

The Rise of Services-Oriented IT and the Birth of IT Infrastructure-as-a-Service

By: Jim Leach



The Rise of Services-Oriented IT

Services-oriented IT may turn out to be one of the major breakthroughs in the IT industry, but it won't be an overnight success. The majority of the IT industry continues to use traditional business models of selling hardware, software, and services. However, these traditional models are being expanded to embrace a services orientation. For example:

- Hardware Manufacturers – in the past sold their products as “boxes” are now using their hardware to deliver a service over a network. Today, SUN Microsystems sells servers and also sells server capacity on its grid. Storage manufacturers could do the same thing.
- Software Vendors – in the past sold their products as “shrink wrapped” applications are now using their software to deliver a service over a network. Microsoft and SAP have made significant moves in this area.
- Outsourcing Services – typically used an “asset arbitrage” model based on more effective utilization of people and more efficient management of technology are now delivering “business process outsourcing” which is essentially a service model for outsourcing with guaranteed delivery of service transactions such as human resources, accounts payable, and help desk.

A similar trend is emerging in enterprise IT organizations as they introduce service models into their operations to increase the value they deliver to the business. For example, with:

- Enterprise IT Applications – application developers that once developed “big bang” massive applications are now deconstructing complex business processes into a set of services that are expressed through rapidly developed applets that can be easily integrated into larger enterprise solutions.
- Enterprise IT Operations – in the past Enterprise IT developed unique management systems and processes are now using best practices frameworks such as the Information Technology Infrastructure Library (ITIL) and service level agreements based on performance metrics.

The Birth of IT Infrastructure-as-a-Service

The next IT area which could embrace a services orientation is infrastructure. IT infrastructure can be divided into three elements:

- Equipment – includes enterprise servers, storage, network, security devices
- Facilities – that house, protect, and power the equipment including data centers, power and cooling systems, back-up generators, and security systems
- Management Systems – to monitor performance of the infrastructure both onsite and remotely and to make changes as necessary

There has been tremendous innovation over the last 30 years in the individual elements of equipment, facilities, and management systems. The problem is that integration between the elements has been limited as the form factor for computing has remained mostly static. When you need to run an application, you buy a server. If you want to store large data bases, you buy disk drives. To access applications and data, you need the Internet or a private network. For facilities, you either build your



own data center or rent space from a colocation provider. Management software is typically provided with individual elements, but it is hard to get a view across elements.

What if IT infrastructure elements could be integrated and the functions of these elements delivered over a network connection? What if you truly could have IT infrastructure-as-a-service? The result would be enterprise IT functions that are more:

- Responsive – with technology, management systems, and operations built and optimized to sense and respond to the unique needs of enterprise applications unlike traditional approaches that retrofit legacy voice or computing infrastructures.
- Cost Effective – based on scale economies from operations and technology that can deliver secure “slices” of a massively scalable IT platform.
- Managed – with both visibility and control through web-based portals.
- Reliable, Secure, and Compliant – bringing the benefits of large scale computing that used to be available only to enterprises with the greatest IT budgets to business and government organizations of all sizes.

Is it Hype, Reality, or Both?

As typically occurs in the IT industry, the marketing buzz about IT-infrastructure-as-a-service preceded the actual delivery of the service. We were all a little too quick to believe the ads and sound bites about on-demand and utility computing. In the end, these buzz words turned out to be simply servers and storage products that had “spare” processors or disks that were turned on and paid for when capacity requirements dictated.

But the hype is beginning to become more real. A number of key developments are enabling the delivery of IT infrastructure-as-a-service.

Virtualization Technology – Over time, virtualization will eliminate the form factor of computing. It allows you to take hardware and divide it into pieces that fit business needs. The result is you will shift from acquiring, managing, and depreciating hardware assets that you grow into over time (and waste capacity from day-one) to buying the server cycles, storage capacity, and network bandwidth you need to run your applications.

Integrated Functional Management Systems – Management software has in the past been dedicated to individual hardware elements. As virtualization turns boxes into functions, management software is emerging that provides a view into the performance of the functions and control of the capacity.

Best Practices Architectures and Frameworks – An alphabet soup of frameworks has emerged that help IT suppliers to develop, deploy, and continuously improve their solutions. These frameworks also help IT buyers to evaluate and purchase IT solutions by providing a yardstick for measuring service providers. For example, Services-Oriented Architecture (SOA) is a framework being used for Enterprise IT applications. Information Technology Infrastructure Library (ITIL) is a framework guiding enterprise IT operations. Cisco developed Service-Oriented Network Architecture (SONA) as the network architecture for SOA applications. SAVVIS recently published a vendor-neutral best-practices framework for IT infrastructure-as-a-service called Infrastructure Services-Oriented Architecture (ISOA). ISOA is the enterprise prescription for building, deploying, and managing integrated server, storage, and security functions across a fully converged, intelligent network. A white paper on ISOA is available for no charge at www.savvis.net/ISOA.



So, Now What?

The IT infrastructure-as-a-service model presents a compelling alternative to conventional approaches such as “do-it-yourself,” which often requires high up-front capital expenditures and long lead times, and traditional outsourcing, which can be difficult to manage and scale. A number of telecommunications and hosting companies have announced services that leverage this new model and offer the promise of delivering greater value to business and government IT organizations. But, where to start?

The good news is that IT infrastructure-as-a-service is not an “all or nothing” value proposition. CIOs can introduce this service model into their operation in a way that makes the most sense for their business. Large enterprises with a big investment in legacy systems may want to start with a new application or stand-alone business unit. Start-ups with hopes for rapid growth, particularly software-as-a-service companies, may find that the IT infrastructure-as-a-service model is a good fit for their entire IT operation. In all cases, CIOs should evaluate and select an IT infrastructure-as-a-service provider with growth in mind as scalability is one of the key benefits of this service model.

About the Author

Jim Leach is Vice President at SAVVIS and has over twenty years of experience bringing to market technology based business solutions. He is a frequent contributor to industry publications and speaker at industry events.