑ Amazon Web Services: 33% of the market share
- ❑ Microsoft Azure: 18%
- ❑ Google Cloud Platform: 8% of the market share

But numbers can be deceptive. It was also revealed that AWS grew by just 41% last year. Whereas Google Cloud and Azure grew by 80% and 75% respectively. This suggests that Azure and Google Cloud are catching up.

This was about the market share. Let us see how these Cloud Service Providers compare when it comes to their reach in terms of infrastructure.

Global Infrastructure

When we discuss the infrastructure that concerns these platforms, we have to consider two terms, those are, Regions and Availability Zones.

Regions

Here, regions mean a geographical location where a Cloud Data center resides.

Availability Zone

It is the data center that resides in a region. Regions may have more than one Data-center. Some regions, for certain services providers, have only one data center. Hence, we do not use the availability zone term in that case. That data center is called or known as region.

Here are some numbers to see how these platforms compare:

Amazon Web Services

- ❑ Regions: 24 Launched and 3 announced
- ❑ Availability Zones: 76
- ❑ Countries served: 245
- ❑ Regions: 60+
- ❑ Countries served: 140

Google Cloud Platform

- ❑ Regions: 22
- ❑ Availability Zone: 61
- ❑ Countries served: 35

It is clear that Amazon Web Services has a wider reach and provides services to more countries than the other two platforms. Let us now move ahead and see what kind of

customer base these platforms support.

Targeted Audience and Customers

AWS, Azure and Google Cloud all have high profile users and customers. Let us take a look at those.

Amazon Web Services

Amazon Web Services has the largest community support and customer base, and it has many profile customers in the market. To name a few, we have-

- ☐ McDonald's
- ☐ Netflix
- ☐ Unilever
- ☐ Samsung
- ☐ MI
- ☐ AirBnB
- ☐ BMW
- ☐ ESPN

Companies Like Netflix, LinkedIn spend \$10-19 million a month on their instances. That tells you how much trust people have in this platform and also how large and high profile the customer base is. It also has a very widespread small scale industry customer base.

Microsoft Azure is not far behind in this race. It also has a wide customer base and has gained a lot of popularity in most of the Top Fortune 500 companies. Around 70-80% of fortune 500 companies use Microsoft Azure. Some known brands that use this platform are:

- ☐ Ebay
- ☐ Apple
- ☐ Pixar
- ☐ HP
- ☐ Honeywell

Google Cloud Platform

Among the three, Google Cloud is the youngest and has a smaller customer base compared to others. But we should not forget Google Cloud is home to YouTube, and Gmail which are huge on their own. Here is a list of some other popular customers they have-

- HSBC
- Snapchat
- HTC
- Phillips

So this was about some of the customers these Cloud Service Providers have. Please note these are just some numbers and honorable mentions. If you visit the websites for these platforms you will find a large number of customer base and even many case studies that tell you how these service providers have solved problems for numerous businesses across the globe.

Now that we know what customers these platforms serve, let us see and compare the services provided by these platforms.

Miscellaneous Comparison

We have already compared these platforms on quite a few pointers, however, there are quite a few other pointers these platforms can be compared on.

Here is an overall miscellaneous comparison. Let us start with Amazon Web Services.

Amazon Web Services

What makes Amazon Web Services stand out? Firstly its head start, meaning it has had that extra valuable years to firm its dominance in the market. This can be proven with facts. Amazon Web Services has been the market leader in terms of Market share in IaaS services, it provides and Gartner supports that claim with numbers.

Another reason for this success is the number of services it provides, it almost provides double the services the second-best competitor provides in terms of the sheer number of

services it has to offer. It is a highly mature platform and is ready to serve different enterprise-level requirements. It also has deep and precise capabilities.

But everything has weaknesses. Amazon is costly when it comes to short term investments and many find it tricky to opt for this platform due to the uncertainty on its pricing models. But the wide array of services it provides makes up for the lapse in pricing concerns. Certainly Amazon's strong points or pros overshadow Amazon's weaknesses.

Now let us go ahead and see how Microsoft Azure fares when it comes to its strengths and weaknesses.

Microsoft Azure

Microsoft is a company that has overcome various hurdles in the IT and software industry it has ever come across. This ability has also transpired into Cloud offerings it provides.

Microsoft always had a stronghold and contributions to the On-Premise service market. It has ensured that services and offering it provided can be moved to the cloud and can be made Azure Cloud Compatible. Even though it had a late start, it is making up for it at a very good pace.

Another major reason why Microsoft Azure is so popular and is so widely used is because Microsoft Azure integrates with most of Microsoft stack of products with ease. Hence many companies and enterprises find it relevant to migrate to Microsoft Azure because then the deployment seems easy and effortless.

Microsoft Azure is claimed to be enterprise-ready. But one of the shortcomings that people or customers complain about is the shortcomings it comes with when it comes to supporting experience that face on an enterprise level. And customers complain it is little on the shorter side.

Let us see how this platform fares compared to others, and what are its pros and cons.

Google Cloud Platform

Let us start by taking a look at its strengths first.

It offers fairly strong offerings in containers, it has developed a standard for Kubernetes, and high computation capabilities in terms of Big Data Analytics, and even Machine Learning. it also offers decent enough load balancing and scalability.

If we are to compare it with Amazon web Services and Microsoft Azure, it lacks a little here with lesser market share, and lesser number of services.

By now, I assume we have discussed numerous pointers using which you can take a call on what platform will suit your needs best. All these providers have their strengths and weaknesses, and I am sure by now you can choose one for your requirements. Before we all sign out, here are some final points.

- ❑ **Market Share:** Amazon Web Services is a clear winner here
- ❑ **Global Infrastructure:** In terms of number Amazon Web Services stands out here too
- ❑ **Growth:** GCP is a clear winner here
- ❑ **Service Comparison:** Amazon web Services wins for numbers whereas Microsoft Azure wins for integration capabilities
- ❑ **Pricing:** Small investments GCP wins, longer run costs Amazon Web Services is a winner

So this is, by now you should have a clear picture as to how these Cloud providers fare against each other. This brings us to the end of this article on AWS vs Azure vs Google Cloud.

Conclusion

Cloud Computing services has triggered a revolution in the IT industry. It has become a go-to factor for application implementation and hosting for all companies, whether big or small. According to a Gartner

Survey Report, the market for public cloud is predicted to reach around \$411 billion in 2020. This is bound to generate a wide range of job opportunities in this field. So, if you are planning to start a career in this domain, you are on the right track. Getting a [cloud computing certification](#) in this field will definitely help in learning and developing your skills. Become a cloud computing expert and join the elite group of highly paid IT professionals in the world.