

At Union Station Technology Center, Digital Innovation and Collaboration Put the Internet of Things at Center Stage

By *Bruce Hoard, Principal - Bruce Hoard Associates*

The Internet of Things (IoT) is often touted as a promise of digital innovation, but few companies have actually transitioned it into a working reality. Union Station Technology Center (USTC) has done just that.



Based in Northern Indiana, Union Station was once a thriving hub connecting people to the world via railcar. Now, USTC uses digital innovation in its cutting-edge data center to transport information rather than people.

Established in the mid-1980s, the company's carrier hotel and colocation data center model mirrors the IoT trend in a growing number of data centers toward using building automation systems (BAS) connected to IT infrastructures. One component is providing a basic IT infrastructure, including servers and other computer hardware with a dedicated Infrastructure, while the other is supporting an innovative ecosystem consisting of the physical structure and additional technologies that are required to run a dynamic data center operation, notes Vishal Singh, CTO and CIO of USTC.



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Those technologies include generators, uninterruptible power supplies, HVAC systems, liquid chiller loops, and all the power delivery and circuits required for the data center—along with the ability to measure power consumption on a customer-by-customer basis.

By connecting and integrating diverse technology system infrastructures with physical building infrastructures, as well as mobile devices, and internal and external people, USTC meets its goals of constantly improving the efficiency and reliability of mission critical systems. In fact, it maintains service level agreements (SLA) of 100% uptime to its customers.

Innovative Push Networking Technology Creates Rapid Response Times

Rapid response is critically important to USTC's data center tenants who negotiated aggressive SLAs that typically call for corrective actions in less than seven minutes. This is particularly challenging with USTC's mix of diverse IT infrastructures, along with the physical data center ecosystem. This heterogeneous

(Cont'd from Page 1)

conglomeration of infrastructures forced the company to create a homegrown IoT solution with an elevated level of integration, which opens innovative new avenues that were not technically or economically feasible in the past.

For example, USTC built intelligence into its systems that streamlines alert management, minimizes false alarms, and moves information from all these heterogeneous systems to a common platform that creates accurate, actionable intelligence for the company's Network Operations Center (NOC) and support organization to deliver corrective solutions.

"Before these changes, we often inadvertently learned from trial and error," Singh explains. "All of our systems—including power, chilling, and servers—had independent monitoring systems that fed to multiple destinations separately. Now, all sensors lead to a single system, and SLA response times have gone from 30-40 minutes to 5-10 minutes."

Escalation and notification is another significant innovation because USTC wants to maintain the speed of content and information delivery to relevant people, including external on-demand experts and vendors. To achieve this, a communications platform was created that sits on top of the IoT alerting system and provides a push networking capability based on e-mail, voice communications, and apps, Singh points out. "In this environment, by the time someone in the service organization gets a problem alert and starts organizing a conference call, the people responsible for providing a solution have already been automatically notified and proactively react in minutes. This creates more speed, redundancy, and accountability, and takes pressure off the NOC, which was previously vulnerable as a single point of failure."

Data Center Innovation Depends on Architecting Close Working Relationships

While USTC's IT and business were aligned on the key drivers needed to launch and develop this digital initiative, it was necessary to build the business units' trust in the accuracy of the computer-generated alerts versus the manually validated information delivered by the old system.

No matter how interesting or innovative a digital project may be, it is simultaneously challenging and potentially intimidating to many of the people who are working in its ambitious new environment, Singh explains. "There was an immense amount of collaboration, buy-in, and change management in terms of relying on the push notifications and IoT platforms to manage mission critical issues."

Looking back, Singh says USTC's biggest success was the ability to mobilize the resources needed to manage such a highly complex and automated system. By collaborating with various internal business units and utilizing the strengths of its vendors and other expert partners on demand—as opposed to hiring full-time personnel—the company was also able to manage costs effectively.

"There was never any kind of wall separating IT, the business unit groups, or the external partners," he says. "For us, it just became a turnkey solution, and these are the technology partners to do it. Everything just jelled into one team to deliver the solution."

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