5 TECH TRENDS SHAPING PUBLIC CLOUD INFRASTRUCTURE CONSUMPTION

SADA systems

No matter how you slice it, public cloud services are growing across all the major providers and service areas. Recent cloud statistics and predictions report that worldwide spending on public cloud services will grow from $70 billion in 2015 to more than $141 billion in 2019. Those numbers are positive, indicating that earlier concerns around reliability and security are leveling out.

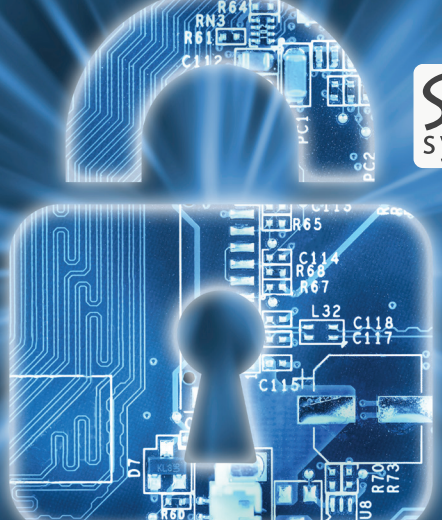
When the public cloud became a bona fide trend about 10 years ago, executives were encouraged at the prospect that Amazon, Microsoft, Google and others could save their company bundles of money on licensing, support, management and hardware. IT people were wondering if it would kill their jobs, though the forward-looking ones thought that the cloud might enable IT-based innovation like never before. What has been interesting to see are the business innovations which would have been cost heavy with an on-premises infrastructure. Companies like Snapchat and other content-rich businesses that scaled quickly couldn't have grown so quickly without the cloud.

However, like any trend, reality has been a bit different than the hype. Cost savings are diminished if proper planning doesn't occur. IT people have lost their jobs when they haven't been able to adapt appropriately to new technologies and ways of work. IT directors and cloud architects are working through those challenges but, as cloud providers grow their services to align with enterprise needs, perspectives on cloud computing are also expanding. Instead of a simplistic goal of saving money and time, IT and business executives are now moving to the cloud to get ahead in their markets.

These five trends will drive public cloud consumption in the foreseeable future.

1

Better security in the cloud.



Any IT initiative today should build security into the core requirements and features.

For years, IT executives in all industries have resisted moving operational data and applications to the cloud due to security concerns. Even though there was little proof that the cloud was actually less secure, CIOs, CFOs and CEOs didn't want to risk housing sensitive corporate and customer data in third-party data centers. This argument was weakened when major security breaches involving global brands demonstrated the ease with which hackers could steal data behind the corporate firewall. Meanwhile, in recent years, Microsoft, Google and Amazon have all invested heavily in their respective cloud platforms' security features and tools. No one can compete in the cloud IaaS game without having airtight, multilayer physical and electronic security. Security-as-a-service offerings also continue to grow in sophistication and affordable pricing. A Technology Business Research (TBR) report from 2015 found that 49% of the market believes public cloud is just as or more secure than private cloud. As IT and business executives gain awareness about the true risks of public cloud security, we will see a stronger push to host production systems and databases storing financial and customer data on proven platforms such as Azure, GCP and AWS.

2

Machine learning and big data.

Machine learning and big data are tightly intertwined.

Machine learning capitalizes on the availability of big data to enable self-learning software programs which initiate an action or deliver advice based on new data paired with what has been previously learned. Use cases include online customer recommendations, hiring/recruiting, engine maintenance, professional sports strategy, security analysis, IT performance management and other scenarios where predictive analytics can deliver important real-time insights. Leading technology companies that provide platforms for machine learning include Google with its Cloud Vision API and TensorFlow library, Azure Machine Learning, Amazon Machine Learning and of course, IBM Watson. These systems have unknown potential, as companies can train them to do virtually any type of analysis. The trick is, you need an IT infrastructure that can handle large-scale complex analyses and which isn't limited by data volume. Machine learning is optimized in the cloud, given the rapid scalability of resources. In many cases, machine learning and big data are not even possible without the flexible, shared, distributed nature of the public cloud.

Consider the case of a music group producer, which needs to reconcile data on user downloads from online music stores with royalty fees received, consisting of billions of rows of data, growing at an impressive rate. That reconciliation process is important to ensure revenue streams and to understand which online services are most profitable. Yet using internal infrastructure and systems, it can take a few weeks to complete those analyses. In the cloud, you can do the same process more efficiently and cost-effectively and on a daily basis. That way, the producer always has a pulse on downloads and royalties and can make snap adjustments as needed to maximize profits. With the growth in data management needs across all industries, cloud providers are seeing potential to monetize their own cloud-based databases, such as Google BigQuery and AWS Redshift. These products can crunch petabyte size data sets in a few minutes and typically at 60 to 80% lower costs than using a traditional enterprise data warehouse system.

3

Containerization.

Docker made containers cool in 2014; today, IT and Engineering leads are finding that containers are nearly indispensable.

Just as virtualization disrupted the computer hardware industry, now, containers are disrupting the virtualization industry. By example, whenever you do a search on Google and results start pouring in before you even finish typing, that is the work of a container, which reads your keystrokes and produces those results in real time. Containers are a more efficient form of virtualization, because they allow developers to break an application down into bite-size elements which include everything needed for running code including operating systems, libraries and networking policies. That makes containers highly portable, quickly deployable, and nearly immune to the disruptions of OS and network updates that plague software running on a VM. Containers go hand-in-hand with the distributed, software-defined nature of the cloud. As containers grow, so will the purchase of cloud resources to run them efficiently and at scale.

4

Mobile.

Mobile digital media time in the U.S. is now significantly higher at 51% compared to desktop (42%), according to Kleiner Perkins Caufield & Byers trends compiled by Mary Meeker.

Mobile app usage grew by 58% in 2015, over 2014, according to research from Flurry Analytics. Mobile apps and mobile business models are helping companies drive new revenue streams and reach new markets with epic speed. The cloud is critical to enabling that massive scale and agility to power mobile apps and services. New ideas come from employees all the time as to how they can mobilize everyday tasks – such as ordering supplies, submitting expenses and managing projects – from a simple app. Launching a new tool on internal infrastructure could take months. Using the cloud means that teams can focus on the functionality – whether it's third-party or in-house developed-- and get it up and running much faster.

5

Internet of things. (IoT)

The infrastructure for hyper-connected devices and apps is beginning to have a significant effect on people at home and abroad.

The infrastructure for hyper-connected devices and apps is beginning to have a significant effect on people at home and abroad. AWS, Azure and Google Cloud Platform all have developed rich IoT solutions for developers, and the scenarios change by the day. Citizens in Nigeria have only a few hours of electrical power daily, which has negative consequences for healthcare and education in the region. Schneider Electric is helping through a project that has deployed solar panels to replace diesel generators and deliver clean energy to remote schools and clinics. By integrating Schneider Conext systems to the Microsoft Azure IoT Suite, technicians anywhere in the world can monitor performance or alert a local technician that service is needed. Now, doctors can operate at night and students can study at home. Kaiser is another example. The healthcare provider is using Azure IoT Suite to monitor patients' vital signs remotely, receiving alerts when relevant changes occur.

Internet of Things is still nascent but without the power of the enormous public cloud infrastructure, it's dead on arrival. IoT success depends on the ability to produce and deliver real-time insights to companies and/or their customers. Large multinational companies are creating IoT platforms internally so business units can build technologies to support innovation. Companies with large geographic footprints (think of a laundromat chain wanting to collect maintenance data from washers and dryers across multiple states) or which have thousands of sensors within a large campus have considerable scale and processing needs. Those requirements for local storage and processing are prohibitively expensive to support internally. By leveraging the cloud, infrastructure resources becomes less of a problem and more of an opportunity to improve processes or customer experiences.

The public cloud is maturing all the time, and the use cases for business transformation will drive growth in the coming years. Yet as companies use the cloud for more strategic and complex projects, it will be critical for IT managers to gain in-depth, hands-on knowledge of how the different cloud platforms and technologies work and how they can be optimized for distinct business needs.

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