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## Final Copy of Case Study

**YEAR:**  
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**STATUS:**  
*Laureate*

**Organization:**  
Seattle Children's Hospital

**Organization URL:**  
[www.seattlechildrens.org/](http://www.seattlechildrens.org/)

**Project Name:**  
At the Heart of Seattle Children's Mission-Critical VDI Deployment Pump Hitachi Storage Technologies

**What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?**

Three words capture the focus of Seattle Children's: hope, care, cure. Ranked among America's best children's hospitals by U.S. News & World Report magazine, Seattle Children's provides world-class clinical care with nearly 60 pediatric subspecialties and is internationally recognized for pioneering pediatric medical research and achieving extensive grant funding. Seattle Children's is an exceedingly progressive healthcare organization, delivering the utmost critical services and diagnostics. Ensuring uninterrupted access to its information is equally vital. Patient records, cutting-edge research data and transactional accounts must be available anywhere, anytime across this constantly changing and growing healthcare entity. The IT department at Seattle Children's supports more than 800 server systems, both physical and virtual, and applications dedicated to the unique nature of medical subspecialties. Additionally, IT manages a 5,500-strong personal computer environment and the data for the hospital's overarching operational systems, including Cerner clinical, Epic revenue and patient systems, GE picture archiving and communication systems (PACS), and Microsoft Exchange Server. The organization has a primary data center as well as a smaller center used for proof-of-concept efforts and disaster recovery. To meet its goals as a one of America's best children's hospital, Seattle Children's need to update their IT infrastructure to ensure that they could operate a dynamic 24/7 environment with zero disruptions to customers. When the IT department embarked upon an enterprise-wide virtual desktop infrastructure (VDI) strategy, the goal was to incorporate best-of-

class hardware, software and networking gear to ensure a flawless deployment. Because of the importance of the data it collected, Seattle Children's needed to ensure the project would deliver rock-solid reliability for the VDI initiative as well as future data.

**Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.**

Seattle Children's chose best in class for all components. Cisco SAN switch fabrics, including Cisco MDS 9509 Multilayer Directors, and end-to-end Citrix VDI components from hypervisor to virtual image, including XenDesktop and XenServer, lay the foundation for a high-performance virtualization environment. For storage they installed Hitachi Virtual Storage Platform (VSP) in its primary data center to function as the centralized storage solution. To simplify the Seattle Children's Citrix VDI server environment, which requires both block (SAN) and file (NAS) based storage, the Hitachi NAS Platform (HNAS) 3080 cluster provides the dual-enterprise support capability via a single platform. Hitachi Virtual Storage Platform provides 3-D scaling to dynamically scale up, out and deep. VSP uses Hitachi Dynamic Tiering to manage external storage resources as a whole and dynamically move data throughout virtual tiered storage for block, file and content data. Combined with Hitachi Command Suite v7, which delivers a comprehensive management suite for this environment, VSP helps Seattle Children's unify and simplify administrative tasks across the storage enterprise for the highest levels of operational efficiency. "Now, we can scale extensively and simply, going deep by externalizing storage, wide with our drive count and up for performance with the capabilities of the processors. And the Virtual Storage Platform lets us go to very granular levels so we can grow as needed and better meet planning horizons and grow to meet future needs," says Wes Wright, vice president and chief technology officer at Seattle Children's.

**Please list the specific humanitarian benefits the project has yielded so far.**

The system has resulted in 50% less cooling and power consumption costs reducing the hospital's environmental footprint. Also from a cost-efficiency perspective, the biggest returns so far have been on operational costs, such as maintenance and cost containment. Cost was not the only value. For the clinical staff and faculty, the virtual desktop has enabled a seamless mobile experience for their applications and data. Their desktop now follows them to any room, and any device can launch Internet Explorer and within seconds they are able to resume their work, precisely where they left it. With some added security layers, this desktop is also able to be resumed from outside of the corporate network through our remote access portal. This in turn results in better, more seamless care for the patients. In addition, since deploying the Hitachi solution, the Seattle Children's IT department has already realized many of its goals. "We wanted to ensure that we could operate a dynamic 24/7 environment with zero disruptions to our customers. With the previous environment, it was such a coordination effort to handle the effects of change. Now, we have a highly resilient and efficient IT enterprise that allows us to take on big changes without the worry of sustaining them. The VDI implementation has had a huge impact to our end users, and the Hitachi package is definitely part of that success," says Wright.

**Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.**

There has been significant positive feedback for the VDI project, particularly in recent months as it has reached a stable, mature status within the enterprise. Reports from staff include faster boot times, better response times, greater mobility and more free space (the devices are much smaller than a standard desktop PC). Many users report that since transitioning to a virtual desktop, they

access their applications from many more computers than they did previously. Highlights of the positive feedback received include: "My system is now fast as lightening, I hope all staff are eventually blessed with this upgrade. Thank you, Children's, for giving me the tools I need to do my job (fast) everyday!" "What I also Love, Love, Love is that when getting into VDI from home, it brings my sessions with me and it's exactly at home like it is here at work, and because I have broadband, the speed is the same there as it is here. This is the way to go. I'm on board, and I really appreciate this and many times cringe if I have to go to a non-VDI device (e.g., in a meeting room or something)."