

# The hidden costs of moving to the cloud

## Cloud confusion?

### Jargon Buster

**C**loud is a catch-all phrase widely used to describe services delivered by third parties without the need for the customer to provide technology infrastructure and it is usually accessed over the internet.

Over time, the following terms have become the standard language when distinguishing between the variety of cloud-services available:

- 🌐 **Software as a Service (SaaS)** - where a turnkey application is delivered as a service, usually with no or low up-front costs, and paid for based on some form of usage metric – often number of registered users. Example: the well-known sales and CRM application [salesforce.com](https://www.salesforce.com)
- 🌐 **Infrastructure as a Service (IaaS)** – where virtual processing, storage and network capacity is provided for end-users to install and run their own applications. These services are the most generic, with the ability to offer services for most operating platforms and applications. Payment is usually based on usage metrics – the more you use the more you pay – with flexibility approaching that of utility companies. Example: fully managed hosting services from the likes of Amazon Web Services, Verizon (Terremark), Microsoft (Azure), and Google (Cloud Platform).
- 🌐 **Platform as a Service (PaaS)** – a hybrid sitting between SaaS and IaaS – where the end application needs to be created by the customer, but it is developed using tools and libraries provided as part of the service. Example: salesforce's 'force.com'.

**C**loud has long been a buzz-word for anyone involved in IT. Software as a Service (SaaS) is more than a decade old, and although Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) are newer, adoption is picking up quickly.

As the terminology becomes commonplace, and the approach starts to gain critical support at enterprise IT-level, cloud is starting to look less like an innovative way of doing things, and more like the norm. The focus seems to have shifted from “should IT move to the cloud?” to “in what areas?”, “how?” and “when?” If it’s not happening in your organisation yet, it probably will be soon.

Of course, you may already be underway: you may have identified a candidate service you want to move to the cloud and understand how it fits into your IT organisation’s service offer. The costs look great (much cheaper than your current set up) and it looks easy to manage.

### Surely, it should be fairly straightforward from here?

If only it was. Try not to underestimate how this different way of doing things will impact the business. For your IT organisation, it will change the way they design; how they budget and pass on costs to the business; and maybe, how they are structured and the skills they need to do their job effectively. It impacts others parts of the organisation too – requiring them to engage differently with suppliers and even to compromise in order to gain the real benefits of moving to a cloud model.



## What is cloud computing?

In a previous unspun article, we asked what is cloud computing? and considered some of the challenges of adopting cloud. In this article, building on some of our recent client experiences implementing IaaS, we reflect on what “getting real” about cloud might mean for your organisation. And on some of the hidden costs of moving to the cloud...

### Design to fail

The first thing that needs to change is your organisation's attitude to things failing. You need to learn to live with it. Or, more specifically, you need to design your solutions to cope with instances of failure. If an IaaS server ‘breaks’, no-one arrives with a spanner to fix it. It's gone. Firstly your application configuration will need to recognise that the server has failed, then, it needs to be able to briefly live without it. Finally, it must be able to replace it with a new, automatically built virtual machine.

This means designing applications that failover effectively. Rather than aiming to minimise outages, the challenge becomes one of managing failures efficiently and smoothly, with minimum impact on the business. It's a very different way of thinking about things.

To ensure that your failover processes are robust, they need thorough, and regular, testing. Some organisations have taken a radical approach here. For example, Netflix developed ‘[Chaos Monkey](#)’ – an application which randomly destroys server instances - to keep their operations team on their toes, and make sure they can keep things running even when the inevitable failures happen. This approach may not be appropriate for everyone, but it's critical to develop and embed a structure and approach that works for your business.

### Adopt a new approach to budgeting

The prospect of reducing IT costs often drives businesses into the cloud. There are some significant benefits, particularly for applications where demand varies dramatically – for example finance systems which see peak usage at month- or year-end. IaaS allows you to access additional capacity to support busy periods, which is then scaled down the rest of the time. And you only pay for what you use.

This pay as you go approach, coupled with minimal project set up costs and the removal of capital expenditure, means cloud is often expected to have a positive impact on the IT budget. That's usually the case. But swapping a clear fixed cost for one that is variable, and that can rise and fall based on usage outside of the IT department's control, can take a bit of getting used to.

Previously the IT organisation's impact on the finances stemmed from the tricky business of capacity management and forecasting demand: get this wrong and you may find you have paid for too much capacity, which could go unused. Or you may have reined in spending resulting in insufficient capacity, in which case your services will fail. With cloud, the risk is different. To use a utility analogy: with a pay-as-you-go service the lights will never go out, but you could be in for a nasty shock if you've left them on all week and inadvertently blown your budget.

Consequently your IT organisation will also need to consider how to manage and carry variable costs and agree on how these costs will be passed back to the business.

## Stretch your set up and skills base

By moving into the cloud you are effectively changing the way IT delivers its services to the business. And in doing so, you are changing the roles and responsibilities of the people and teams concerned, and the structures in which they operate. This inevitably has significant commercial, process, and organisational implications.

IaaS turns infrastructure into software. Things that used to be done 'in the data centre' (for example provisioning, capacity management, maintenance and security) are now done with mouse clicks and configuration scripts. Infrastructure accountability might therefore move from your data-centre operations team to your application maintenance team. As a result of these changes, you may need to amend your outsourced contracts to reflect additional responsibilities that a supplier may be required to take on.

As the role of capacity management changes from being predictive to retrospective, you may need new processes to empower your people to act. They may need more flexibility to increase provision on the fly, or greater budget control.

All of this change can leave your team feeling exposed: they may feel stretched as they take on additional roles or responsibilities, feel they don't have the right skills or feel under pressure if they don't understand the new technology. You need ensure they are fully involved and well-informed throughout the process, and that they understand the benefits of this new way of working.

## Be prepared to lose some leverage

While it is true that cloud services can deliver at low cost, there are inevitably trade-offs. A key one being standardisation - of everything, including service offerings, service level agreements (SLAs) and terms and conditions.

Vendors like Amazon and Google are used to "click here to accept" contractual relationships with their customers.

But this is not something that sits easily with large organisations or corporates, whose legal and procurement teams are accustomed to negotiating their own favourable terms with suppliers. In a cloud world these teams will have far less leverage which might make them feel very uncomfortable.

Everyone involved needs to understand that cloud vendors have limited room for manoeuvre: tailoring their offering for each client would be at odds with the low cost, high-volume, multi-tenant service they embody, and would compromise their business model. As you are not tied into a long-term contract, complex performance and penalty clauses are less important. And it is often these types of clauses that add time and cost to structuring acceptable arrangements. Instead, you will need to embrace compromise and focus efforts on building rigour into internal processes to mitigate concerns around vendor behaviour or performance. This is simply a price of doing business in the cloud.

## So is it worth all this upheaval?

You might well be asking yourself the question. After all, moving to the cloud was supposed to make things easier, not create a whole host of extra work. In spite of the challenges, most businesses can gain real benefits from this new way of working. But in our experience, you have to start the journey with your eyes open. Be aware of the choices and extent of the changes the business will have to make - be they around application suitability, organisational structures or skills - and then make them boldly. It may feel disruptive, as all change does, but that's to be expected. And if you need help thinking things through, or would just like to talk to someone about it, we'd love to hear from you.



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