

# Get Off My Cloud!

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## Reap the benefits of cloud computing without sacrificing security

In my view, cloud computing involves such a paradigm shift that it has the potential to completely change IT service delivery. That seismic shift isn't expected to take long, either. In 2008, IDC predicted that cloud computing would grow from its current market size of about \$16 billion to \$42 billion by 2012. Should your company be part of the shift and, if so, how do you participate without sacrificing data security?

I define cloud computing as "client-enabled purchasing or provisioning of packaged service offerings." Clouds take infrastructure, platforms and applications and make them available in a package. These packages are then made available on demand. Others at Xerox have compared cloud computing to an "all-bills-paid" apartment rental with shared walls and common ground.

### The beer analogy

I think of cloud computing as analogous to the introduction of beer bottles. At one time, the only way to consume beer was in a bar via a draft. Then, someone created bottled beer, which led to the consumption of much the same beer, but with different packaging. Suddenly, people could take beer home with them. They had the flexibility to purchase and consume beer in a way that best suited them.

Cloud computing offers much the same opportunity. Instead of purchasing hardware or software, cloud computing lets you purchase services based on variables such as time spent, bandwidth consumed, storage space consumed, computing cycles or amount of data transferred. Clouds offer the ability to purchase any or all of the following as a service: infrastructure, virtual infrastructure, application components, software and software platforms (IaaS, VaaS, CaaS, SaaS and PaaS, respectively).

You no longer have to invest in the underlying technology and you can better tie your IT to your business strategy. In a well-designed cloud, legacy resources and other infrastructure services come together through non-proprietary Web protocols, many of which are XML-based, to enhance integration.

Today, most cloud vendors provide niche components or services (cloudlets). One example can be found within Xerox itself, which already delivers a full computer Infrastructure as a Service (IaaS) through its ITO services. The industry is moving toward creating quality, reliable, secure "enterprise clouds," but significant control, security and performance challenges remain.

### Providing security through private or enterprise clouds

For most companies, information security is their primary concern about cloud computing. With public clouds, you may not know where the data centers are located and exactly how they're protecting your data. The global nature of clouds will challenge the inevitable limitations of country-specific laws on information privacy.

Xerox's vision of the enterprise cloud is about creating a trusted environment that embodies global computing to meet each client's specific needs. Firms such as Xerox can help clients save money even while protecting their security. They can purchase large volumes of bandwidth, mailboxes or the like at a discount, and then add a "wrapper" around them in the form of a secure connection that protects the data, back-end integration such as asset management, or other value-added services. Clients get affordable services with more integration and greater security.

If you need more email box capacity, for example, you can pay a fee every time you add another 50 mailboxes. You're not paying for processing or other hardware or software – just a per-mailbox fee that can flex with your needs in a private, more secure environment.

### A multi-tenancy option

Xerox views a multi-tenancy model described by Gartner as a win-win approach for many of its clients. The existing layered technology used in enterprise computing today paves the path to cloud computing because the underlying computer resources are already layered, and those "bottom" layers can be applied to multi-tenancy.

In a virtual multi-tenancy scenario, tenants have their own dedicated stack of technology, but the infrastructure is virtual. They gain the savings and elasticity of a cloud environment, but are the only tenant on their application.

For more information, see our White Paper entitled "Xerox's ITO Perspective on Cloud Computing: Is It Ready?"

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## Vendor selection considerations

When your head is in the clouds, don't forget to stay focused on what's important:

- First, make sure that increases in your network-bandwidth charges won't outweigh savings on equipment and software.
- Second, if information security is important, consider the merits of a private cloud and make sure that your vendor has a long track record of privacy and security. Then make sure the arrangements allow you to retain sufficient control.
- Third, legal considerations are different from country to country and industry to industry, so FDA compliance, legal holds on data and the like should be considered when evaluating cloud options.
- Finally, consider whether the company you select has the flexibility to offer a range of new IT products and services rather than being limited to its own proprietary offerings. The IT industry is currently undergoing considerable consolidation (think HP and EDS or Oracle and Sun Microsystems), with the potential disadvantage that vendors could be locked into proprietary solutions. We think it's preferable to be IT-agnostic – able to offer a variety of applications and software.

What is your view about the utility of clouds and the information security issues they raise?  
What does your company want and need from your cloud vendors?

## About Xerox

Xerox is the world's leading enterprise for business process and document management. Its technology, expertise and services enable workplaces – from small businesses to large global enterprises – to simplify the way work gets done so they operate more effectively and focus more on what matters most: their real business. Xerox offers business process outsourcing and IT outsourcing services, including data processing, healthcare solutions, HR benefits management, finance support, transportation solutions, and customer relationship management services for commercial and government organizations worldwide. The company also provides extensive leading-edge document technology, services, software and genuine Xerox supplies for graphic communication and office printing environments of any size. Xerox serves clients in more than 160 countries.

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