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Virtual Computing Environment Coalition Seeks to Reduce Risk of Jumping into the Cloud

Tony Iams, SVP and Senior Analyst

Cisco, EMC, and VMware announced that they have formed an alliance called the Virtual Computing Environment (VCE) Coalition to reduce their customers' risk of adopting cloud computing. Interest in cloud computing remains high across the industry. The adoption of cloud computing promises to lower costs in the short term by allowing internal infrastructure to be managed more efficiently. Ultimately, cloud computing could enable certain workloads to be shifted to third-party providers, which can host them with greater economies of scale. Some startups and web-centric organizations are already drawing on computing services from third-party suppliers to save money on investing in IT infrastructure. Larger organizations still seek assurance of acceptable service levels and security before they will entrust critical workloads to third parties. In the meantime, these organizations are converging internal virtual machines, virtualized storage, and virtualized networking into "private" clouds that can be managed more efficiently as a single pool of computing resources.

Alliance Spans Business and Technology

The VCE initiative primarily targets organizations pursuing private clouds, and it has four components:

- » The VCE alliance will collaborate technically by introducing a new category of datacenter infrastructure technology called vBlocks, which combine virtualization, networking, storage, and computing into a single package.
- » The VCE alliance will combine its pre-sales and support resources, as well as its partner management and business development capabilities, so that customers will have a seamless, end-to-end engagement model that

makes the three organizations appear as one.

- » Cisco and EMC have formed a joint venture called Acadia, a legal corporate entity with additional financial and personnel investments from Intel and VMware. The goal for Acadia is to help customers accelerate the adoption of cloud computing by serving as a "knowledge repository" for cloud computing practices. Acadia will offer to build out cloud-based infrastructure for customers using vBlocks, operate this infrastructure for some time, and then ultimately transfer the management of the infrastructure either to the customer's in-house facilities, or to third-party service providers. The company will initially begin operations in Q1 of CY2010 with a staff of approximately 130 people.
- » Cisco, EMC, and VMware will combine the collective resources of their partner ecosystem, with the goal of enabling ISVs, systems integrators, and customers to deliver solutions based on the vBlock platform.

vBlocks: Virtualized Building Blocks

The vBlock combines network and server technology from Cisco (UCS blade server and Nexus switches), storage and security technology from EMC (including Cisco MDS SAN infrastructure), and VMware's vSphere virtualization software into a single "atomic" building block that can be used to construct virtualized datacenters. Because these blocks can be managed as a unit, the VCE coalition hopes that their relative simplicity will dramatically lower datacenter operating expenses. The group initially announced three vBlock models:

- » vBlock 0 is intended for smaller datacenters, and it will support 300 to 800 virtual machines. It will be targeted at mid-market customers and distributed primarily through channel partners.

» vBlock 1 is intended for medium-sized datacenters, and it will support from 800 to 3,000 virtual machines. Designed for consolidation and optimization initiatives, vBlock 1 is comprised of a repeatable model leveraging Cisco's UCS, Nexus 1000v, and Multilayer Directional Switches (MDS); EMC's CLARiiON storage (secured by technology from EMC's RSA security division); and VMware's vSphere platform. It will target mainstream deployment in enterprise datacenters.

» vBlock 2 is intended for large datacenters, and it will support from 3,000 to 6,000+ virtual machines. Designed for large-scale and "green field" virtualization, vBlock 2 takes advantage of Cisco's Unified Computing System (UCS), Nexus 1000v, and Multilayer Directional Switches (MDS); EMC's Symmetrix V-Max storage (secured by RSA); and VMware's vSphere platform. It can be optimized for either performance-centric or capacity-centric loads, including Virtual Desktop Infrastructure (VDI). Its cost will be multiple millions of dollars, and will likely require consulting engagements to deploy.

vBlock 1 and vBlock 2 are available now, and vBlock 0 will begin shipping at the beginning of 2010.

One of the goals of the alliance is to redefine the core components of the datacenter so that alliance members can be in a better position to layer their management tools on top of the components, handling tasks like load balancing, application workload management, and self-service portals (i.e., all the operations that give IT infrastructure the attributes of cloud computing). EMC will be the first company to roll out management software for the vBlock with a product called Ionix Unified Infrastructure

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Manager (UIM). UIM will serve as an interface between the management of discrete elements within the vBlocks, and higher-level enterprise management frameworks.

Ionix UIM is the preferred unified element manager for vBlock at launch. As an element manager, it is designed to plug into and support a wide range of industry-available enterprise management consoles. Customers may choose to deploy vBlock solutions and use traditional management methods with existing tools but that would mean all the infrastructure components would be managed independently, dramatically reducing operating expense benefits to customers. The goal of the VCE is to reduce the high IT budget percentages that go toward maintenance rather than meaningful business differentiation (a typical ratio mentioned is that 70% of costs go to maintenance and 30% go to innovation). One of the most effective ways to lower operational expenses is to simplify infrastructure so that its management burden is reduced. By consolidating the key components of virtual infrastructure into a vBlock single package, the VCE alliance hopes to offer better efficiencies of scale for deploying and managing the key systems components.

Unified Sales and Support

A key challenge for the alliance partners is to integrate their approaches for going to market, not just with enterprise customers, but also with services providers and systems integrators. To succeed in presenting a unified face to customers, the group will have to bring their sales and support organizations together so that they can provide end-to-end accountability. Therefore, the coalition has created a Solutions Support Team (SST), which is a jointly funded "virtual selling" organization comprised of staff from all three companies. The SST is available to the direct sales organizations of Cisco, EMC, and VMware, as well as the selling organizations of their partners. On the

support side, the three companies have created a single support organization for vBlock systems. The representatives of this organization are still employees of the member companies, but customers have the ability to call a single number at Cisco, EMC, or VMware, and obtain a single support experience for vBlock spanning all three companies. The organization will do all necessary work in the background to track cases at all three companies, and to perform triage on the support issue to make sure that the appropriate experts handle the problem for the customer.

Acadia: Guiding Users to Cloud Computing

The VCE alliance hopes to make it easier for customers to choose whether to host IT infrastructure internally, or to entrust it to third-party service providers. VCE's goal is to make the choice of where to acquire computing resources an operational and business decision, not an architectural decision. Ideally, it should be possible to make this choice on a daily basis, or even by the hour or minute, taking advantage of those resources that make sense at any given time. The ability to make this choice is a fundamental premise of the cloud computing vision; however, while there is widespread agreement on the benefits of this vision, there is relatively little agreement across the industry on how to achieve it. As a result, IT managers are feeling pressure to exploit the business benefits of cloud computing, but struggle to determine what the first step is. Even if they recognized what steps to take, managers may lack the necessary skills, or the necessary computing infrastructure, to properly execute them. Moreover, despite the ability for virtualization to minimize the disruption of existing workloads as they are reconnected to virtualized computing resources, customers sense that workloads will require at least some adaptation in order to take full advantage of cloud computing. The economic benefits of adopting cloud

computing are likely to make this adaptation worthwhile, but customers would still like to make any necessary architecture evolution as painless as possible.

With Acadia, the VCE coalition seeks to offer customers a path to cloud computing that incurs the lowest possible risk. The coalition hopes that Acadia will be recognized as a center of expertise in cloud computing principles, capable of identifying the key technical challenges and plotting out the best way to overcome them. Cisco, EMC, and VMware perceive that the IT industry is consolidating, and that the business of the major systems providers is being driven increasingly by vertical integration, with a growing focus on services-led engagements. The VCE coalition is therefore presenting itself as a horizontally oriented alternative, somewhat akin to the classic "Wintel" alliance between Microsoft and Intel, whereby Cisco and EMC provide the hardware building blocks, and VMware provides the operating environment. The coalition's long-term goal is to enable a franchise distribution model for everyone above that layer – i.e., systems integrators and channel partners – that will be similar to the classic PC industry.

The IDEAS Bottom Line

At present, each of the VCE companies expects to do business the same way as before. The alliance members describe their positioning like two sides of a menu in a restaurant: One side will be "à la carte," allowing customers to pick Cisco networking and another storage box, or VMware with another server or storage vendor. The other side, designed by the VCE coalition and based on vBlock systems, will be "prix fixe," containing specifically chosen configurations that are pre-integrated and incur the lowest possible risk for customers trying to adopt cloud computing. The VCE coalition reports that it has seen at least 40 to 45% operating expense reduction

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IDEAS Predictions for the IT Industry in 2010

As the decade turns, several forces are shaping the IT industry in a number of areas, driven by technical developments in server design, virtualization, and cloud computing, and by business conditions related to energy consumption and personnel costs. IDEAS analysts recently conferred to identify the top industry trends that are poised to play out in 2010. The following are IDEAS top 10 predictions for next year:

More mergers, acquisitions, and alliances will occur as the industry continues its consolidation

Driven by business conditions and strategic shifts, 2010 will see an unprecedented number of alliances, mergers and acquisitions, even as new suppliers appear on the scene. Vendors from some emerging geographies will certainly continue to step up their presence in the global market, including Huawei in China, and various systems integrators based in India. However, the fact that few companies today can deliver, service, and manage a complete solution will drive many of the established players together in various configurations. IT is moving beyond selling components to "delivering IT as a service."

IDEAS expects to see surprising moves, some of which are opportunistic, but others due to strategic shifts in response to competitive realignments. These developments could include Dell buying Unisys for its services capabilities; Microsoft buying Unisys or possibly NetApp as a response to Oracle's entry into the hardware market; HP buying SUSE, and/or IBM buying Red Hat in response to Oracle refocusing on Solaris as its preferred deployment platform; and Fujitsu partnering with Dell. We also expect a number of "defensive purchases" as companies like IBM, HP and Oracle buy up companies to keep them out of the hands of competitors.

Regardless of the economy, demand for server systems will rebound due to technology advances and pent-up demand

Rather than lead to stagnation in server sales, the economic slowdown may actually accelerate technology deployment as businesses seek greater efficiencies in their operations. Server deployment may actually pick up in 2010 due to pent-up demand after the cautious expenditure reductions over the past year. Increasing per-chip performance, primarily through multicore and multithreading, will grow per-server performance faster than the economy-constrained growth of individual applications. Virtualization will continue to facilitate server consolidation, permitting fewer, more powerful, servers to efficiently satisfy workloads and thus reduce server sprawl, and attain operational staffing efficiencies. As organizations pursue these benefits, they will install new servers that are optimized for virtualization, with multi-core processors and the large memory ranges needed for hosting many virtual machines.

Organizations will increasingly mandate that all new applications be deployed in a virtualized environment. Virtual Desktop Infrastructure (VDI), in which some desktop computing state is shifted to servers and accessed remotely by end users, will also increase demand for servers. Companies that do not make their IT more efficient will find themselves at a competitive disadvantage; hence, many will invest in acquiring server technology (as well as storage and networking) to pursue the benefits of redesigning their datacenters and slashing management costs. As the economy recovers, companies that streamline their business processes in a way that maximizes use of IT will gain a competitive advantage over those that have concentrated only on cutting costs.

x86 servers will continue their drive into the datacenter, scaling with clustering rather than SMP

The sharp increase in performance of Intel's Nehalem processor will accelerate the use of x86 servers for hosting enterprise-level workloads, while organizations attempt to simplify their software portfolios by standardizing on industry-standard operating systems like Linux and Windows. However, x86 servers will not take on the same characteristics as the "big-iron" systems that traditionally made up the heart of datacenters (i.e., huge, monolithic servers with large numbers of processors in Shared Memory Processing [SMP] configurations and advanced Reliability, Availability, and Serviceability [RAS] functions for ensuring that the systems keep running in the event of component failure). Instead, the size of x86 servers will be limited to four-socket form factors, as the business case for larger SMP systems based on x86 has not materialized.

In general, scalability in systems will increasingly be achieved by scaling out with clustering software, not just in servers, but also in storage systems. Clustering will also become the primary means for maintaining availability, with diminishing interest in hardware-based RAS features. The semi-annual TOP500 list of the world's fastest High Performance Computing [HPC] systems reveals the overall trends in this direction. Years ago, users needing the utmost performance sought specially

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Server deployment may actually pick up in 2010 due to pent-up demand after the cautious expenditure reductions over the past year.

designed hardware (vector servers, etc.), typically with sophisticated “near flat” memory subsystems (along with proprietary low-latency/high-bandwidth interconnects), in order to attack grand-challenge problems. But, as HPC-optimized design became too costly, today’s supercomputing users migrated to clusters of high-volume servers and standardized interconnects, aided by operating system and HPC application awareness of Non-Uniform Memory Access (NUMA) and clustering.

Commercial computing is likely to follow the trail blazed by HPC. Server consolidation, especially via virtualization, is a preparatory stepping stone along the path to deploying those workloads on clusters of modestly performing, attractively low-cost, servers. Large applications that were traditionally tuned for high-end SMP systems with NUMA characteristics will typically also work well within a cluster. Virtualized application workloads that work well on consolidation servers will likely also work well in “cloud” environments employing standardized images. Thus, workloads that now seem best deployed on a large (albeit NUMA) consolidation server, are candidates for redeployment on clusters with cloud characteristics, be it initially on “private” cloud infrastructure hosted internally, or eventually on “public” third-party cloud services.

Green marketing hype will subside as the issue matures; “Efficient IT” will replace “Green Computing” as a priority for IT managers

“Green Computing” as a buzzword will gradually subside as people tire of marketing that associates “green” with everything. A new term, “Efficient IT,” will gradually replace “Green Computing” as an industry priority. This term will capture energy efficiency as well as operational considerations, including maximum compute density within a physical server footprint resulting from multicore processors; storage optimizations such as de-duplication;

and integrated packaging of compute, storage, and networking. For most organizations around the world, green practices will remain a high priority, and regulations and carbon trading schemes will make green computing a governance issue in most developed countries. Corporate executives will be highly focused on environmental goals for the overall corporation, but it will be the procurement and supply chain departments that assume the worry about the broader “green” aspect of the company. For these constituencies, the priority will not just be “green IT,” but “green everything,” including transportation and facilities.

Departmental-level IT managers, though, will focus more narrowly on managing constraints in power and cooling. “Green IT” will become a derivative benefit of tactics that reduce the environmental footprint, such as consolidation and virtualization. Indeed, for a growing number of IT shops, power consumption has surpassed performance as one of the primary reasons to upgrade. In the past, servers usually required an upgrade or replacement when they ran out performance, while storage had to be replaced when it ran out of disk space. Now, local power restrictions could stop the implementation of a planned business-critical IT expansion, requiring a re-examination of the entire IT infrastructure. By redesigning the datacenter to reduce the power consumption envelope, these IT managers are creating efficient IT that meets the computing needs of the corporation, as well as its green environmental goals.

Server form factors will progress from towers and racks to integrated systems containing storage systems, network topologies, and multiple compute nodes

Organizations will increasingly pursue scalability by aggressively scaling “out”— i.e., spreading workloads across

vast numbers of operating systems instances, many of which will run in virtual machines stacked on top of multicore processors. To accommodate all of these processors and OS instances, traditional towers and rackmounted servers will gradually give way to other packaging that optimizes the hardware footprint for space, power, and cooling constraints. Since the reliability of workloads deployed in these environments is typically handled in software, RAS features are being pulled from the hardware, pushing the cost of server hardware to a new low. As a result, server hardware will truly become “commodity” in 2010, with much of the added value shifting from server designs to software and services, especially in the area of server management.

Indeed, some of the very largest companies with web-centric workloads, such as Google, have moved away from using off-the-shelf hardware. Instead, these companies deploy vast quantities of unbranded “white box” servers that are ultra-cheap and easily replaced, designed to host scale-out workloads based on proprietary software. Some leading systems vendors are replicating these characteristics in server products with specialized form factors, such as IBM with its iDataPlex platform, which is targeted at organizations that are at the “top of the pyramid” in terms of their scale-out requirements. As popular new web services continue to appear (like Twitter in 2009), and established services continue to grow their user bases (i.e., Facebook), demand will remain for specialized hardware that is super-optimized for web workloads with huge numbers of parallel tasks.

Meanwhile, more modestly-sized companies are planning next-generation datacenters based on scaling out and virtualization, with the goal of eventually adopting cloud computing. These users are finding that the complexity of deploying virtual infrastructure

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can be overwhelming. Assembling all of the components needed to fully deliver the benefits of virtualization requires expertise in servers, software (operating systems and virtualization), storage, and networking, which can be a challenge for organizations in which administrators often reside in different management "silos." Some systems vendors are responding with integrated solutions that combine multiple layers of IT infrastructure, including servers (sometimes based on blades), storage, networking, and software into a single package that can be managed as a unit. In some products, such as Cisco Unified Computing System (UCS) and HP BladeSystem Matrix, the systems include a converged fabric that enables the connections between servers, storage, and networks to be reconfigured easily. Other solutions, such as Oracle's Exadata, integrate database software with advanced storage functions based on Solid State Disks (SSD).

All of these systems contain technology that would be considered proprietary, compared to standard off-the-shelf x86 servers. However, they appeal to some users who are willing to accept a commitment to unique platforms in exchange for their simplicity, which promises lower operational costs. As with previous platforms that became successful through similar levels of integration, such as IBM's venerable AS/400 (now called IBM i), the "unified computing" approach could resonate most in mid-sized organizations. These organizations have the need for datacenter capabilities, but lack the depth of personnel to manage complex new datacenter functions such as virtual infrastructure. In 2010, the success of Cisco UCS will be a key indicator of the potential for these solutions, since it is being used as a lever for the company to enter the brutally competitive server market. If Cisco's system shows measurable adoption against all of the odds stacked against it, other server vendors will respond more aggressively with their own integrated offerings, and

some other large software vendors (such as Microsoft) may even jump in with their own hardware offerings.

Virtualization will remain a key priority for users; server virtualization will converge with storage and network virtualization

Virtualization will remain a major trend across the IT industry, as users pursue the many proven benefits of virtual machines, which include improved resource utilization and reduced hardware footprint (which in turn lower hardware acquisition costs); lower power and cooling requirements; legacy application support; improved test/development processes, responsiveness, and agility; and simplified resource provisioning and High Availability (HA)/Disaster Recovery (DR).

While virtual machines grant workloads independence from physical hardware, the hosts on which virtual machine are deployed still require physical connections to networks and storage. As virtualization takes hold at every level of IT, administrators will want to extend the benefits of virtualization to the I/O components of their physical systems as well. A rapidly developing form of virtualization is I/O infrastructure virtualization, which applies virtualization functions to storage and networking infrastructure (i.e., the SAN/LAN channels that connect workloads with the outside world and feed them data). I/O infrastructure virtualization introduces a layer of abstraction that decouples servers from the details about physical LANs and SANs in the same way that virtual machines decouple operating systems from the details about physical hardware. As a result, storage and network resources can be dynamically allocated to applications as needed with minimal intervention by the administrators who are responsible for managing storage and network infrastructure. Ultimately, I/O infrastructure virtualization will allow servers, storage, and networking to be

treated as a single pool of resources that can be allocated to workloads on demand.

The I/O infrastructure virtualization space will continue to evolve very rapidly throughout 2010, and the stakes are high for vendors to chart out positions in what could be the most dramatic restructuring of datacenter infrastructures since the arrival of PCs and client-server computing in the 1980s. Cisco is charging hard into datacenters with the Stateless Computing functions in its UCS platform, going up against Virtual Connect Flex-10 in HP's BladeSystem. Other technologies to watch in this space include Fujitsu ServerView Virtual-I/O Manager (VIOM), IBM Open Fabric Manager, and Dell's new Advanced Infrastructure Manager, which is based on technology from Scalent.

System software functions will fragment as the hypervisor takes control of physical resources; heterogeneous virtualization management will become a requirement

As virtualization takes hold across the industry, the operating system will slowly begin to lose its grip on IT as the center of the software universe. Virtualization shifts control of computing resources from operating systems to hypervisors. Some speculation has arisen that pure virtual appliances – in which applications are coupled with trimmed-down Just Enough OS (JEOS) operating systems – could eventually become the preferred container for deploying and managing workloads on virtual infrastructure. In this vision, standard operating systems would no longer define how applications are deployed, or how computing resources are assigned to applications. Instead, the OS would be relegated to a secondary role, beholden to the requirements of specific applications. If such a management perspective gains critical mass, system administrators

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will gradually care less and less about managing the operating system itself, but will focus instead on managing virtual infrastructure in a manner that best meets the needs of applications. A detailed mapping of the relationships between workloads, applications and lower-level resources will be essential for enabling this style of operation.

It is premature to declare the death of the operating system as a strategic driver in the IT industry, and the virtual appliance/JEOS concept has yet to break out of niche use cases (such as distributing trial versions of software). However, virtualization will clearly change the way that operating systems – including standard OS platforms such as Windows and the leading Linux systems – are configured and installed. Technologies such as rPath and EMC's recently acquired FastScale will become critical in helping administrators provision the software that is necessary to make virtual machines useful for production.

In the meantime, heated competition will continue unabated between the leading virtualization platform providers, as users increasingly consider Microsoft Hyper-V as an alternative to VMware; Citrix sustains its momentum with VDI, and Oracle consolidates its various acquired technologies into a coherent virtualization platform. Much of the competitive focus will be on the perceived tradeoffs in the cost of ownership of these platforms, while actual differentiation in value will shift up the stack from the hypervisor to virtualization management functions. As users apply virtualization to more and more workloads – some of which span multiple departments or business units – they will inherently deploy different virtualization technologies. Therefore, support for heterogeneous virtualization platforms will become a key requirement for virtualization management platforms. The ability to manage different virtualization technologies will allow tools to bridge the organizational and

technology silos that currently prevail in many customer infrastructures, and ultimately open pathways to external cloud resources. Microsoft's System Center Virtual Machine Manager (VMM) platform already supports VMware now, so VMware will have to add the ability for VCenter Server to manage Hyper-V, and perhaps other hypervisors.

Organizations will focus on fully virtualized internal infrastructure (i.e., "secure" clouds)

Despite continued fascination with the prospect of tapping into third-party computing infrastructures, the most pressing concern for the majority of users will be to virtualize as much as possible of their internal infrastructure into what might be called "secure" or "private" clouds. Indeed, for many users (especially in large organizations) "cloud" currently implies nothing more than converging virtualized server, storage, and network resources into a single pool that workloads can draw upon as needed. IT managers will put a greater focus on measuring resource consumption, in some cases to implement internal chargeback processes. Deeper accounting of computing resources will also help managers prepare for the adoption of third-party cloud services, since it will allow them to more precisely compare the costs of external versus internal consumption by user or workload.

The core technology for supporting these pooled resources consists of virtual I/O infrastructure and virtualization management platforms. A huge battle will erupt over which company controls these functions in the new datacenters being rolled out. Traditional companies with management suites such as IBM, Microsoft, HP, CA, and Dell will be challenged by newcomers in the virtualization and networking space like Cisco, EMC, Novell, and VMware. This battle for control of next-generation

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In 2010, the transition to external cloud computing resources will happen incrementally: first for "cloud bursting," in which workload spikes are absorbed by temporarily taking on third-party computing resource, and then for selective re-hosting of non-critical workloads.



datacenters will rage for years and create many casualties.

Public clouds will initially be limited to startups and temporary deployments for some workloads in larger organizations

With the rise of third-party cloud computing services such as Amazon EC2, some companies may now be able to take advantage of outside cloud services, or applications hosted in Software as a Service (SaaS) offerings. For example, startups will use cloud-based services to minimize costs and accelerate time to market, while small companies may move routine workloads such as e-mail to SaaS for cost savings. However, most mid-sized and large enterprise companies will only gradually start to deploy production workloads on third-party cloud services. Right now, these users are concerned primarily with adopting virtual infrastructure inside their organizations, while they plan a future transition to public cloud infrastructures. In 2010, the transition to external cloud computing resources will happen incrementally: first for "cloud bursting," in which workload spikes are absorbed by temporarily taking on third-party computing resource, and then for selective re-hosting of non-critical workloads.

IT administrator roles will become more specialized and command higher salaries

Personnel costs will become as great a concern in 2010 as power and cooling restrictions were in 2009. IT labor costs have been creeping higher in recent years, and now comprise a significant percentage of the overall IT spending. Any project that streamlines IT management and cuts labor costs will be seriously considered. However, support personnel who set up and maintain clouds need to be more rounded, and skill sets that traditionally fell into separate silos for servers, storage, software, and networking,

need to converge. Few people have such converged skills today, and those that do have them will demand – and get – high salaries. While rising salaries will be a concern in the short term, these investments will eventually pay off through efficiency improvements, as smaller numbers of administrators will be required to manage larger measures of computing resources of all types, including servers, storage, and networking.

The IDEAS Bottom Line

IT is about to get very complex as a result of consolidation and virtualization. For much of the market, the traditional definition of a "server" will begin morphing into a "server appliance," where the appliance addresses one small area very well and very economically. This transition will require the complete re-thinking of questions such as "what is an operating system?" and "what is a processor?" Vendors who control parts of the IT stack today may not be the ones that control tomorrow's IT stack. Whereas in the past users simply bought a server and loaded applications on it, now they must design and build a complex virtualization infrastructure to meet their needs. Even though IT customers will save money on hardware and software purchases due to prices being driven down rapidly, they will need to spend more for integration services. At the same time, IT vendors will step up their promotion of services as a key means to maintain account control in an increasingly competitive market. The net result could be even higher spending for the average IT shop. That in turn could cause more IT managers to take a second look at SaaS or outsourcing, and ultimately promote cloud computing to one of the central business questions facing managers. 2010 will be the turning point in which organizations begin to confront some fundamental questions of where and how IT should be implemented. ■

VCE Coalition . . . continued from page 3

in the first two accounts that deployed the "prix fixe" option – i.e. treating the vBlock as the smallest component of infrastructure (rather than a combination of server, storage, and networking components) and then implementing unified infrastructure management on top of those vBlocks.

As with all alliances, achieving seamless, unified support and accountability for customers will present a significant challenge for the VCE Coalition. During the announcement, Cisco CEO John Chambers admitted that the odds of success for mergers were at best 10%, and that the odds were even lower for alliances. The VCE members have not yet produced any hard data backing their cost savings claims, and pricing and configuration details for vBlocks have not yet been released. Still, VCE's promise of simplification is alluring to many customers who are genuinely grappling with the challenge of embracing virtual infrastructure across a diverse range of x86 platforms. Moreover, Acacia's claims of intellectual credibility will be taken seriously as a result of the technical leadership of Cisco, EMC, and VMware in their respective markets. Many users will watch Acacia's development with interest, even if they continue to purchase virtualization products separately from each vendor. However, VCE may give some large and conservative organizations, which recognize the economic benefits of cloud computing but have the most to lose from missteps in execution, the confidence needed for the critical first step toward its adoption. Should the VCE alliance succeed in capturing a few of these customers in key verticals, it could start putting pressure on other players in the industry to confront the multivendor and multidisciplinary perspective that cloud computing inherently demands. ■

IDEAS Insights

Blog Bites (<http://www.ideasint.blogs.com>)

The **empirical evidence** indicates that **cloud computing** has also increasingly become part of **day-to-day office language** as managers consider the **marketing claims** about its promised benefits. Some businesses may have already **started to adopt** cloud computing to save on IT cost, and hence are already convinced of the **pricing benefits**.

From “Empirically Tracking Interest in IT Trends”

Chris Gaun | December 3, 2009

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Following **HP’s announcement** . . . that it would **acquire 3Com**, speculation has arisen that **more acquisitions** related to storage and networking **could happen soon**, possibly including HP’s absorption of **3PAR or Pillar**. Another leading network company, **Brocade**, issued a **denial that it was for sale**, which nonetheless raises questions about whether its products and technology would **fit well** into a larger company.

From “After HP’s Acquisition of 3Com, What’s Next for Storage and Network Virtualization?”

Tony Iams | November 19, 2009

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Season's Greetings

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