6 key benefits of cloud computing

Even for highly regulated industries and governmental organizations, public cloud advantages are not only clear, they are growing.

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POSTED ON 01.12.23

"In the cloud." This phrase has become ubiquitous over the past decade. From governments to enterprises to everyday consumers, everyone has something in the cloud. But what does it actually mean to run services in the public cloud? And what are the benefits of cloud computing? Even for highly regulated industries and governmental organizations, public cloud advantages are not only clear, they are growing.

Cloud computing services can be **public, private or hybrid**[1], but the most popular deployment model is undoubtedly the public cloud. The public cloud is a network of distributed data centers, accessible online and hosted by a third party cloud service provider. On these networks, cloud service providers host, develop, run and manage services and network infrastructure. Leading public cloud providers such as Amazon Web Services (AWS) or Microsoft Azure (Azure) have been in the cloud game since Day One—meaning they have amassed the most expertise and have, by far, the largest networks. Because of their size, they can leverage economies of scale and provide their clients big and small with **premium security tools, talent, and techniques**.

Although organizations do not privately own and manage the cloud environment, the public cloud gives way to six major benefits:

1/ High cloud availability and cloud resilience, less downtime

Making data, tools and services accessible anytime and anywhere with **limited downtime** is called cloud availability. Major public cloud service providers build networks of data centers at hundreds or thousands times the scale that any one company could build. Given their scale, they can grant astounding cloud availability between 99.9% and 99.999%—that translates into 5 minutes and 15 seconds of downtime per year.

The scale of these massive public clouds also affords **resilience and disaster recovery** in the event of a server failure—caused by a natural disaster or human error. The service automatically finds the server's alternate availability zones, maintaining availability and ensuring business continuity.

2/ Efficiency in public cloud computing

The traditional model of on-premises systems requires extensive expertise in managing data centers and infrastructure,

hardware provisioning, and on-premises systems support for set up and operations—yielding a hefty upfront investment. On top of that, **traditional data centers require full infrastructure upgrade projects every five years or so** — triggering the high-cost of materials and significant and costly periods of downtime. While public cloud providers also need to frequently upgrade infrastructure, with their massive scale and expertise, these upgrades go unnoticed.

One of the key pain points of traditional setups occurs when underlying technology becomes obsolete. Cloud computing eliminates the need to procure new hardware, wait for shipping and installation; instead, service providers can ramp up cloud infrastructure in mere minutes and assure clients that they will **always be running on the latest technology**. This level of support drastically speeds up the pace of innovation.

3/ Faster time-to-market in the public cloud environment

The ability to provision cloud infrastructure in minutes means a service provider can rapidly build solutions suited to their clients' needs and **create tests and proof of concepts** that will allow clients to use or **launch their service faster**. Let's say a government plans to roll out a new identity document system for all its citizens. Cloud computing makes it possible to install the production environment much faster. It is ideal for this type of massive "one-off" project, as the system can be launched immediately and all the extra resources needed to manage the migration from the previous system to the new one can be downscaled significantly once the new system is up and running. It also gives companies and governments **a new way to test prototypes with their service providers** without committing to all the necessary resources.

4/ Pay for what you use with cloud computing services

The bottom line matters, especially when taking on something as big as transitioning to cloud computing. Moving to the public cloud environment gives organizations the opportunity for **a cost paradigm shift** by paying for and operationalizing only what they use. In the traditional on-premises system, service providers and their clients identify network, server and equipment requirements based on projected needs. In this scenario, an organization must invest in the hardware itself but also the physical space required to house a data center. Because of the physical limits of a space, **organizations often pay for more than they actually need** or necessitate an upgrade once they reach capacity. In the cloud environment, they can start off small —without massive upfront investment—and get a faster ROI, then **upgrade and downgrade easily according to evolving needs**. Again, given the massive scale of major public cloud service providers, an organization could increase cloud capacity tenfold with the push of a button something that few companies, if any, are able to do on their own.

5/ Scalability and elasticity of public cloud services

The concept of elasticity in cloud computing is pretty straightforward organizations can easily scale up or down cloud computing services based on their needs. The ability to scale is practically limitless, which allows to **withstand any unpredictable peak in traffic**. Contrary to a typical on-prem data center, which cannot extend past its four surrounding walls, cloud service providers have data centers all around the world, allowing private companies such as major mobile operators, leading car makers or FinTechs for instance to **replicate their activity on the other side of the planet** with minimal effort. Cloud computing can also detect peaks in activity and automatically scale up, add a server and additional resources and then scale back down when necessary.

This elasticity in cloud computing is extremely important as it allows private companies and governmental organizations to maintain their operations during peak periods and it also **guarantees that a system won't oversaturate** and affect service quality.

6/ Public cloud security and compliance

Cloud security and compliance is a fundamental, business critical aspect for major public cloud service providers, who host the lion's share of highly regulated, modern critical services. On top of obvious consequences for their customers, a

security breach would tarnish their reputation and cost them business. For this reason, **cloud service providers invest billions of dollars every year in security**. This investment paired with their massive scale and extensive expertise gives way to best-in-class security features. And these features are literally battle-tested. In short, the only way to know if security is truly adequate is to come out the other side of a real or white hat attack. Since major public cloud service providers are on the front line of these attacks and tested on a constant, ongoing basis, **they are experienced and have learned to react quickly and efficiently** to keep their clients' businesses up and running.

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[1] https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-are-private-public-hybrid-clouds/#overview

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