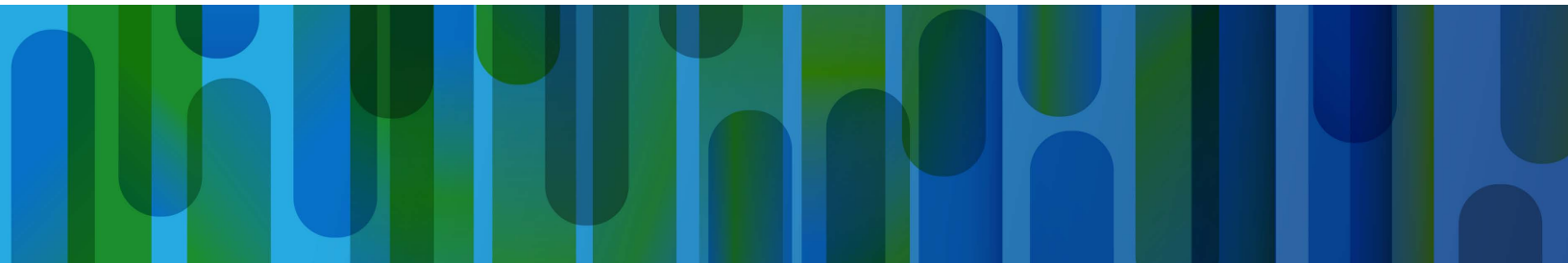# Cloud Computing 101: Improve the Value of IT

May 02, 2011

# Cloud Computing 101: Improve the Value of IT

## Introduction

In a fast-moving and volatile market, the ability to harness new technologies and remain competitive is more important than ever. However, in many organizations there is a lingering sense that the IT function is focused on technology infrastructure and not on harnessing the information and knowledge that IT investments deliver.

Cloud computing has the potential to improve the value of IT. This document provides an overview of the benefits, challenges, and actions needed to capitalize on this transformative trend.

## What Is the Cloud?

Like many IT-industry-inspired terms, "cloud" has the potential to confuse the user community. In essence, cloud computing is no more than web-based computing. If you have ever done anything on the web, you are a cloud user. Online banking, online retail stores, and online betting are all prominent examples of cloud computing.

The following are essential points for understanding cloud computing.

- Cloud applications are delivered to the user through a web browser.
- Users do not need to have any preloaded software installed on their machines.
- Users do not buy the cloud application. The payment model is typically free (for example, web-based email such as hotmail.com), per transaction (for example, retail sites such as amazon.com), or service-based (for example, information services such as wsj.com).

However, the cloud also has the capability to deliver technology infrastructure services, such as data storage and processing power. Your IT group could use cloud-based services as part of the corporate business continuity plan by storing data somewhere beyond the organization's physical perimeter.

Certain activities require substantial processing capacity; for example, forecasting the price of a commodity or simulating collisions on a concept car. If these activities are only required infrequently, then it makes sense to rent someone else's capacity rather than buy very expensive, fast-depreciating technology that will be very underutilized.

One other important concept is that of a private cloud. The public cloud uses the web, but a private cloud uses the organization's private network. The benefit of a private cloud is improved security; however, by having to maintain your own infrastructure you lose the cloud's potential advantages.

According to a recent survey of 30 Chief Information Officers (CIOs) from large global organizations who attended the Cisco CIO Summit 2010, cloud computing is beginning to take hold in enterprises, but they are primarily using private cloud infrastructures. For these CIOs surveyed, public-cloud infrastructure is being used for basic computing, but many are still evaluating both public and private cloud-based services for business-critical applications such as enterprise resource planning (ERP).

In any case, cloud computing can be thought of as browser-based computing. All users need for public or private access is an inexpensive computer that is running a browser.

## Benefits

Although not all organizations are rapidly embracing cloud computing, the potential benefits are well understood:

- Organizational flexibility
- Reduced cost of infrastructure
- Agility and rapid deployment
- Refocus of IT resources
- Creation of new business models

Let's focus on why cloud computing is so important to Chief Executive, Information, and Financial Officers.

### Anytime, Anyplace: Organizational Flexibility

The fact that users only require a device with a browser to access the applications they need means that they can access services when and where needed. This supports working from home, allowing many staff members to enjoy a better quality of work life. Working from home can lead to "hot desking" (desks shared between people who work at different times), which in turn leads to a decreased need for office space. Thus, lower costs and an improved environmental record are part of the cloud outcome.

### Information, Not IT: Agility and Rapid Deployment

Information is a source of the business value. Increasingly value is emerging from the management of what people know and how they share what they know.

Cloud-based computing frees the IT department from "technology bondage" so that it can focus on delivering the tools to mine, analyze, and share the information and knowledge that resides within databases, files, and people.

### Happy CFO: Reduced Cost of Infrastructure

The cloud approach moves technology spending off the balance sheet and onto the profit and loss statement. Technology assets are fast-depreciating and typically underutilized. The cloud makes this someone else's problem. The service-based model makes it easier to predict cash flow requirements, and much greater efficiency is obtained when the service provider offers a pay-per-use model. No longer needing to purchase expensive hardware and applications means no more cost spikes in the IT cash flow. With cloud computing, payment is spread over the duration of the service.

### Let the Professionals Handle IT: Refocused IT Resources

IT departments no longer need to invest a considerable amount of their budget to access resources such as applications and infrastructure. The cloud places these resources, which were otherwise out of reach, quickly into the hands of IT.

### Unlocked Revenue Potential: Creation of New Business Models

Because applications and resources are easily accessible, companies can react quickly to customer needs. This helps them set strategies to promote innovation while potentially entering new markets.

### Concerns

The benefits of cloud computing sound compelling, particularly to those who have long held reservations about their IT group's ability to meet their business needs. And yes, pursuing a public cloud strategy is essentially the same as outsourcing. However, as many organizations learned during the post-dot-com period, wholesale outsourcing is not a smart move. And when any credit-card-wielding user can buy the services they want, the problem gets much worse.

So be aware of the following.

### Some CIOs Will Feel Threatened

Cloud-based computing threatens to have a significant effect in decreasing the number of servers and staff resources. For those CIOs who have risen up the ranks through a technology management career path, the cloud essentially takes away technology management, leaving the CIOs in a position of questioning their own relevance. But this presents an opportunity for the CIOs to become more strategy-focused rather than technology-focused.

A focus on strategy requires the CIO to develop a whole new set of skills, and this must be taken into account when transitioning to cloud computing. Of course there are many forward-thinking CIOs who see cloud-based services as an opportunity because they allow flexibility and cost savings.

### Your Security Risks Will Increase

Use of the public cloud means that more of your data will travel along the public network and thus outside the direct control of your IT function. According to a poll taken during the Cisco CIO Summit, 51 percent of the attendees cited security and regulatory compliance as the main challenge they face with cloud computing. That is why many CIOs are choosing private clouds to help with the management of security.

### Internet Outage Will Be a Serious Problem

Your organization will be at the mercy of the Internet, which is admittedly becoming increasingly reliable. However, should a problem arise–perhaps a utility worker has drilled through the cable in the street-your people will be powerless to do their jobs.

### Not Everything Lends Itself to the Cloud

Organizations may have applications that are developed for their specific needs. Such applications do not lend themselves to outsourcing. Typical providers of cloud-based services would find no benefit in accepting a single application, as their model is usually based on a developing an application once and selling it many times.

### Governance Problems

A recent white paper by Padmasree Warrior, CIO of Cisco ("Cloud: Powered by the Network: What a Business Leader Must Know"), reminds CIOs that cloud-based services will challenge organizations to rethink governance processes for consuming, delivering, and managing IT resources. Cloud services are available to budget owners across the organization with the swipe of a credit card. Legal and risk management departments will require standards to assure security, privacy, service-level agreement (SLA) conformance, and regulatory and standards compliance.

### Legal Exposure

Embracing cloud computing may invite legal risk. Many cloud applications decouple data access from data storage. In other words, users do not know (and in most cases do not care) where their data resides.

For example, a cloud service vendor may say that your data is stored on their U.K. servers, but these U.K.-labeled servers are located in the U.S. Your organization is exposed to the data regulations associated with where your data physically resides. Inadvertently you may be breaking some other country's laws.

### Supplier or Partner?

The cloud lends itself to commoditization. Thus the business models of vendors will be to sign up customers to a point where each subsequent customer provides almost pure profit. Such a model is not suitable to meeting the specific needs of individual customers. Thus it is likely that your technology providers will be more suppliers than partners.

In itself, this is not an issue, particularly if you think of cloud services in utility terms.

## Major Actions

The benefits of transition to cloud-based services are clear, but the transition is not without risk. The following actions will help you to maximize the benefits and minimize the risks.

### Ensure that Your CIO Is Onboard

The extent to which your CIO embraces cloud computing is a measure of how strategic and user-facing she or he is. If resistance is felt, then possibly your CIO is not a genuine CIO and is really more of an IT manager. You may need to involve Human Resources; whether the emphasis is on reskilling or recruitment will depend on the profile of your CIO.

Some IT leaders do not appreciate that cloud technology simply provides the information that users need. In other words, the information is the source of business value, not the technology. Cloud computing supports this approach, so value-oriented IT leaders should see the cloud as an opportunity.

### Manage the Enterprise Architecture

Ensure that your enterprise architecture is documented and adhered to. Cloud purchases need to be made within the enterprise architecture framework. That is to say, if cloud-based services offer an improvement to the business processes of a given department, this needs to be considered in the context of the enterprise architecture. Once silos of incompatible data start to accumulate, you have a serious problem. Conversely, if you invest in getting this right you may soon gain a significant competitive advantage.

Cloud computing requests need to pass through the IT department to minimize enterprise architecture risks. Similarly, automating poorly-thought-out business processes will simply enhance your inefficiency. Where the cloud services vendor has a better approach (for example, to invoice management), then give serious consideration to reengineering the associated processes to map onto the service.

### Involve Your Lawyers

As mentioned, there are legal risks involving data storage. Also be aware that e-discovery may become an issue with a cloud-based model. For example, if one of your customers complains about one of your staff communicating inappropriately, to what extent will your providers furnish you with copies of emails, text messages, and video correspondence?

A failure to deliver evidence is the equivalent of guilt. Your legal team needs to ensure that legal issues are addressed when you adopt cloud services.

### Avoid a "Big Bang"

Avoid wholesale outsourcing. A blended approach is recommended. In other words, a portfolio of traditional in-house, private cloud, and public cloud applications is a good starting point. Change the portfolio distribution as the organization becomes more adept at sourcing and using public cloud services. A good general principle is to let other organizations provide the "crash test dummies." Avoid being the first to adopt a given cloud service, unless the benefits of being first far outstrip the associated difficult learning curve.

### Keep the Customer in Mind

Any move to cloud-based services must be done with the customer in mind. The cloud has the potential to help your organization deliver more for less. So ensure that cloud services adoption takes place only when the customer impact is fully understood.

### Know Where to Begin

Padmasree Warrior advises asking yourself the following questions to determine where to begin; the answers to these questions will shape your cloud strategy.

- What is the expected impact of cloud computing on my business?
- Which applications can and should I move to the cloud?
- What kind of cloud deployment model is best suited for each of my applications?
- How do I transition my existing applications to the cloud?
- How do I maintain security and policy compliance in the cloud?
- How do I transition my organization to best take advantage of cloud computing?

### Conclusion

Cloud computing is too compelling to ignore. Today it may offer a competitive advantage. Tomorrow it may be an entry condition into any competitive market. So the question is when rather than whether.

Considering the enormous impact cloud-based services will have on business and society, the transition to the cloud will require firm digital leadership. And digital leadership cannot be outsourced to your CIO.

### For More Information

As you begin your own journey to cloud computing, we invite you to discuss the right approach for your organization with your Cisco® account manager, channel partners, and other IT advisors. For additional information on cloud-based services, please visit http://www.cisco.com/go/cloud

*together* we are the human network. **CISCO**