Taoufik El Adel
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Enterprises Migration Toward IaaS

Bottom line: *While I agree with Cynthia Harvey on the momentum Cloud is gaining over In-House data centers, I think she is underestimating how victorious cloud will come off in this prize fight, which in my opinion can easily end with a knockout and even sooner than expected.*

Introduction

Cloud computing services can be categorized into three models. Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). All three models offer various cloud services depending on the user's requirements. Whether a user needs to only have access to certain software, or to only develop and run applications, or want to have more control on processing runtime and data, all three models provide flexible and scalable solutions as alternatives to data centers as capital expenditures. To remain within the scope of this assignment, I will focus on IaaS model which is the alternative to In-house data centers.

IaaS

IaaS is a cloud model solution that offers infrastructural computing resources to businesses such as storage, servers, networking, virtualization, and Operation Systems. The main advantage of this model is its greatest flexibility that allows customers to scale up or down

cloud resources depending on their needs to accommodate fluctuating demands. According to Dave Bartoletti, VP and principal analyst at Forrester, 51% of global enterprises now rely on IaaS and PaaS public cloud platforms. He also added that data indicates the use of these platforms has been increasing by 10% per year for the last four years. Businesses and particularly start-ups can leverage public cloud services on an as-needed basis to have the same infrastructures of fortune 500 companies for pennies on the dollar.

In-House Data centers

Typically, data centers are ideal for organizations that need to have full control not only over their data but also over their computing environment. This allows businesses to have their own network thus increases availability with higher levels of performance and it also enables businesses to run mission-critical applications on premises. It is fair to say it's quite an investment, and it can vary in size and number of equipment from few servers in a closet to a mixture of mainframes and thousands of servers. Aside from the serious capital expenditure, data centers need constant maintenance, energy resources, specialized labor, updates, and equipment upgrades. With such fixed and variable costs, only large and wealthy businesses that can actually afford to have their own data centers.

In my opinion, the issues with such infrastructures are the opportunity lost and the sunk cost. In other words, if the business needed more computing resources to accommodate higher market demands (sometimes in timely manners) but is already at full capacity (space and equipment wise) then the business suffers loss of opportunity. On the other hand, if computing

resources are just sitting, powered on with minimal use or none at all, then the business suffers not only sunk costs on that equipment but also from energy ineffectiveness.

Workloads migrating toward IaaS

According to the article, and despite the convenience and flexibility of cloud, I agree with the experts that it is a good idea for certain organizations to keep certain applications on premises. For instance, factory control systems, an ER or a surgical department in a hospital may need to have at least some In-House servers to have physical control over their backup, and to also guarantee a continuous workflow even if the network goes down.

It seems that most organizations are finding a happy medium by running a mixture of public IaaS and on-prem workloads. Bartoletti claims that "About 80% of Forrester clients already say that their long-term strategy is to be hybrid". This way, organizations can keep their most critical data on premises while they can still leverage public cloud services to gain some agility.

What is actually driving enterprises to trust moving their data and applications toward cloud is the giant leaps in cybersecurity made by cloud providers. Lydia Leong, VP and distinguished analyst at Gartner has said “One of the most interesting reversals of the last couple of years is that it used to be people didn't go to the cloud because of security. Now people do go to the cloud because of security.” Even organization that deal with sensitive data like government agencies and banks are migrating toward IaaS services like Amazon Web Service (AWS) and Google Cloud Platform (GCP). On January 2016, Netflix has moved its last

infrastructure toward AWS and now completely runs on cloud, while Spotify has migrated everything from on-premises toward GCP.

Conclusion

There is no doubt how valuable cloud can be to businesses. Now that security has gone from being a major concern to actually an incentive and a reason more for businesses to migrate toward IaaS, and factoring the rise of 5G and IIoT, I am certain that it will only be a matter of time before we see data centers existing only as a primary activity in the value chain of cloud providers instead of it being a supporting activity for businesses.

Article References:

- "Enterprises Cautiously Migrate Toward IaaS." InformationWeek, 28 Dec. 2017, www.informationweek.com/cloud/infrastructure-as-a-service/enterprises-cautiously-migrate-toward-iaas/d/d-id/1330703.