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**Cloud Computing – Sec 031**

**Exercise #1**

# Cloud Is the Way to Go.

**Abstract:**

According to Dell, companies that invests in big data, cloud, mobility and security enjoy 53% faster revenue growth than their competitors. With increase in security, reliability and feasibility public cloud market is expected to reach $178B in 2018 December and continue to grow at 22% compound annual growth rate. With this being said, largescale business as well as small scale business are venturing out and exploring cloud options not only for internal networking but infact they are now using cloud as a weapon to attract third party vendors and investors.

For this assignment, I interviewed two people from the industry. One from the software-based company called Profitect Inc. Profitect is a developer and provider of prescriptive analytics solution for the retail industry. Nikhil Swami the person I interviewed is working as Software Developer there. The next person I got a chance to talk is Tyler. M (name changed) from ABC company (Company name was requested to be kept confidential). This company is listed as number 3 in Forbes ranking of Tech companies. Tyler works as technical lead developer since last seven years. This way I got to know the cloud perspective, both from the largescale multi billion company as well as from a mid-level organization.

Interview 1: Nikhil Swami, Software Developer at Profitect Inc.

The organization as I mentioned before is cloud based perspective analytics company. It uses pattern recognition and machine learning algorithms to identify root cause anomalies within their data and displays descriptions of recommended procedures for fixing the identified issues.

When I asked him the primary deciding factor in transferring the entire data to cloud, Nikhil mentioned the need to scale the application and managing the increased traffic led them to explore the option of cloud computing. Avoiding bottle necks and improving deployment process along with decreasing the expenses of storage in the long run were some of the other important factors that led them think this alternate path of cloud infrastructure at their organization. This has helped them in management of data, making it more accessible. Making analytics pattern run on cloud have not only reduced total time but also accelerated their service delivery time. Apart from using cloud just as data storage, cloud helped them making memory management as well creating instances and using it as a platform as service. He claims the company saw an improvement in security after switching to cloud and it is easier to meet government compliance requirements.

The organization uses Google cloud platform as their cloud infrastructure from the initial implementation. When I asked the reason behind this, he mentioned Google cloud platform (GCP) offers lot of services like google compute engine and google app engine. They also provide

services like memstores and caching services. A mix of these services gives them the ability to be more reliable and increase availability of services and provides more secure platform. They use both IaaS as well as PaaS services offered by GCP. Nikhil also mentioned that it was a calculated decision which took a lot of evaluation of services available in the market. Since their software is based in Microsoft environment and it is a complete .net core application, Microsoft Azure was their obvious first choice. They compared with other services like Amazon and google cloud. Considering the organization needs and service model, there was a strong argument for each platform. The flexibility to work with software and the cost provided by GCP swayed them towards google. Google provides $300 worth credit that can be used across all services which provided them with a trial of services before committing to using GCP. This made them choose GCP over Microsoft Azure or Amazon Web Services. They are currently the biggest customer for GCP on the east coast and they admit that they have benefitted partnering with Google.

They maintain a hybrid cloud model. The resources are managed between private and public platform. Healthy mix of on demand reliability, high availability, Security and reduced operation costs were some of the major factors considered with hybrid cloud implementations. I asked him if there are any negatives or shortcomings of GCP, Nikhil agrees that there were shortcomings along with its excellent services. Since GCP is much newer and its regions and zone availability are still growing and at times have affected services but nothing major or stopped any progress. GCP being new has less than required documentation and sometimes they have two contradictory documentations for the same service. They had a bit of trouble dealing with dependency conflicts between different .net client libraries. Having to work around HTTP load balancer of GCP was challenging and sometimes annoying. Overall, the pros shadow the short comings. Migration to Google cloud was smooth and without any hiccups. GCP provides better security services and support and they provide scaling not just horizontally but also vertically. They were impressed with the support and having able to transition quickly from their old system to new GCP services. It provided them with better data analytics and artificial intelligence services.

On questioning the reaction of third-party vendors to their decision of moving to cloud, Nikhil mentions that it was not easy. There were surely some challenges explaining the software security patches and vulnerability to third-part vendors. Everyone had questions about proper techniques of security, accessibility and speed. They had to take this step carefully as they are the ones who are going to be in direct contact of cloud services. Cloud had to be included in their good books. With information given to everyone on how the system will be changed and having them test the servers before going to production, helped them regain their confidence and trust the cloud infrastructure. They came on top successfully and their vendors and customers are now surprised with the performance and security assurance both.

They now use cloud services in production environment as well as for internal services. Moving to cloud services helped them provide better services to customers and understanding their needs. Customers were overwhelmed by the improvement in performance, better data management and availability of services. They take advantage of service like tracing and logging which helped them understand the process and potential problems the customers might face beforehand. Analysis of these information gave them insight and area in which they need to improve on. Moreover, the

cost being the major factor, they had to think not only about the initial implementation fees but also, maintenance and service fees through out the years. GCP overall saved a 20 percent for the services which they had planned to use in comparison to Microsoft Azure and AWS. No up-front cost and no termination fees plus per second billing were some factors considered. On being asked if they are planning to expand the cloud technology further, Nikhil exclaims positively! Apart from google compute engine and google app engine they are planning to introduce other services like Kuberenetes engine which is useful for scaling to meet customer demands and requirements. They have already started discussing about it for integration. They also plan to make use of stack driver monitoring services and application up and down times with management of services. These cloud techniques have been the topic of interests in their discussion to expand. Nikhil ends the conversation saying, cloud has made their day to day life easier and manageable. Services like tracing and logging has helped them massively understand the potential pitfalls and slowness of system and areas to improve. Moving the entire process of deployment to cloud has helped them in testing different environments, safely test application and new features before pushing to production and having new services.

Interview 2: Tyler M, Technical Lead Developer at ABC.

As mentioned, ABC is multi billion company with their own cloud services. They use all the tree models of cloud services. They use IaaS for storage, virtual machine, VMSS. SaaS is used for Office 365 and Power BI. PaaS is used for Azure SQL, Service fabric, Azure service bus, Logic apps and Web apps. Tyler adds that the use a completely public model, and all their services are hosted in Microsoft Azure cloud. When I asked him about the technicalities on what model to use he said that there was lot of proto typing and identifying various technical challenges moving permanently to cloud. He gave deployment, performance and maintenance and service latency as important factors considered while switching. All these alone took almost four months to decide. Based on data points and costs they ended up taking about 6 months of time to move entirely to cloud. They chose Azure as a platform which offers wide variety offerings, integration with Linux/Windows and various programming stack which in-turn enables manage their IT easily.

Cloud has helped them in multiple unimaginable ways, informs Tyler. Security being the top most factor. With cost efficient platform, scalability, hybrid capability they never regret their decision of having cloud at the first place. They have also integrated with Development tools like Visual studio and Git Hub and other Microsoft tools like Office 365 and SharePoint etc. Tyler also adds that Azure is catching up with AWS in some offerings and some of its function has upper hand as compared to AWS or Google Cloud platform.

They use the cloud model for themselves and their business model enables consumers and commercial users to use their services. I asked him to choose between cloud and no cloud and Tyler quickly responded with “Its definitely easier with cloud”. As maintaining of servers, compute and scalability is managed by cloud offerings. It has reduced IT management and provided cost effective solution to a great extent. Well it has its cons too. They had data sync issues across all region. Tyler mentions that prior to migration their data used to be in SQL server.

They chose Azure SQL for easy adoption and portability. The services are used globally and hence the stored data had to be available across regions and need to be in sync. They faced data sync issues, as their SLA was less than two minutes for sync. If data is not synced across region then various services may be interrupted for transactions. Azure has released Geo replication feature couple of years back which helped drastically for manageability and sync issues.

Microsoft Azure's pay-as-you-go model allows you to pay for what you use to build or expand resources using Azure services. This cuts down the IT administration costs to a minimum as infrastructure is taken care by Microsoft on Azure. It connects to data centers and to the cloud effortlessly and supports 42 regions like other cloud provider.

They are in discuss to expand their cloud offerings in future. Some of them include DevOps, Machine Learning and Artificial Intelligence. With improved engineering productivity using continuous integration and deployment and disaster recovery, Tyler ends the conversation with "Cloud is the way to go".

**Conclusion:**

With 57% of enterprise already having central cloud team with another 24% planning over due to strong need for centralized governance within larger organization, I believe Cloud Technologies is only seeing an increasing straight graph. With added in security features and accessibility it is only increasing the need of cloud infrastructure at ever facility. Deciding over Microsoft Azure and Google cloud compute will be difficult as the requirements varies with organization. Be it a largescale company or even a startup, considering respective needs, each of them has their own methods of implications. Indeed, Cloud is the way to go.

References:

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