

# DEMYSTIFYING THE CLOUD

The marketing of IT has been characterised by 'buzzword' concepts for many years. The latest of these terms to take hold is 'the cloud' – a nebulous phrase that has been floating around in the public consciousness. Here we attempt to pin it down, as well as assessing what it means to your organisation, and how it can influence strategic IT decisions.

## Defining 'the cloud'

A convention for many years has been to draw logical IT diagrams with a cloud symbol to depict networks where the topology of the actual network links is not known, is indeterminate or is out of control of the infrastructure being illustrated.

However, when IT services were developed that could be remotely connected by anyone on the Internet, it became natural to depict these as located at the edges of the amorphous network cloud. The shorthand concept of the cloud as a destination, where remote services could be reached, was born.

Despite this, it should be clear that the network cloud remains a transporter of data. The shorthand of the cloud as a location comes about because the user of the remote

services does not care what the network connections to the service look like, or where the service itself is located.

To sum up, then, the cloud can be defined as a shorthand term to denote a remote IT service that is provided in an indeterminate manner, over an indeterminate network infrastructure.

## As examples of use of the cloud, consider the following:

- using a desktop PC at work to access a corporate application running from your company's data centre
- using a desktop PC at work to access a parent company's corporate applications
- using your home PC to read your email, using a webmail service
- buying a song on an smartphone from an online store.

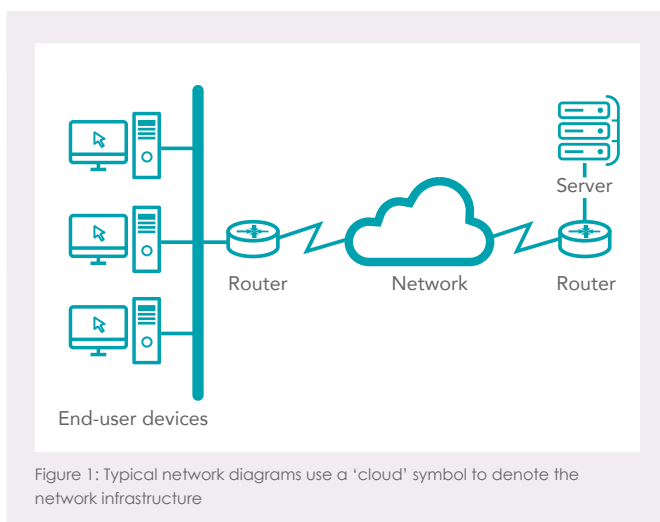


Figure 1: Typical network diagrams use a 'cloud' symbol to denote the network infrastructure

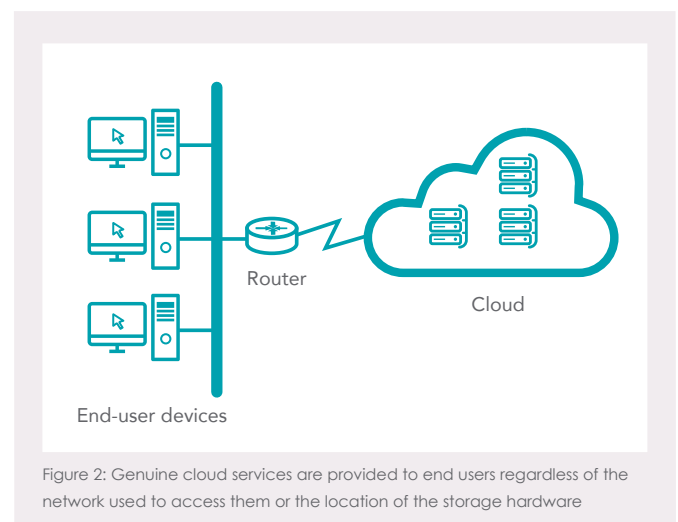


Figure 2: Genuine cloud services are provided to end users regardless of the network used to access them or the location of the storage hardware

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## Cloud services

Based on this definition, the true usefulness of the cloud in terms of planning IT strategy is really about the services that the cloud can host and provide access to. Cloud services can be viewed as sitting within service layers that define the capabilities of the offering:

- **cloud infrastructure** – pure computing resources such as processors, disks and memory
- **cloud platform** – an unconfigured development environment that can be used to host user-created applications (such as Web services or databases)
- **cloud software** – a fully functional application environment, providing functional IT services to users (such as Google's GMail application, or Salesforce.com's customer relationship management application).

Not all cloud services sit wholly within each layer, for example, a service offering VMWare's virtualisation environment in the cloud has aspects of both the infrastructure and platform layers. Nevertheless, the layer approach allows cloud services to be categorised more clearly, which helps to map an organisation's requirements onto those service offerings.

## Adjective soup

This is not the end of the cloud confusion, however. A variety of adjectives are applied to modify the meaning of the term and denote particular approaches to the delivery of IT services over a cloud.

In some respects, these terms are artificial: they are used to promote particular business models or to support the architectural approaches of cloud service vendors. Nevertheless, given the ubiquity of these terms in IT, it is useful to understand what they mean.

- **Private cloud** – cloud services offered to users only within an organisation. In effect, this is a conventional IT services arrangement, where an organisation provides and operates its own infrastructure, platforms and software to support its operations.
- **Public cloud** – cloud services offered to customers, accessible via the Internet or other public-facing networks (such as corporate applications running from a remote server hosting centre).
- **Hybrid cloud** – a mixture of cloud services provided in both private and public modes, e.g. an organisation running its own services, but using public cloud hosting as a business continuity fall-back.
- **Personal cloud** – an individual desktop PC operating system running as a virtual machine within a virtual desktop infrastructure (VDI) environment, e.g. using a thin-client terminal or a tablet to connect to a remote Windows desktop for corporate applications.

## Benefits and strategic considerations

What becomes clear from considering the services and terms that are used around cloud computing is that the offerings are organised around two key concepts: the type of service hosted in the cloud, and the logical location of that service. Understanding this allows the potential benefits of each type of cloud service to be considered, assessed and quantified against an organisation's own internal business requirements.

Typical benefits that can be offered by a move to cloud services include the following.

- **Resilience** – by moving to a cloud architecture, ICT services can potentially be made more resilient to outages, and applications can be made independent of the hardware that they run on, insulating them from hardware failures.1

- **Scalability** – the availability of cloud services allows for demand-led ICT resource models to be considered, where additional ICT resources can be added to an infrastructure quickly, without the need to install, connect and test new hardware.
- **Energy efficiency** – ICT resources hosted within facilities that are optimised for energy efficiency, together with the increased processor utilisation that can come from cloud services, means that overall ICT energy efficiency can be increased within organisations. This generates tangible savings in energy costs.
- **Management** – using cloud services can allow an organisation to divest itself of certain management requirements related to ICT applications, in particular low-level technical requirements relating to hardware and software maintenance.
- **Cost reduction** – naturally, any outsourced service has the potential, if implemented properly, to share economies of scale and reduce overheads to deliver reductions in operational costs. In addition, capital project costs can be reduced or eliminated as well, depending on the exact cloud services and operational models selected.

Realisation of the benefits of cloud services is predicated on the usual assumptions made when looking to purchase ICT services: that the requirements are clear, that the functions are well defined, that expected levels of service are stated on both sides, and that the relationship between supplier and customer is well managed. However, there are additional strategic considerations that must be factored in when looking at cloud services as part of the ICT strategy of an organisation: governance, network quality, and exit strategies.

*Cloud services might not be for everyone – but they should now be part of yours strategic thinking.*

Firstly, the integrity of data, how it is managed, and where it is located are key considerations when using cloud services. There are legal expectations placed on any organisation in terms of its data management that must be maintained, even when the data is hosted on a cloud platform that might be in another legal jurisdiction.

Secondly, it is extremely important when considering cloud services to look at the quality of an organisation's network. This is vital when migrating to a model where ICT services are remote from the organisation or end user and may not always be offered from the same place at any given time (depending on the business requirements in play at that moment). The network becomes a truly critical part of the overall infrastructure under these circumstances, and as such must be designed, operated and managed to ensure that the risk of network failure is minimised.

Finally, like any outsourced service, it is vital that an organisation has a clear idea of how it can avoid lock-in so that it can move to other providers simply, cleanly and at low risk. This might be because of poor service, poor value or for other factors relating to business requirements. In any case, the architecture and management of any services should bear this potential need in mind at all times.

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## Conclusion

This paper has aimed to provide a clear and concise guide to the underlying concepts that make up cloud computing. The cloud may be amorphous, but the services available are real – and so are the potential benefits. The industry is therefore driving towards much greater provision of cloud services, and is ensuring that other ICT solutions are compatible and compliant with the cloud approach. Cloud services might not be for everyone – but they should now be part of your strategic thinking.

1 Naturally, this increased resilience is only available if the cloud architecture used is itself designed, built and operated to be resilient (though most cloud services are); also, the network connections used to access the cloud services must be resilient.

## About Mason Advisory

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## Contact us

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