

Using the Cloud: Assessing Your Company's Risk Tolerance

The Cloud in a Nutshell

Wikipedia defines "Cloud Computing" as the delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service over a network (typically the Internet).

Cloud computing is a marketing term for technologies that provide computation, software, data access, and storage services that do not require end-user knowledge of the physical location and configuration of the system that delivers the services. A parallel to this concept can be drawn with the electricity grid, wherein end-users consume power without needing to understand the component devices or infrastructure required to provide the service.

Cloud computing providers deliver applications via the internet, which are accessed from web browsers and desktop and mobile apps, while the business software and data are stored on servers at a remote location. In some cases, legacy applications (line of business applications that until now have been prevalent in thin client Windows computing) are delivered via a screen-sharing technology, while the computing resources are consolidated at a remote data centre location; in other cases, entire business applications have been coded using web-based technologies such as AJAX.

The potential benefits and cost savings for moving some or all your company's equipment and applications to the cloud are immense: no more servers, networks, software upgrades, etc., to maintain. All this comes at a price, of course, but it comes with great potential savings. Are the savings greater than the costs eliminated?

Not so fast.

Assessing Your Company's Risk

A major point that I do not see addressed in the majority of the discussions about cloud computing (and most definitely not brought up by most of the vendors) is the underlying network. Let me ask you a question: Is your current network infrastructure fully (100%) redundant, both internally and externally? Of course it isn't. The costs involved make this prohibitive for most businesses. Because the cloud requires the network to be fully operational 24x7, the network costs for the provider are considerable. As a Chief Information Officer (CIO), you have now put your business in the hands of the network vendors.

Wikipedia defines "risk" as "the potential that a chosen action or activity (including the choice of inaction) will lead to a loss (an undesirable outcome). The notion implies that a choice having an influence on the outcome exists (or existed). Potential losses themselves may also be called "risks". Almost any human endeavor carries some risk, but some are much more risky than others."

Wikipedia uses the "Electric Grid" as a concept example. That is a great analogy, but the actual cloud infrastructure of today doesn't utilize an 80-year-old established infrastructure. (Never mind that some would say *that* infrastructure is in need of repair.) One of the reasons you might be considering the cloud is because you do not need to be concerned about all that infrastructure.

After all, you are just purchasing a service. I say you *do* have to know about all the infrastructure involved, because you have to calculate risk in using it. Many cloud services vendors use off-shore data centers, or off-

shore operations support, or off-shore back-up and/or off-shore help desk call centers, all of which increase your risks.

As in all major projects, do a full risk assessment. We are not just talking not being able to a phone call or use Goggle for a few minutes. We are talking about the majority of your firm's business processes stopping. How long can your business operate in such a state, should it occur?

You must take into consideration how dependent your firm is now going to be on the vendor's networks, across the country, maybe from multiple vendors, maybe even in a foreign country. If you currently have departments or divisions in smaller cities you know what I am referring to. Uptime for your whole company, a department or division could be considerably affected by a network outage, and none of the "Cloud Service" vendors are going to reimburse your company for lost revenue, even with "full indemnity" clauses in place.

Example:

After a major earthquake, one of my clients called me in to assist in the development of a RFP for a completely new data center with all fully redundant computer systems. This was in reaction to them being completely down and unable to provide their services for 53 hours. It was determined that they were losing \$600,000 per hour. Perhaps this was a major incident that only happens every few years, but can any company afford to lose that kind of revenue?

In the end, after twelve people spent three days developing the detail for the RFP, I discovered that it was not the *systems* that went down, rather it was lack of network connectivity. The staff simply could not access the *facility* where the company's applications were hosted. In short, the network was down. If you are not located in earthquake country, you might not consider this scenario, but in using the cloud, you need to consider now the physical locations where the cloud services data center are hosted. It could affect your business.

The Whole Picture: TCO

The most critical part of the whole cloud equation is the "The Total Cost of Ownership (TCO)". This isn't only the cost of the service itself and ensuing savings of having to provide and maintain your own data centers, networks, computing equipment, software licenses, etc. To determine a real TCO, assess the risks associated with placing these assets and their maintenance in someone else's hands. What is the provider's SLA around each of these areas? And assuming an outage, major or minor, occurs (as it inevitably will), how much might it cost your in lost business opportunities and productivity?

In short, I am not saying that you should not move to "Cloud Services." It is a very viable service for many companies. What I am advocating is that you understand the BIG picture and calculate the TCO, using various risk scenarios, from several hours of downtime to minor business functions all the way to a complete business outage for several days. Then weigh these potential costs against the cost of a fully redundant network. It may well be that the savings and headaches you save by moving to the cloud outweigh the potential risks and costs. It also may not. It all depends on your business and its risk tolerance.