Google vs. AWS in the Public Cloud

By: Danielle Royston

Across industries, CTOs recognize the scalability and cost-efficiency of the public cloud. In fact, two out of five enterprise workloads are expected to be on the public cloud by next year, leveraging platforms such as Microsoft Azure, Amazon Web Services (AWS) and Google Cloud Platform (GCP). But so far, telecoms have been late to the party. This is about to change, however, with Ovum predicting that telecom operators' use of the public cloud is set to double during 2019.

As noted in a recent Ovum report "Understanding the Business Value of Re-architecting Core Applications on the Public Cloud" by analyst Roy Illsley, "Ovum believes that for telecom companies to be able to compete in the digital world, the adoption of public cloud is inevitable. For example, CSPs should evaluate and implement a new OSS/BSS stack on the public cloud for new segments such as enterprise IoT over 5G."

Often, we read articles about operators struggling financially, and they don't know what to do next. With up-and-coming challenger brands nipping at their heels, the biggest idea for cost savings is staring them right in the face: move their workloads to the public cloud, and soon. Operators who do can realize up to 80 percent savings on their total cost of ownership—freeing up resources and profit to add to the bottom line.

But the question remains: Which public cloud is right for telcos? To date, Amazon's offering has consistently dominated the public cloud market for enterprise workloads. But don't automatically assume that AWS is the right choice for telco CTOs to make. There's a strong argument to be made for the capabilities of Google Cloud's platform over those of AWS and others, especially when it comes to improving efficiencies, adopting new approaches to delivering services and unlocking new revenue streams for the telecom sector.

A Database 10x Faster and Cheaper than Oracle

Used and battle-tested by several of Google's own services, Cloud Spanner, a clustered relational database management system (RDBMS), was made publicly available to GCP users just over two years ago. Its distributed, scalable transactional architecture means that it can scale reads and writes across unlimited nodes without losing any transactional consistency.

Through the use of the Cloud Spanner optimized stack and Google's super-fast, high-performance network in conjunction with the TrueTime API distributed clock, the system enables telcos to increase speeds by a factor of ten. This is a critical point for network service providers.

Charging is a write-intensive application. With a high degree of read and write demands on telcos' databases, the constant, heavy volume of transactions can result in outdated cached data. Should that subscriber transaction data turn out to be incorrect, the operator may suffer significant financial impact. As Cloud Spanner is an enterprise-grade database, its unique ability to automatically scale and synchronize reads and writes across unlimited nodes with low latency enables ten times the speed and scale at one-tenth the cost of Oracle.

Google's Private Network

Secondly, consider the network infrastructure that underpins GCP. Unlike AWS, which relies on public internet to handle a majority of network traffic, GCP utilizes Google's own internal backbone network.

Consisting of thousands of miles of fiber connecting their legion of data centers across the globe, Google's own network enables it to respond to queries within milliseconds, thanks to multiple points of presence and interconnect locations between the telco database and the network edge. Ultra-low latency and—more importantly—deterministic latency are at the top of the agenda of telecom CTOs.

The speed of Google Cloud's network also has an impact on cost efficiency by enabling more data to be processed in less time. A good measure of performance is Input/Output (I/O) Operations Per Second (IOPS)—the more IO operations performed per second, the better. So, GCP's speed means you get more IOPS for your money than you would with AWS.

This is also particularly the case, considering Google offers billing on a per-second basis compared to Amazon's per-hour model.

Security First

Another important factor is security. According to Gartner, through 2020, [public cloud workloads will suffer at least 60 percent fewer security incidents](#) than those in traditional data centers. So, in fact, moving your data to the public cloud can offer more security than your own data center.

GCP benefits from the same proprietary security measures that Google employs across all its products, including an investment of more than $3 billion in security for their cloud platform annually. The investment provides telco CTOs assurance that their valuable data is protected.

The data stored in the cloud platform itself, as well as that in transit between Google, its customers and its data centers, is encrypted under 256-bit AES. To further strengthen security, Google's Cloud Identity and Access Management (Cloud IAM) system provides predefined roles to allow granular access to certain specific GCP resources while preventing unwanted access to others. This is similar to Amazon's provisions.

Google has gone even further, however, with the development of its own custom microcontroller. Called Titan, it is designed specifically to meet Google's hardware security requirements and use case scenarios. This secure, low-power chip establishes a hardware root of trust for cryptographic operations in GCP data centers to ensure that a machine boots from a known good state using verifiable code.

In fact, it was this focus on security that saw GCP placed as a leader alongside AWS recently in [Forrester's Public Cloud Platform Native Security Wave](#). In Google's own words, "put security first, everything else will follow."

So, which public cloud features demonstrate superior security? Look for vendors that commit to:

- Layered defense with strong perimeters and surveillance on cloud data centers
- Highly controlled access, preventing any unauthorized partner, vendor, or employee from entering with defense depth controls at every layer
- Encryption at rest by default
- Transparency through frequent third-party certifications and audits

Solid Technology Foundation

Recent [research](#) by analyst firm Gartner shows that GCP now outranks both AWS and Microsoft Azure in terms of technical capabilities, which has led to increased adoption

by large enterprises worldwide. In addition to security, GCP's focus on technological details delivers a solution that offers superior customer experience and low latency. Plus, as a pioneer in machine learning and AI, Google has built a platform that enables access to industry-leading predictive analytics.

Moreover, GCP's open-source Kubernetes system is the most popular solution for managing containerized workloads, providing automated container orchestration and efficient machine management. Integrated with GCP, Google Kubernetes Engine (GKE) allows organizations to easily and successfully implement a container strategy for their cloud workloads.

Tailor-made for the Cloud

And, of course, there's Android, the operating system that runs more than 75 percent of the world's mobile devices. As Google's native OS, GCP is fully integrated from the start, a plus for all mobile operators.

Ongoing advances in technology have presented operators with a series of new opportunities, along with the inevitable accompanying challenges. As demand for data continues to grow, new network capacity is required. And as traffic patterns become increasingly unpredictable, new solutions are needed.

AWS is fine for generic enterprise workloads, but as the telecom world wakes up to the need for public cloud, telco CTOs are encouraged by Google—its proven track record, experience, and knowledge supports every aspect of its public cloud offering. And with such size, speed, security, and power behind it, GCP's reputation for disruption should not be underestimated.