



BASIC BENEFITS OF CLOUD

To get started, let us look at what is cloud.

What is cloud computing?

Cloud computing is seen as a new way of delivering computing resources. Cloud computing has been described as a business model for the use a of underlying IT technologies.

Therefore cloud computing is not new technology but relies on the latest technologies to be delivered efficiently, effectively and with better economies of scale. If you look hard enough, you will find that the basic principles of cloud computing date back to the mainframe era of circa the 1950s and 1960s.

The following is a working definition of cloud computing as defined by the [National Institute of Standards and Technology \(NIST\)](#).

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.



According to the NIST definition, the cloud computing model is composed of five essential characteristics, four deployment models and three service models. In addition, cloud-based services refers to situations where cloud computing is used to provide some element of an overall service.

Why is cloud computing important?

Cloud computing is a disruptive innovation in business and IT models. It is disruptive because it is changing how IT products and services are being provided for both the consumer and the service provider.

Cloud computing is moving organizations away from the traditional software licensing models and premises-based data centre hosting to 'pay-as-you-go' or utility-based pricing. Over time, as the adoption of cloud computing increases, organizations will see a reduction in the IT infrastructure which they would have previously bought, operated and maintained.

Cloud computing is a new business and IT operating model for delivering real-time or near-real-time information and access to services. It is because of this disruptive nature that modern cloud computing is extremely important. New opportunities can be identified and exploited at the benefit of the customer and consumer.

The explosion of data, compute power, networks and devices have converged into new types of online communities and services. This has changed the way business and social interaction work.



For example, businesses no longer need to procure, operate and maintain full and complete back-end IT infrastructure and applications. Full or partial IT infrastructure and applications are now being provided by cloud service providers.

In addition, the smart phone and tablet devices have enabled new mobile business models which did not exist ten years ago, via cloud enabled applications and improvements in data communications and broadband access and speeds.

The premise of cloud computing is it allows services to be provided with greater economies of scale, quicker, faster and cheaper and without the need for a service provider to own the entire IT infrastructure.

Peaks in demand for IT, business and customer services can be automatically provisioned for, leading to a pay-per-use model. A pay-per-use model can, in certain circumstances, lower the full cost of service delivery without full ownership of back-end IT infrastructure.

Cloud computing enables organizations realize benefits which are included in the following table.



Benefit	Details
Reduces IT asset ownership	<p>Cloud computing reduces the requirement for purchasing and managing items such as hardware, support, licensing, maintenance and warranty etc.</p> <p>All these items should be included in the cloud computing service and costs.</p> <p>Some organizations may wish to reduce their ownership of IT more than others for various reasons, including when:</p> <ul style="list-style-type: none">— The IT equipment has fully depreciated— The return on investment (ROI) been fully realized— There is a requirement to reduced costs including capital expenditure on new IT assets.



Reduces overall capital expenditure costs (CAPEX) (see note below)	Less capital expenditure is required as less IT infrastructure, software and licenses are being procured directly.
Reduces IT overcapacity	<p>Many organizations have underutilized IT assets and capabilities. They have built IT infrastructures to cope with high but infrequent peaks in IT usage.</p> <p>This leads to inefficient use of expensive IT equipment and services. Cloud computing can reduce overcapacity and handle increased needs for IT resources on a utility-based pricing structure, lowering overall costs and increasing flexibility.</p> <p>Overall, cloud computing can introduce flexible demand and capacity management.</p>
Increases the capabilities of the IT organization	Cloud computing and cloud-based services allows organizations to use services which they may not have been



	able to afford in the past or not have had the capability to set up and deliver.
Leverages newer technologies	<p>Cloud computing service providers are expected to maintain their services on the latest platforms, provide the latest features and functions and install the latest patches etc.</p> <p>This in turn provides the customers and consumers with access to the latest versions of technology, IT infrastructures and services that they might not have otherwise been able to provide themselves.</p>
Provides utility-based charging	<p>Utility based charging or charging per consumption is recognized as a method for ensuring usage is charged for and non-usage is not charged for.</p> <p>Where cloud computing reduces or eliminates overcapacity within IT, the overall unit cost of providing those IT</p>



	<p>services would be expected to fall, at least initially.</p> <p>This is similar to a utility bill, e.g. electricity, where only the electricity used is paid for.</p>
Introduces real economies of scale	<p>Cloud service providers are expected to provide economies of scale. They build the infrastructure and support for multiple customers and consumers.</p> <p>This in turn should provide cost savings to the customers and consumers of cloud computing.</p>
Enables resources to be scaled up and down quickly, matching increases and decreases in demand for IT services	<p>Cloud computing allows a short notice increase in demand for IT services to be met.</p> <p>Auto-allocation of compute resources, cloud bursting and spot cloud computing are all methods which can be used to scale resources up and down quickly,</p>



	matching increases and decreases in demand for IT services.
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An important note about CAPEX

Reducing capital expenditure will lead to increases in operational expenditure (OPEX). Organizations should understand the impact of this and how to accommodate the increased operations expenditure within their budgetary processes.

In addition, some organizations will prefer to spend the CAPEX they have raised for IT projects. Therefore it is important to identify the organization's strategy around how they intend to pay for IT services, systems and applications. In general terms, organizations are likely to adopt a hybrid approach to capital and operations expenses, using both traditional IT and cloud computing.

Why is IT service management benefits to cloud providers and cloud consumers?

Cloud service providers are no different to traditional IT service providers in relation to their need to provide quality, cost-effective, secure and available IT services. A key value proposition of cloud-based service providers is the provision of IT infrastructure and services under a utility or pay-per-use model.



Cloud service providers should be focused on designing quality services customers and consumers require, while solving problems. Cloud service providers aim to provide value to customers by facilitating outcomes customers want to achieve, without the ownership of specific costs and risks.

For example, Platform as a Service (PaaS) may reduce the overall ownership and costs (capital and operational) to the customer, regarding their back-end infrastructure. It is incumbent on the customer to analyze the total costs and examine the potential for cost savings, including:

- Total cost of ownership (TCO)
- ROI
- CAPEX versus OPEX requirements.

The cloud service provider is expected to provide high levels of quality and service assurance in order to:

- Increase their customer share
- Deliver the services
- Ensure the integrity, security, availability and continuity of the services.

However, quality and service levels may not be open for discussion or negotiation with the customer. Therefore, it is prudent for the customer to understand if the customer can define the levels of service quality and assurance, they require in a negotiated service level agreement.



Customers of cloud computing and cloud-based services should expect, and demand, at least the same levels of service as that is provided by traditional IT service providers and internal IT organizations. In many cases it is common for customers and consumers to expect even higher levels of service from cloud service providers. There are a number of reasons for this:

- Company data now resides outside of the organization and must be managed securely
- Security and availability concerns / requirements
- Ensuring service continuity
- Cloud computing is new to the organization
- Fear, uncertainty and doubt
- The impact on public image regarding cloud computing reported in the public domain.

It is incumbent on the cloud customer / consumer to ensure adequate levels of service quality and assurance etc. is provided. It is also incumbent on the customer / consumer to ensure they have designed and bought adequate levels of service quality and assurance etc.

The benefits of cloud are real. But you have to work hard and spend wisely to achieve them.

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