Enterprise Cloud Computing: The Infrastructure’s Ultimate Revenge

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What is enterprise cloud computing? Simply stated, it’s a behind the firewalls use of commercial, internet-based cloud technologies specifically focused on one company’s or one business environment’s computing needs. Enterprise cloud computing is a controlled, internal place that offers the rapid and flexible provisioning of compute power, storage, software, and security services to meet your mission’s demands. It combines the processes of a best in class ITIL organization with the agility of managed, global infrastructure to make your IT faster, better, cheaper, and safer. Enterprise cloud computing gives your business agility, survivability, sustainability, and security.

I believe commercial solutions—whether its Google’s cloud or Amazon’s web services—may be perfect for many companies. But, some corporations and government agencies are not going to be comfortable outsourcing their information and services to the internet-based cloud. For agencies like mine, and for many corporations, keeping such precious gems in our own possession is a foregone conclusion. Hence, enterprise cloud computing is your answer.

Pressures Facing CIOs
A recent global study by IBM summarized the various pressure points facing CIOs. First, today’s CIO must be able to use technology to drive a company’s innovation. He needs to understand the plans and goals of the agency and introduce IT that will achieve those goals—working with the business. This is certainly not IT for IT’s sake; it is IT for the company’s sake. It is the integration of IT and business for maximum corporate leverage and competitiveness. To achieve the innovation the company needs, today’s CIO must increase the flexibility and efficiency of infrastructure to support business changes and provide a foundation for new IT insertion.

Second, today’s CIO must be a savvy value creator. She must be able to produce or increase profit from existing company property. This may be connecting the enterprise’s data in new ways to give new insights and improve decisions. Or, it may be improving IT’s overall understanding of the business that allows IT to bring forth new technologies to shift the business forward. The creation of value for today’s CIO cannot come with increased expense. Today’s CIO must be thrifty and manage internal costs to free dollars to create innovation and value. Standardizing and centralizing infrastructure can keep IT costs to a minimum.
Finally, the IBM study noted that today’s CIO is a true partner with other executives in the organization. His job is to listen to other business leaders in the company and work with them collaboratively to improve the competitiveness of the business. Delivering innovative solutions usually requires cultural change in the business; a strong partnership between the CIO and the business leader is needed to push that cultural change through. It is not enough, however, for the CIO to focus outside of the IT department. Today’s CIO must also look inward and inspire her own organization to excellence in innovation, service provisioning, applications development, security, and other core infrastructure disciplines while also inspiring her IT employees to improve their business acumen.

I highlight this IBM study as it demonstrates the mounting pressures facing CIOs and IT departments. There’s no new money; yet IT must produce transformations for the business. OpEx is increasing as a percent of overall IT spend--further eating away at the CIO’s ability to free funds for new developments. I believe Enterprise Cloud Computing is a key strategy that allows the CIO to plot a path forward that reduces operating costs and also delivers a competitive advantage for the business. Enterprise Cloud Computing gives the CIO IT infrastructure that is faster, better, cheaper, and safer. Enterprise Cloud Computing offers a great return on investment and makes it a premier strategy for the CIO to achieve business value while reducing costs and complexity. How does Enterprise Cloud Computing improve the agility, sustainability, survivability, and security of IT so IT returns value to mission?

**Responding With Enterprise Cloud Computing**

Every CIO needs the ability to quickly and rapidly provision new infrastructure to support business needs. Think of the likely scenarios facing your business.

- If you’re FEMA, you need rapid ability to provision IT services for national emergency response.
- If you’re the Department of State, you need to be able to respond to terrorist bombings or earthquakes to provide immediate US citizen services and diplomatic support to host nations.
- Similarly, if you’re H&R Block and gearing up for tax season, you need to grow your services quickly and just in time to meet consumer surge—for those few months of the year but not for the whole year.
- If you’re Burger King and preparing for a mass marking campaign to promote “Transformers,” you want fast capacity for the marketing hype without long-term excess.
- Or, if you’re Toys R Us, you want your web services to safely and rapidly respond to the holiday crunch and then return to off-season levels at an affordable price.
Cloud computing makes all of this possible through inexpensive, commodity-based components that you can daisy chain together with a few clicks on the keyboard. You need temporary storage or fast dedication of storage to a new effort; the storage cloud can do that. If you need compute power, you can call up a dozen new servers to improve processing time and then decommission those servers when your peak has subsided. Or, if you need on-demand security services to process sensitive data, Cloud Computing can give you a private enclave with a full suite of security services in a matter of minutes and not months.

As noted in the beginning, Enterprise Cloud Computing is behind the firewall and contained within a business enterprise (one company, one agency, or one supply chain, for example). A true cloud environment contains many layers and extends beyond the compute platform. To gain early advantage in Enterprise Cloud Computing, you need at least a storage cloud and a compute/processing cloud sitting on top of your network cloud. However, this requires each cloud user to bring database, application, web services, and security services with them. You’ll achieve goodness in this scenario but you may not actually achieve faster, better, cheaper, and safer overall IT.

A robust Enterprise Cloud Computing environment will have storage, compute, database, application, and maybe additional layers. It will support rapid stand-up of development and test environments to reduce time to market by applications developers. It will include standard data management approaches and flexible storage schemes to allow broad re-use of corporate data without storing the data in multiple locations. It should have security as a service that dictates a common, consistent approach to assuring the identity, access, and audit of individuals and systems. Finally, a robust Enterprise Cloud will be built on a solid foundation of common processes, management, and governance principles to keep the cloud optimized.

**Faster, Better, Cheaper, and Safer**

Perhaps the most prolific feature of Cloud Computing is the ability to deliver services faster. The storage, compute, and infrastructure layers of Enterprise Cloud Computing allow you to rapidly increase capacity to respond to peaks in demand. You don’t need long-lead times to pre-provision service. You can keep a minimal amount of excess capacity on hand to quickly expand. And, because you are built on commodity platforms, you can get more capacity without lengthy acquisition cycles. You have a new app that needs to stress test for the weekend? Just reassign some processing power to accommodate the load and return the power to the business for Monday morning demands.

Enterprise Cloud Computing also allows IT to be better. When you have just a few copies of your enterprise data and you can stripe those copies around multiple physical data centers, you’ve improved your disaster recovery posture. Your availability numbers can also soar with Enterprise Cloud Computing. Ready-made redundancy protects from failure and drives your mean-time-between-failure sky high while driving
your mean-time-to-repair down to zero. It’s also better from a Green IT perspective. Enterprise Cloud Computing still takes power, space, and cooling but it allows you to maximize the capacity in any single powered unit.

This also drives us to a **cheaper** IT environment. Legacy environments required 30 or 50% utilization rates across suites of physical servers to manage wide ranging deltas in performance. Each physical server was always on and always draining power. With Enterprise Cloud Computing, you can maximize the load on a physical rack while spreading the compute power across virtual servers, thus allowing you to respond to wide-ranging performance demands without adding physical equipment. Enterprise Cloud Computing improves OpEx by forcing rigid adherence to standards thus reducing change management overhead and associated engineering review labor.

Enterprise Cloud Computing also helps IT deliver a **safer** environment. The standards-base of the cloud reduces the complexity and variety of the infrastructure, allowing you to deploy patches more rapidly across the enterprise. By keeping the cloud inside your firewalls, you can focus your strongest intrusion detection and prevention sensors on your perimeter; thus gaining significant advantage over the most common attack vector—the Internet. By virtualizing storage, you protect against a physical intruder that might be intent on taking your server or disk out of the data center for exploitation. If you take the cloud to the desktop and deliver your office automation through a virtual desktop, you reduce workstation security anomalies and greatly improve edge protection. Finally, as we move to security services in the cloud, you hit a multi-dimensional safety model that extends beyond people and their accesses. The multiple dimensions allow you to make security decisions based on who you are, where you are at that moment, what kind of data or app you want, and what kind of device you have.

**The Infrastructure’s Ultimate Revenge Is...**

Does all of this really free the infrastructure? Is the title of this talk “Enterprise Cloud Computing: The Infrastructure’s Ultimate Revenge” for real? Can I get it over its reputation as being too slow, too expensive, and too rigid? As the CIO or head of infrastructure, if I walk down this path, can I deliver IT that is faster, better, cheaper, and safer? My unequivocal answer to you is “Yes.” You can use Enterprise Cloud Computing as the infrastructure’s ultimate revenge. You can turn the conversation away from statements such as:

- “My business unit was ready but IT was behind schedule.”
- “My business unit could have predicted that but the application used bad data.”
- “The application was ready to deliver but the infrastructure wasn’t there.”
To statements like:

- “The infrastructure delivered ahead of schedule and I’m waiting for my business unit to set a date for training.”
- “I’m sorry boss; we had the right data we just made the wrong prediction.”
- “The infrastructure’s ready to go whenever your app is.”

The Infrastructure’s Ultimate Revenge is that it won’t be your scape goat any more. Enterprise Cloud Computing done right will take the wait out of applications delivery. As soon as new code is ready to drop, the infrastructure’s waiting to take it. If you need a 5000 person test environment for 30-days, the infrastructure can delivery that in a day and give it to you for the month you need it.

The Infrastructure’s Ultimate Revenge is an IT commodity that gives your business a perfect inventory model for data storage and compute power. You won’t waste money on excess capacity and you won’t waste time waiting for new capacity.

Finally, the Infrastructure’s Ultimate Revenge means IT is out of your critical path. Delivering you an environment that is faster, better, cheaper, and safer so you can accomplish your business objectives. Enterprise Cloud Computing allows you to cut the ball-and-chain of the past or release the albatross from around your neck. You’re no longer stuck with slow, lethargic, antiquated solutions. Enterprise Cloud Computing allows your company to break away, soar, and be successful.

In summary, the Infrastructure’s Ultimate Revenge is more than faster, better, cheaper, and safer IT. It “Frees your Business to Change Strategically.”