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Why are Organisations Choosing Azure Over AWS?

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The logo for IPEXPO, featuring the text "IPEXPO" in a bold, white, sans-serif font. The letters are set against a background of overlapping, semi-transparent orange and yellow geometric shapes that form a jagged, mountain-like silhouette at the top of the page.

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Foreword

Navisite is delighted to be part of IP EXPO Manchester 2019, showcasing our customised IT solutions tailored to meet our client's business requirements and future growth objectives.

Cloud is becoming an increasingly important part of any IT organisations delivery model. Assessing and choosing the right cloud provider and Managed Cloud Services Provider (MCSP), is arguably now one of the most important strategic decisions a business will make. In appointing a provider, many businesses are often in the dark about how to approach these decisions and lack the time and expertise to make an informed selection that meets their needs.

This is why Navisite is committed to providing quality, valuable content for its audiences – content that can help unpick the complexities of both the decision making and the deployment of clients' cloud services.

In this whitepaper, Umang Chhibber, Principal Solutions Architect at Navisite, dissects why organisations are choosing Microsoft Azure over Amazon Web Services (AWS), and looks into Azure's rapid growth in popularity. He also analyses AWS's strengths in security, compliance, flexibility and more.

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Setting the scene

When an organisation decides to use the public cloud for the first time, the decision often boils down to a choice between two major players: Azure and AWS. While there are other public cloud service providers like Google, Oracle, IBM, etc., they often cater to niche specifications and industries.

When Microsoft Azure debuted as a cloud provider, AWS was already an established service provider with a loyal customer base. Microsoft Azure initially focused on a Platform-as-a-Service (PaaS) approach to leverage the strength of Microsoft technologies used by many enterprises for software development.

Azure gradually gained market acceptance, and has reached parity with or exceeded AWS in terms of service offerings, and shown strong growth of its market share. This white paper will focus on the key features and services that make Microsoft Azure the public cloud service provider of choice for enterprise customers.

A brief history of Azure and AWS

At its inception in 2006, AWS was the first public cloud service provider and offered basic services for computing, storage and messaging. Amazon Elastic Compute Cloud (EC2), Simple Storage Service (S3), and its messaging queue service Simple Queue Service (SQS) were among AWS' first cloud offerings. The original idea and know-how for providing public infrastructure-as-a-service can be traced back to Amazon's need to provide infrastructure services for its in-house development teams.

Later, additional services were added to the portfolio like Amazon SimpleDB, Elastic Block Store (EBS), CloudFront, and MapReduce. AWS now offers over 90 services for

computing, storage, database management, content delivery, and management and security of enterprise applications.

These services are available in 18 geographical regions and one local region. In addition, Amazon has announced that its services will soon be available in four new regions. Windows Azure officially launched in 2010, and it was rebranded as Microsoft Azure four years later. Cloud Services (PaaS) and the Azure SQL service were the initial offerings.

Azure PaaS services accelerated cloud adoption among organizations that were previously using the .NET programming framework for their applications. This helped Azure quickly carve a niche market in PaaS. IaaS was added to the mix only in 2012 with availability of Windows and Linux virtual machines on the platform.



Microsoft revamped the deployment model of Azure from Azure Service Management (ASM) to the Azure Resource Management (ARM) model in 2014. This added more flexibility and granularity for creating and managing resources in Azure. Many new features were introduced such as Resource Groups, tagging, templates, policies, and Role Based Access Control (RBAC) – which made the Azure platform more enterprise-ready than ever.

Azure also lists more than 90 popular services and is available in 40 regions. With more than 10 additional regions in the pipeline, Azure has a larger footprint than any other cloud service provider.

Azure's key differentiators

Even though AWS had a head start, Azure was quick to catch up. Azure's revenue growth in recent years suggests it is making a substantial impact. Microsoft said recently that revenues from Azure nearly doubled during the last quarter of 2017 compared to the same period a year earlier.

Meanwhile, the market share of AWS slid to 62 percent in the fourth quarter of 2017 from 68 percent the previous year, as Azure clearly made more inroads into existing and new customer bases of public cloud services.



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Let's examine some of the key differentiators of Microsoft Azure when compared to AWS:

Strength as PaaS

Microsoft products, services, and frameworks have been used by organisations for decades and Azure provides a platform for easily migrating or extending these services to the cloud.

With Azure PaaS services, developers can continue using the same tools and frameworks that they are already familiar with to develop and deploy applications to the cloud. Along with built-in security and identity capabilities of its PaaS, there are several out-of-the-box applications in the Azure Marketplace that can be leveraged by organisations to reduce development time and shorten time to market for new application features.

Azure PaaS supports all leading development frameworks like .NET, Java, Ruby, Node.JS, PHP, and Python; it also supports DevOps tools like VSTS, Bitbucket, GitHub (recently acquired by Microsoft), etc.

Azure PaaS is positioned as a "leader" in the 2018 Gartner Magic Quadrant for Enterprise Integration PaaS, which assessed versatility in data, application, API, and process integration for hybrid cloud environments. It is worth noting that AWS was not included in this Magic Quadrant due to a lack of products and services with

enterprise integration features.

Flexibility

Depending on the use case, Azure offers a wide variety of services to choose from. For easily-scalable, cloud-native web and mobile applications, developers can consider PaaS offerings like App Service Environments (ASE), WebApps, Mobile Apps, Logic Apps, to name a handful of the options available.

Robust IaaS capabilities support lift and shift of applications to the cloud. They also support greenfield environment deployments with VM SKUs available for Compute, Memory, Storage, GPU and HPC-optimised workloads. Data platform capabilities include database services like Azure SQL Database, Azure Database for MySQL, Azure Database for PostgreSQL, Azure CosmosDB, and analytics products like HDInsight, Stream Analytics, Data Factory, Data Lake Store, etc.

Many customers report flexibility as the biggest highlight of Azure because of the strong hybrid cloud strategy compared to AWS. For example, organisations can choose to store sensitive data on-premises, while leveraging the scale of the Azure cloud for other application tiers. The integration capabilities built into Azure IaaS, PaaS and Data Services that leverage Microsoft tools and technologies make this process easier and more flexible.

.NET Compatibility

Microsoft Azure offers an easier migration path for .NET-based applications, either by using Azure Virtual Machines and Azure App Service, or by using Windows Containers in the cloud. Since Azure is built on Microsoft technologies, there is no major re-architecture effort required to adapt and deploy existing applications to the cloud.

For example, you can use tools like Image2Docker to adapt an existing ASP.NET application to Windows Containers in Azure with no application changes. When combined with Azure Service Fabric and Azure Container Service, this offers the high availability and flexibility required for production deployments.

With minimal code changes required for adopting microservices architecture, Azure App Services is another option for modernizing .NET Applications. For .NET developers using Windows-native tools, deploying to Azure PaaS is a lot simpler when compared to the additional overhead required by deploying to equivalent PaaS services in AWS.

Security and Compliance

Azure offers a wide range of services to ensure security, privacy, compliance and transparency. Products in this portfolio include Azure Security Centre, Azure Key Vault, Azure Active Directory for identity and access management, Operations Management Suite, Web Application Firewall (WAF), etc. Azure Security Centre helps to prevent, detect, and respond to security vulnerabilities for environments deployed in Azure.

It also has built-in advanced threat detection, behaviour analysis, crash analysis, and anomaly detection to provide enterprise-class security without using third-party products. On the other hand, the AWS-equivalent to Azure Inspector Service provides basic security services and requires third-party vendor products for advanced threat detection and protection capabilities.

Azure's disk encryption feature is linked to its Hardware Security Module (HSM) service, Key Vault for key management, and Azure Active Directory, which is mandatory for certain corporate compliance requirements.



Availability of Azure services in many regions helps to meet geographical data compliance requirements, like those included in the GDPR. Azure was the first cloud service provider to enter into a contractual commitment to meet the requirements of GDPR.

Azure has more compliance coverage compared to AWS, with 70 compliance offerings. FedRAMP authorisation figures as yet another example of Azure's edge over AWS in compliance. Azure has 38 services with FedRAMP high authorisation, while AWS has only 21 services in the same category.

Most Consistent Hybrid Cloud

Microsoft leverages more than 20 years of data centre management experience into delivering robust cloud services for enterprises. The unique edge of Azure over AWS is a hybrid strategy focusing on integrating on-premises and cloud resources to provide a seamless experience.

Azure Stack brings the Azure experience in the form of an integrated on-premises cloud solution for a customer data centre. It offers Azure IaaS, PaaS and database services from within your own data centre.



With Edge and disconnected architecture, it also offers the ability to integrate with the Azure public cloud if necessary. AWS does not have a competing private cloud solution for Azure Stack.

Customers can use Azure Site Recovery to migrate physical and virtual (VMware/Hyper-V) servers to Azure with minimal downtime. AWS has a VMware-based cloud offering, but it lacks support for environments with physical and Hyper-V VMs in the mix. Also, AWS does not have a cloudnative offering like Azure Site Recovery to aid the migration process of heterogeneous environments. VMware migration to AWS is supported by integration with vCenter, but the process is quite complex and supports migration of only four VMs concurrently.

Azure Backup, along with Azure Site Recovery, give organisations the ability to have a comprehensive BCDR strategy. They aid the BCDR strategy of organisations by providing the backup and data replications capabilities for systems and applications hosted in customer data centres, as well as public clouds, including physical/bare-metal and VM's, as well as public clouds with minimal configuration overhead. AWS, on the other hand, does not have a competing first-party hybrid backup solution.

The Azure Operations Management Suite offers monitoring, management and automation services for systems deployed on-premises as well as in the cloud. However, AWS' competing offering, called Amazon CloudWatch, is restricted to cloud-hosted resources.

More Data Centres

Azure has more regions than any other cloud service provider. Forty regions are currently available, and 10 new regions have been announced with a data centre footprint in 140 countries. Azure is the first foreign public cloud service provider in China, through its collaboration with 21Vianet to provide services in compliance with government regulations.

Similarly, Azure Government Cloud, which creates secure cloud computing environments for government agencies that have strict compliance requirements, has an edge over its competition because it offers more geographic redundancy than any other cloud service provider.

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A cost benefit analysis

Below is a summary of Azure's main cost advantages, and a comparison with AWS:

- Enterprise customers can leverage the Azure Hybrid Benefit package to reuse the on-premises Windows operating system and software licenses for large-scale deployments. Enterprises can save up to 40 percent of the cost of virtual machines by reusing their Windows volume licenses with software assurance. Only basic computing costs will be charged while using Azure Hybrid Benefit.

- When used with Azure Hybrid Benefit, Azure Reserved Instances generates as much as 82 percent savings for customers with an up-front commitment of either one year or three years. Large organisations with existing investments in Microsoft technologies and licenses can make use of this offer for better long-term cost savings than they would get with AWS.

- Azure Hybrid Benefit is also available while migrating workloads using Azure Site Recovery, which makes cloud migration virtually hassle-free and more cost-effective. Though AWS supports Microsoft License Mobility, it is not closely integrated with any migration products similar to services offered by ASR.

- Azure DevTest Labs provides a framework for the quick deployment of development and test environments in a cost-controlled manner by enabling quotas, restricted VM SKUs, scheduled startup/shutdown, etc. It allows organisations to set a budget for a dev/test environment and to track cloud spending against the budget. While the AWS Service Catalogue can be used to define a set of services that are available to specific users, it does not provide quotas, limits, and cost management capabilities like Azure DevTest Labs.

- Pay-as-you-go subscriptions are available at discounted Dev/Test pricing for Visual Studio subscribers to consume a few services at discounted rates for development and

testing. These services include VMs, App Service.

Cloud service, hindsight and logic apps

The Navisite Advantage in Azure Deployments: While adopting public cloud services or migrating workloads to cloud, it is important to plan carefully for the adoption/migration to avoid possible pitfalls and missteps.

Leveraging the services of an experienced managed cloud service provider (MCSP) like Navisite to take your organisation through this transformation will be hugely beneficial in the long run. Navisite has more than 20 years of experience deploying and managing cloud, on-premises, and colocation environments with 10,000 plus virtual machines under management.

Navisite can deliver tailored Azure solutions and is backed by the experience of more than 460 Microsoft Gold-certified experts, with more than 1,550 certificates. Our Elite 5-Star Managed Services team provides solutions based on each customer's unique need solutions are provided according to customer specifications, and environments are managed using an ITIL process management methodology, with 15-minute incident response times.

Navisite services are enterprise-ready and guaranteed with a 99.999% percent financially-backed uptime SLA.

Summary

Azure is quickly emerging as a leader among public cloud providers, providing services on par with and surpassing the portfolio of offerings from AWS. Azure adoption is on the rise and selecting the right MCSP for your cloud adoption journey can help boost the success rate. With its salient features and unique value proposition as an MCSP, Navisite is the right partner for organisations exploring Azure.

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