

Company Brief

Health Care Organization Gets Proactive with Virtual Instruments

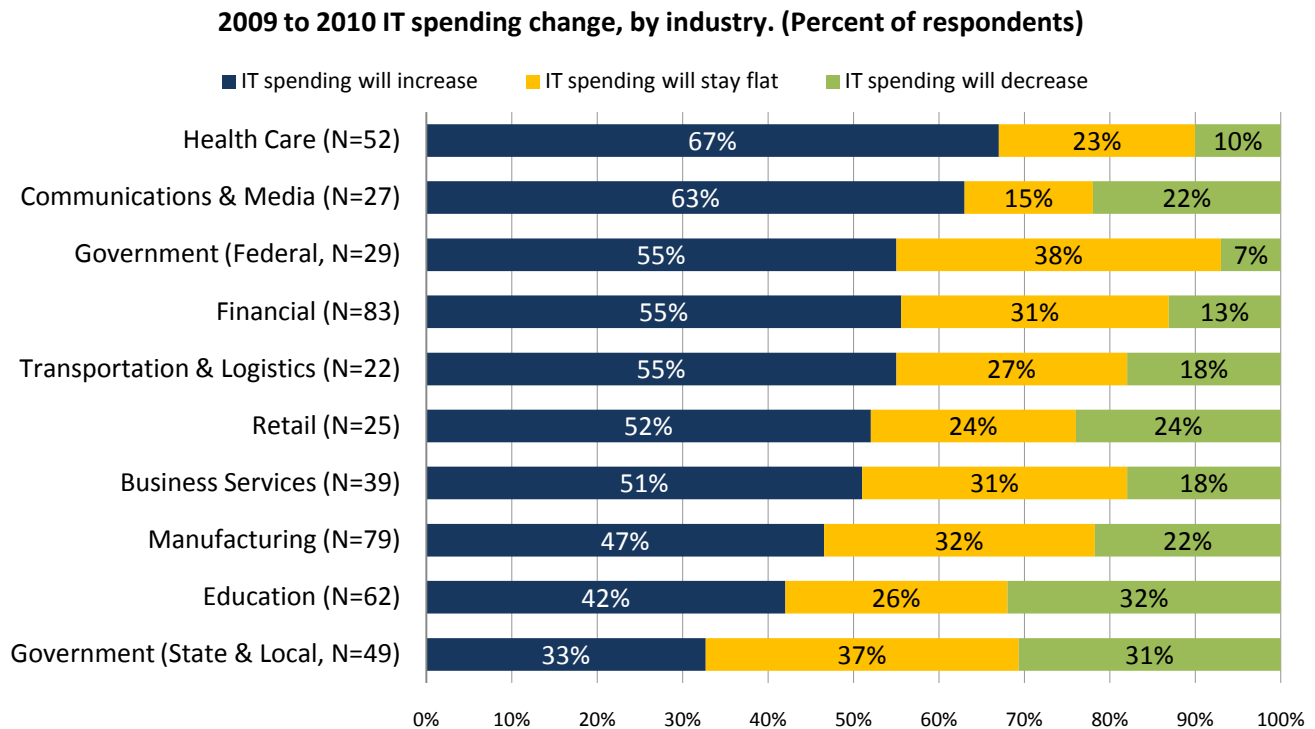
Date: November 2010 Author: Bob Laliberte, Senior Analyst

Abstract: *Plagued by frequent unplanned outages in a relatively simple SAN environment, a Texas health care facility turned to [Virtual Instruments](#) to provide the requisite insight and visibility for its new, much larger and complex virtualized SAN infrastructure. As a result, unplanned outages have been all but eliminated and the IT team is far more proactive, resolving issues before they impact the business.*

The Challenge

In 2008, when a 100+ year old health care organization in Texas experienced several multi-day unplanned SAN environment outages that impacted critical applications for surgical care and electronic medical records, its IT staff knew something had to change. Given the increased reliance on IT infrastructure to deliver quality service to its patients and the high growth rate of data, the situation would only get worse as the organization quickly outgrew its simple 16-port dual fabric SAN. It needed to make a sizeable investment in a larger, more complex SAN to accommodate data growth and the continuing digitization of medical records. ESG research reflects this trend as health care continues to outpace other industries in increased IT spend (see Figure 1).

Figure 1. IT Spending Change, by Industry



Source: Enterprise Strategy Group, 2010.

The old infrastructure was plagued with issues ranging from bad code loads, errant problems like a bad cable, and HBA or port to storage controller issues, all of which resulted in extended outages while IT staff tried to determine the cause of each individual issue. The organization could not afford to carry these problems into a new SAN environment.

Actions Taken

The first step involved bringing in new IT resources with the skills needed to build out a larger and more complex SAN environment. While researching and designing the new SAN, the IT manager witnessed a Virtual Instruments probe and its software in action at a training class. Impressed with the visibility the Virtual Instruments solution provided, the IT manager took two important steps. The first was leveraging what he considered to be a best practice in building a new SAN: insert Traffic Access Points (TAPs) into the new infrastructure. As he put it, “it’s not a matter of *if* you will have a problem, just *when*. So you might as well TAP all of the storage ports.”

Second, the organization invited Virtual Instruments in to perform a proof of concept (POC) on its newly tapped environment. Surprisingly, problems with several HBAs were found right away. Even though the issues were not service-impacting yet, left unchecked they would have caused an unplanned outage. Both the IT and executive teams recognized the value of having this level of insight and the ability to perform proactive management. Given that the new SAN environment would be supporting critical applications at a hospital, the ability to maximize availability is of the utmost importance. The solution was purchased and installed.

The “Must Have” Solution: Virtual Instruments

The organization’s reliance on the Virtual Instruments VirtualWisdom monitoring solution only increased as the SAN environment grew more complex and virtualization technologies were added at both the server and storage domains. The IT manager relies on the daily reports generated by VirtualWisdom and he always keeps the real-time dashboards open on his desktop.

This organization cited several instances where the Virtual instruments solution helped it proactively find and isolate a fault. Examples include:

- **Identifying and isolating intermittent faults.** The software routinely found intermittent problems caused by a bad or crimped cable or SFP that could quickly and easily be changed before it led to an unpredicted problem that would have impacted service in one of the surgical centers. By proactively finding the problem, it could be dealt with in a controlled manner during a scheduled outage.
- **Troubleshooting arrays deployed under a storage virtualization platform.** The new SAN infrastructure was built around an HDS USP-V virtualized storage platform and the existing IBM array was attached to it. As an example, during a firmware upgrade to the IBM array, the Virtual Instruments hardware and software detected a spike in performance on a subset of LUNs. Fortunately, with TAPs in place between the IBM array and HDS USP-V and the Virtual Instruments software monitoring it, the IT team was able to identify and isolate the problem at 3 pm. This allowed them to notify all impacted application owners of impending issues so they could begin to implement alternative procedures and initiate corrective actions. In this case, performance continued to degrade until 2 am when the drives finally shut down. Without this insight, troubleshooting would not have even begun until that point.
- **Visibility and fault isolation across end-to-end virtualized environments.** As this organization deployed server virtualization technologies, Virtual Instrument’s software provided additional value to the database and VM administrators by providing visibility into the SAN. This view enabled administrators to reduce provisioning times from 4-5 weeks to only 1-2 weeks and eliminated problems with network congestion and contention on a storage array. As our IT manager stated “The VMware guys love the Virtual Instruments solution; most are now addicted to it, keeping a window open on their desktops at all times.” It also provides some relief for the storage and networking teams. Since the VM administrators have a window into the SAN, there are no more phone calls complaining about the network or storage infrastructure—with a single glance, the server operations staff can determine where the problem resides.

Despite the health care industry increasing its IT spend, budgets are not unlimited and, like most IT shops, yearly budgets are reviewed line by line. Recently, when an executive suggested that funding for the Virtual Instruments maintenance contract be dropped, the IT team responded that if the Virtual Instruments solution went, so would they. It had become an integral part of their operation. Dropping it was not an option.

The Bigger Truth

As environments become more abstracted and grow more complex, it is even more critical to have solutions in place to make it easier to proactively manage them with fewer resources. Solutions that can be leveraged across multiple domains will deliver even more value and the costs can be distributed more evenly. As organizations continue to consolidate data centers and virtualize more of their infrastructure, they should consider deploying TAPs as an industry best practice and investigate solutions like those from Virtual Instruments to take advantage of the visibility provided from that access.

The health care organization ESG spoke to was able to transition from reactive, firefighting mode to a more proactive, predictive intervention mode by deploying TAPs throughout its new SAN environment and leveraging the VirtualWisdom virtual infrastructure optimization solution from Virtual Instruments. Armed with this end-to-end visibility, the organization's IT group is able to deliver higher levels of availability and optimize existing assets.