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Near and Long Term Trends Shaping IT Roadmaps

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Executive Summary

There are clear trends driving the course of IT today. Most recently the worst recession in the past 80 years has forced CIOs to rethink how they deliver the services required to drive reductions in costs, increases in efficiencies, and managing risks while still servicing the business at the required levels. The strategies employed beyond headcount reductions have been; IT automation with the introduction of service catalog functionality and consolidation beyond the traditional virtualization space to include applications, networks, data centers, and vendors.

The introduction of the cloud has recently become a focus point of IT executives around the world. What is driving this interest is the promise of reduced services cost, but most importantly the speed at which these services can be provisioned and de-provisioned making IT nimble and responsive to the requirements of the business.

Combine all of this with history in the IT space and what we see is a clear trend back to centralized computing (consolidation of data centers, cloud services, SAAS, virtualization). History has stated that centralization is the best way to reduce required headcount, increase manageability, and deliver consistent services to the required business units. However, we often do not apply past learning to future endeavors, so the challenges that IT will face in the next wave of change include those challenges that have already been dealt with in the past.

The challenges include:

- The management of multiple vendors in a way that doesn't break the bank
- Integration between these vendors and current solutions
- A need to understand a clear path for the integration of these new services to solve business needs
- The challenge of moving fast enough to solve the business challenge and the shear know how to make the transition.

All of these challenges will be solved by innovative solutions brought to market by visionary companies.

Trends

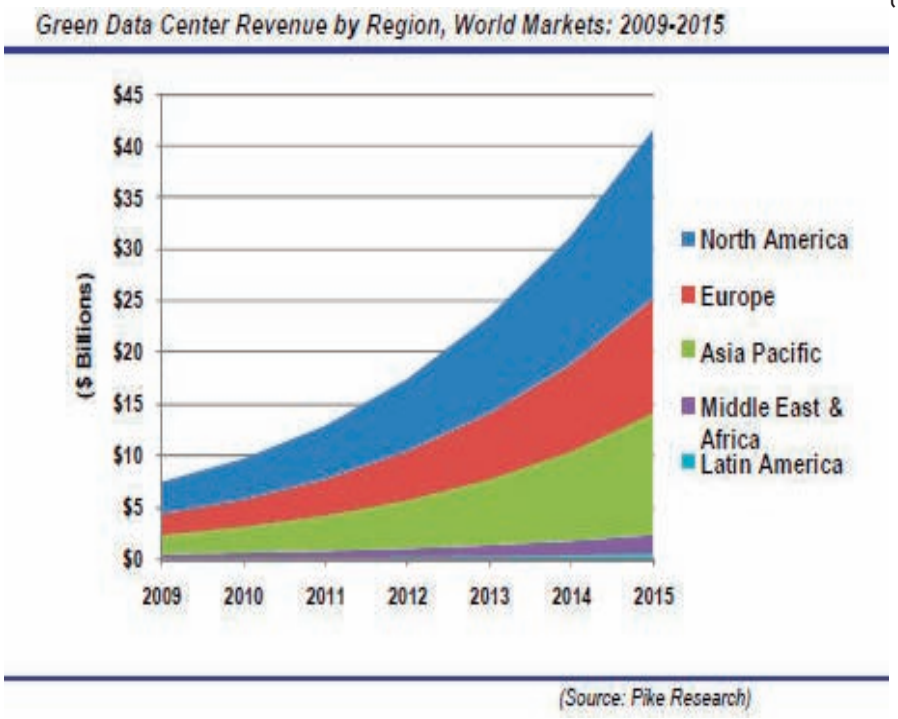
Consolidation

Over the past three years, starting at the beginning of the recession, there has been a drive in the IT world to consolidate datacenters. There are two factors driving these consolidations.

1) The need to reduce costs
2) The requirement to reduce carbon foot prints

There has been a push to make current and future datacenters GREEN. By greening the datacenter companies can do their civic duty along with reaping the windfall of lower costs in datacenter operations (FIG 1).

(FIG1)



New to the datacenter concept is the introduction of containerization, and a modular approach. With containerization IT organizations can quickly add capacity as needed in a contained model; conversely IT organizations can reduce the size of the datacenter on the fly. These modular units are gaining popularity with large scale organizations that are currently space limited and have needs in many locations.

Consolidation isn't limited to technology either; IT executives are now in the process of consolidating vendors. While multi-sourcing still affords IT organizations to maintain competition, consolidating down to those vendors that really add value is a new push for organizations and will continue to accelerate over the next several years.[1]This multi-sourcing and consolidation effort creates challenges for IT organizations that need to manage vendors to successful outcomes related to services delivered to the business units.[2]

Consolidation is clearly not limited to the datacenters themselves. Many IT organizations are beginning to consolidate platforms as they reduce the size of the workforce and continue to reduce space, power, and cooling consumption. This is no more evident than in vendors' direction with technology. Cisco has continued to push its UCS platform which is a combination of computing power and virtual networking platforms. VBLOCK is another example and is a collaboration of three main vendors including; EMC, Cisco, and VMware. These consolidated platforms have more horsepower, and are delivered in much smaller footprints, fitting a need to consolidate space, while increasing efficiency.

Coupled with this many IT organizations are beginning to consolidate platforms. As vendors get smarter about the way products are built and the size of IT organizations reduce limiting knowledge, IT organizations are now migrating to multi-function platforms.

Virtualization

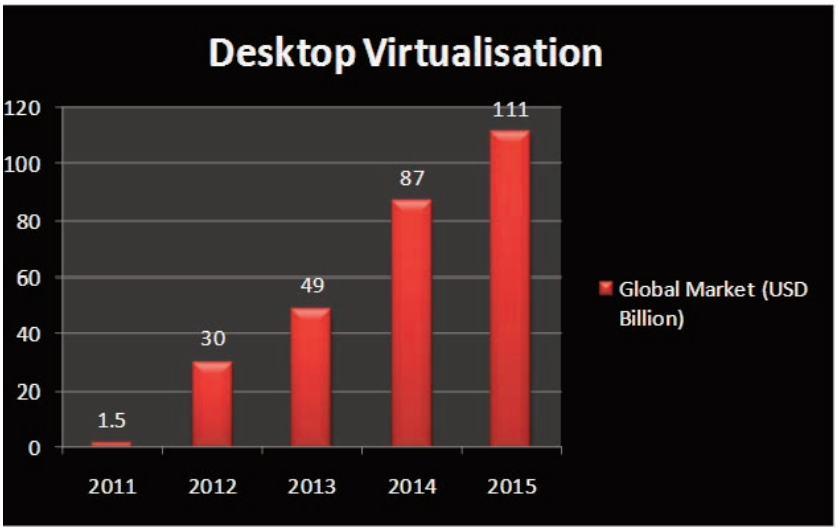
Virtualization is no longer limited to the systems within a datacenter. IT departments are now virtualizing every aspect of operations including networks, applications, systems, storage, desktops, security, and even datacenters. The question becomes will the move to cloud eclipse the virtualization movement? Now that the management issue of the virtual world has been tackled the next frontier is security within a virtualized environment.

Many players have entered this market with the hopes of tackling the very issue which is creating a large amount of anxiety for those who have gone down the virtualization path.[3] The area of IAM (Identity Access Management) becomes a very key area of consideration when dealing with systems and applications which intermingle in a virtualized world. Application virtualization is an up and coming area of interest for many enterprises, and has created issues of its own. There is very early growth in the virtualized desktop space which will certainly grow over the next several years, sparked mainly by IT executives who no longer wish to be in the desktop support business, the desire of end users to bring their own devices to work, and by the constant centralization of IT services (FIG 2). These three trends will force companies to develop services which allow IT organizations to get "services on tap".

[1] The Trend towards vendor consolidation http://www.ssonetwork.com/trend-towards-vendor-consolidation/5422-A

[2] Cloud deployments and vendor consolidation drive Virtual security appliance market http://www.marketwire.com/press-release/infonetics-research-cloud-deployments-vendor-consolidation-drive-virtual-security-appliance-1540536.htm

[3] "Why IT Outsourcing deals are getting smaller CIO Magazine July" http://www.cio.com/article/686749/Why_IT_Outsourcing_Deals_Are_Getting_Smaller?source=rss_research_analysis"



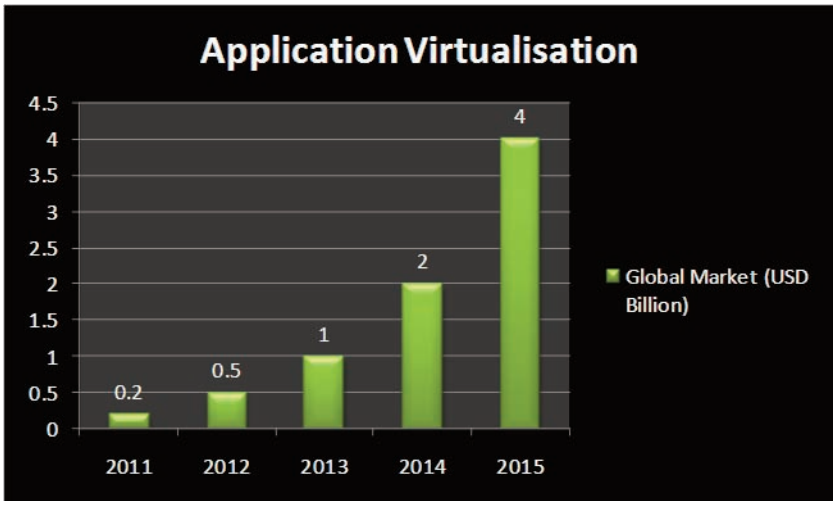
(FIG 2)

IT organizations are no longer the only purveyor of services. There are many options for business units with speed, consistent support, and ability to adapt to change as large drivers for organizations to continue the push to virtualization.

It is clear virtualization is here to stay and industry analysts predict that it will accelerate at a much faster pace than originally thought. This acceleration is fueled by a need to be timely in deployment of services, increases in scale and reductions in cost requirements.

New to the virtualization era is application virtualization with impressive current and predicted growth rates (FIG 3).

Network virtualization has continued to take hold and with Cisco's entry into the market with its combined network and server play on the UCS it is sure to continue its growth path. And finally with the advent of VBLOCK IT organizations get the ability to handle the pressures put upon them by the business units and we begin to see collaboration of vendors (EMC, Cisco, VMware) in solving this new converged world.



(FIG 3)

Cloud Adoption

There is a major shift in how IT organizations are looking to deliver services starting with the cloud. Organizations are challenged not by the promise the cloud brings, but rather, how do they effectively take advantage of the cloud.

IT organizations are fueled by the capability to meet the challenges imposed upon them during this recession and for the years to come. They have proven that even in the worst of times they are capable of delivering the level of service required to run the business, and as such are not likely to see the level of funding that they have enjoyed in the past. The cloud affords them the possibility of meeting and exciding the ever increasing demand of business units to deliver on existing and new services.

Back to the "services on tap" statement, the cloud delivers on this promise. First, a definition of what the cloud really is; "The ability for an organization to access from anywhere at anytime the IT resources required to drive revenue and support within an organization. These resources being capable of provision and de-provisioning, build by usage, and secure in nature." This definition brings with it many challenges including; access control, data ownership and security, integration, management, and compliance.

If we look at this new world, it's not much different from the challenges IT has faced in the old world. From centralized computing in the days of the mainframe to de-centralized computing with the advent of x86 platforms and now back to the centralized world of the cloud.

The fact remains that in the mid-to-large enterprise space there will be a hybrid approach to the cloud which will be a combination of public, private and even integrated portions of existing infrastructure which clearly will never entirely go away.[4]

As an ending statement on cloud; industry pundits, analyst, and business personnel are urging vendors to get a cloud strategy or be left behind moving forward.[5]

Centralization

It's here, the year 1970. It sounds like a strange thing to say but we are truly moving full circle as it relates to IT. As we are aware in 1970 the only real game in town as it related to IT was the mainframe. In the mid 80's we began to migrate away from the mainframe in the direction of decentralized computing on UNIX and x86 platforms. The argument at the time was that

[4] 2011 Cloud Computing Predictions for CIOs and Business Technology Leaders http://blogs.forbes.com/ciocentral/2010/12/27/2011-cloud-computing-predictions-for-cios-and-business-technology-leaders/

[5] 2011 Cloud Computing Predictions for Vendors and Service Providers http://blog.softwareinsider.org/2010/12/28/2011-cloud-computing-predictions-for-vendors-and-solution-providers/

decentralizing allowed for more specific control over certain application services. As the 90's came to an end and the bubble burst within the internet and the subsequent financial disasters of 2008 took shape, it became clear that organizations could no longer support such wide spread deployments of systems and applications. This has given birth to a new breed of technology that we now know as the cloud fueled by other technologies such as virtualization.

This push back to centralization promises to reduce costs, and increase efficiency in the service delivery; however it does not come without its challenges. Many of these challenges have been seen and overcome in the past. These challenges include; bandwidth, security, integration, access control, vendor relationship management, and a new breed of skill set within the IT organizations themselves.

The push to centralization is actually changing the landscape of what IT departments need to manage, and what they need to service the business unit needs. It is clear from these individuals that a new model of management is required. One that allows IT to focus on higher value information gathering, analytics, engineering, business process change and reporting while managing other organizations which deliver the needed services required supporting the business.

There is a huge GAP; however, in what IT organizations have in the way of staffing and skill sets, and what is needed in this new model. IT organizations struggle to keep up with the accelerating change within the business requirements and the technology capability. In short they have challenges related to modernization.

A changing economy and the proliferation of BYOT have led to a new lighter-weight IT model for many organizations. This new IT structure houses fewer IT personnel with deep technical skills and instead leverages sourcing arrangements with external companies that specialize in business process and business applications.

This new model focuses resources in areas where IT expertise outside of an organization can bring better insight and value to the IT organization as a whole. The move to a lighter weight IT model requires a new set of skills from IT professionals such as:

- **Agile Solution Engineering.** The requirement for Agile Solution Engineering is where modernization fits in and requires a skill set that is not readily available within the ranks of IT. The reason behind this is that organizations are typically tactically focused and find it difficult to pick up on and leverage trends within the organization. The short and long of this anomaly is that organizations need help from their vendors to keep up with the pace of change.
- **Business Process Change.** As enterprises continually strive for innovation, increased efficiencies and reduced costs, the IT organization will need the necessary expertise to help integrate process change into day to day operational and strategic planning for the business as a whole.

- **Information and Analytics.** Organizations need data driven intelligence to make the right strategic decisions for their business. A thorough understanding of an enterprise's business plans and model, market intelligence and customer trends is necessary to make confident decisions that optimize business results. as a whole.

Overcoming the GAPS in IT staffing and skill sets will help IT organizations along their path to modernization and centralization.

Big Data

The ever increasing size of data storage is causing major issues within IT organizations. This increase in data storage requirements are driven by many external factors including; compliance, the value of the data being retained, outdated backup and storage policies, and the continuation of automation in the IT space. All of these factors contribute to the need for newer technologies in use including de-duplication, automated tiering and storage resource analysis. On top of the applications being used to handle the management of the storage arrays, newer technologies are being developed to mine these information pools in the area of analytics.

The data storage requirements are expected to grow at a CAGR of 18% over the next 5 years. This trend doesn't seem to be slowing and will create even more stress in the data center as well as on applications which will be required to read this vast amount of data. These trends are pushing IT organizations to rethink the way they layout, store, and access the data.

Conclusion

The last three years have been very challenging for IT organizations as they have survived a major transition in the way business looks at, and utilizes IT. Industry analysts have stated that the CIO role is becoming more business minded and less technically focused and that this trend will continue for the foreseeable future. The ever increasing requirement for IT to consistently and cost effectively deliver IT services which enable the business and drive value outside of the IT organization have led to the advent of consolidation, virtualization, cloud adoption and centralization as key trends that will impact business in the next 3-5 years. IT organizations that partner with vendors that embrace a "services on tap" delivery model will be well poised to overcome the challenges associated with the current IT trends.

About the Author

Robert Klotz - Chief Technology Officer

As Chief Technology Officer at Akibia, Mr. Klotz is responsible for delivering service offerings that meet the evolving requirements of today's enterprise organizations. As Akibia's technical evangelist, Mr. Klotz articulates Akibia's strategic vision to customers, partners, prospects and the industry as a whole. He partners with Akibia's customers, serving as a high-level resource for advice and best practices while also ensuring the company is delivering services that align with customer priorities. Mr. Klotz has more than 15 years of experience creating and delivering leading-edge technology solutions. Prior to Akibia, Mr. Klotz was general manager at Eirteic Consulting where he was instrumental in launching a new enterprise management focused business partnering with companies such as IBM. Prior to Eirteic he was the founder and vice president of Technical Services at SilverBack Technologies, which was acquired by Dell. In 2001 he was named one of Computer World Magazine's "Premier 100 IT Leaders."

About Akibia

Akibia, a Zensar company, provides innovative Infrastructure Management solutions that enable leading companies worldwide to optimize, secure, manage and support their mission-critical infrastructure. As an independent advisor, Akibia partners with our customers to deliver solutions that improve the availability, reliability and performance of their data center, network and security infrastructure. Using its multi-shore capabilities, Akibia combines expert consulting, integration and support services with world-class customer service to help IT organizations reduce costs, increase efficiencies and manage risk in the data center. For more information visit www.akibia.com.