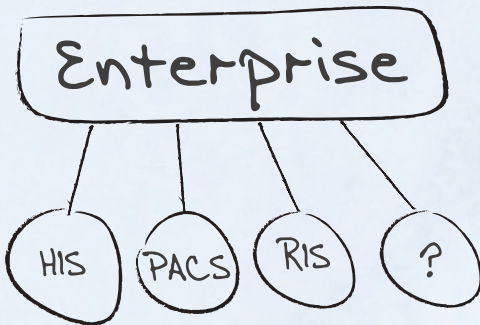


Health Imaging & IT

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N.J. Teaching Hospital Parlays Cardiology & IT Partnership into New Business Model

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N.J. TEACHING HOSPITAL PARLAYS Cardiology & IT Partnership INTO NEW BUSINESS MODEL

Cooper University Hospital has quietly redefined the hospital IT business model. Toward the end of 2009, the Camden, N.J.-based academic medical center chose a new model that pairs VMware vSphere™ 4 server virtualization with a robust McKesson cardiovascular information system (CVIS) architecture as well as a solid partnership with both vendors to deliver profound clinical and IT benefits. “This is the future,” opines Cooper CTO Paul Shenenberger.



On the IT side, the model packs a one-two punch that begins with the basics such as lower costs and accelerated deployment. At the next level, the approach allows the IT department to focus on proactive value-added service to the hospital such as knowledge leadership. At the same time, McKesson's Horizon Cardiology™ CVIS propels the cardiology department into the digital age, providing instant anytime/anywhere access to echo studies and enabling a more efficient and competitive approach for the Cooper Heart Institute. VMware vSphere™ 4 server virtualization delivers additional value; the platform minimizes IT ownership costs, provides the flexibility to efficiently ramp up applications and helps the IT department to employ a proactive service-oriented business model.

ESSENTIAL INFRASTRUCTURE

Cooper University Hospital was ideally positioned to become the first site in the nation to successfully deploy a CVIS in a virtualized server environment. In doing so, the hospital became a pioneer, running the mission-critical tier 1 CVIS on VMware vSphere server virtualization. Most importantly, its IT department operates in partnership with clinical departments. That is, as clinical departments build proposals

for new IT investments, they begin the process with a score card detailing clinical requirements. Next, the clinical department presents the IT shop with two or three viable vendor options. In the final stages, IT takes the lead, ensuring that enterprise IT requirements are met while handling negotiations with the vendors.

As the hospital nudged forward on its CVIS project, IT was in the early stage of transitioning from a traditional server environment to a virtualized server environment. The traditional server environment, Shenenberger says, seemed to have run its course. In fact, the universal challenges of power, space and cooling had nearly forced the hospital to consider purchasing power off the street to increase capacity. “It would have been very expensive,” asserts Shenenberger. Instead, Cooper University Hospital embraced the green model and decided to leverage virtualization to conserve electricity. In this model, the hospital strongly prefers clinical applications with virtualization support in the server side. As the IT department analyzed the server virtualization market, it became apparent that VMware led the field, says CIO Michael Sinno. “We wanted a robust, best-of-breed solution,” explains Shenenberger. vSphere fit the bill, offering the functionality and features the project required. What's more, VMware delivered a strong business partnership, providing key

engineering resources to Cooper University Hospital and McKesson to ensure a successful project implementation.

The traditional server configuration ties a single server to each application, creating massive server warehouses in organizations such as hospitals. Virtualization negates the one-server/one-application model. Virtualization software creates a virtual machine that operates multiple operating systems with multiple clinical applications on a single computer, which extends IT resources and simplifies IT management.

As IT built the case for virtualization, cardiology continued to press the clinical and business case for a CVIS. “We had a decentralized, analog-based model for echo study review. It was one of the few areas where the hospital was not cutting-edge,” recalls Sinno. Cardiologists were stuck in the inefficient videotape era, which meant couriers STAT studies among five hospital sites. A CVIS deployment promised to transform workflow and patient care with physicians able to instantly review studies almost anywhere. On the business side, increased productivity could allow cardiologists to meet pent-up demand for additional cardiac imaging studies.

In early 2009, the hospital gave the cardiology CVIS project the green light and it became the pilot project for server virtualization. After the clinical department created its score card and narrowed potential CVIS vendors to two, IT took the lead role in the project. “The hospital was aiming for a strategic enterprise view of IT with virtualized servers and standardized shared storage. We knew vendors would have to comply and fit to our architecture [which differs from the traditional model where the hospital adapts to the vendors’ requirements],” stated Sinno.

The virtualization model proved to be a bit challenging to some cardiology PACS vendors. The hospital wanted the best partner in terms of enterprise architecture because it lowers the hospital’s total cost of ownership. Vendors, however, needed to be convinced. “We had to communicate the value of the virtualized model, demonstrating that it works and we could support it,” says Shenenberger. In the model, the vendor shares standards and specifications with the hospital, and the hospital brings the tech vendors to the table to create a solution that contains costs and simplifies service.

The relatively new virtualized server model required that Cooper University Hospital select a strategic partner. After a careful vetting process, McKesson Corporation proved that it could deliver the right clinical applications and commit to the proactive enterprise model. On the server virtualization side, VMware embraced the model and offered the necessary solutions and engineering know-how.

DELIVERING THE GOODS

Prior to the deployment of Horizon Cardiology, Cooper cardiologists toiled in a 20th century workflow model characterized by tape-based inefficiency. Just days after going live with CVIS, the benefits of the new model became apparent. A patient presented at a remote site, requiring a STAT echo before chemotherapy the next day. The technologist made one quick call to the main hospital, and within 10 minutes the study was read and reported. There was no need for a courier or an extensive wait, and the patient left the appointment satisfied and confident in the care.

The benefits are clear at the macro level, too. A few weeks into the deployment, Maritza Cotto, MD, director of noninvasive imaging, completed a direct comparison of echo reading time with videotape and on Horizon Cardiology. “I reduced my reading time by close to 50 percent,” Cotto says. In addition, patient care is expedited with Horizon Cardiology available on workstations on the hospital floor; cardiologists can peek at a study to make a clinical decision and progress to the next step in the care process. The hospital’s next step is to advertise and schedule patients to capture pent-up demand for echo studies.

The clinical advantages and increased productivity are critical, but they are only part of the equation. According to Forrester Research, IT organizations spend more than 70 percent of their resources on maintenance, leaving less than 30 percent for value-added and strategic projects. Cooper University Hospital defies the data. Solutions like server virtualization are part of a continuous loop, where IT focuses on knowledge leadership and vendor relationships rather than deployment and maintenance. “Our analysts are able to focus on optimizing applications. In fact, we measure technology results by factors such as the benefits the hospital derives from a project like improved workflow or better patient care rather than meeting the schedule on time or delivering the project on budget,” explains Sinno.

The ability to maintain a high level, value-added IT operation is critical to Cooper University Hospital; however, tangible IT benefits are important, too. Again, the McKesson/VMware partnership delivers. Electricity costs to run and cool the system are lower, and CPUs are well-utilized with servers running applications in an organized and efficient manner. For example, a single server runs Horizon Cardiology during the day and billing at night, eliminating the need for separate servers. It also translates into less idle CPU time and a smaller footprint. Deployment is simpler, too. In the traditional server model, the vendor builds and ships servers and the hospital completes security checks. It is a process that takes weeks and adds thousands in costs. In the VMware server model, the procurement and vetting of a new server takes minutes, which means that the tech department can scale to capacity within minutes.

On the business continuity side, the VMware virtualization environment streamlines replication; after a disaster, the system can be recovered in 8 to 12 hours vs. 48 to 72 hours in a traditional model. Plus, virtualization eliminates the need to duplicate hardware at a second location, which cuts costs. The model also enhances efficiency. For example, enterprise architecture and a virtualized test environment streamline and accelerate upgrades. And with VMware vSphere, the department can complete a technology refresh without taking the system down.

MOVING AHEAD

The investment in Horizon Cardiology and VMware server virtualization will continue to pay off for Cooper University Hospital well into the future. “We’ll see these benefits again and again,” notes Shenenberger. In addition, the ultra-successful pilot provides a great blueprint for future projects. “Other CIOs are looking to engage vendors in this way,” sums Sinno. The arrangement represents a new model that is certain to leap from bleeding-edge to leading-edge and widespread adoption in the next few years. 