Every spring, millions of high school students across the U.S. roll up their sleeves to face a barrage of standardized tests. It can be a time of high anxiety for teenagers, but for Measurement Inc., the testing and certification company behind many of the exams, it is a time of year that tests the limits of their technology, of which their voice network is a critical part.
Measurement is a 600 person company spread across five buildings on their Durham, NC main campus, as well as satellite offices spanning several states. Not only does their voice system have to support this distributed work force reliably, it’s critical that their 58 person contact center survive occasional spikes in activity like the one in the busy spring high school testing season.

Measurement had been using equipment from 3Com for several years, but with the growth in their business, knew that it was time to look for a more modern solution that would see them through the next decade – they expect over 1000 devices to be connected to the voice network within a few years. In addition to reliability and scalability, total cost of ownership was important, and to that end they were wary of vendor lock-in.

**Taking virtual voice out of the lab**

But according to Ben Pryor, VMware Specialist at Measurement, the holy grail was to fold their voice network into their VMware datacenter. “I’d known VMware for a long time, and no one else offers the consolidation ratios or rich toolset they do.” So it was no surprise that when they decided to virtualize their datacenter in the summer of 2010, they went straight for a vSphere 4 deployment. They have over 60 virtual machines running in three clusters that run VMware administrative tools such as vSphere High Availability (HA). The benefits of virtualization have been profound, from space, utility and administrative savings to the disaster recovery inherent in being able to restore entire servers in minutes in the event of a failure or transparently move them between hardware using VMware vMotion™ for maintenance. In contrast, “restoring the voice network when something goes wrong was manual and slow. Voice is perhaps the most important part of our IT investment. We needed to change that,” adds Ben Weber, Production Manager at Measurement.

**Doing their homework**

They began their search for a new solution by looking at products from 3Com, Cisco, Shoretel, and Avaya, but none met all of their needs. For instance, none offered the seamless path past 1000 connected devices that they were looking for, either because of technical difficulties or prohibitive licensing. Failover options were also cumbersome. Shoretel, for example, would have required a switch in each of their remote locations as well as Durham. And support for virtualization was limited across the board. Pryor recalls that “none of the candidates could take advantage of our High Availability and Data Recovery tools, and we could not deploy them with other apps on the same virtual machine. A lot of the benefit was lost.” Not only that, they all required at least some additional hardware, so they could not realize the full value of consolidation in their datacenter.

**Seeing past the obvious to the right answer**

The search took a new turn, however, when ATCOM Business Technology Solutions, a consulting and solutions provider in Durham, suggested that they take a look at Mitel’s Virtual Solutions portfolio, including Virtual Mitel Communications Director (Virtual MCD), Virtual Mitel Application Suite (Virtual MAS), Virtual Mitel Border Gateway (Virtual MBG), Virtual Unified Communicator Advanced (Virtual UCA), and Virtual Contact Center Solutions (Virtual CCS). The Mitel portfolio includes a full set of business software applications for contact centers, teleworking, unified messaging, voicemail, and video and voice conferencing. Pryor admits that he was skeptical at first. After all, virtualizing voice has long been considered problematic; and resource usage, stability, and management overhead in the VMware environment were all unknowns. But ATCOM explained that Mitel’s virtual products were custom designed in partnership with VMware to overcome the technical issues that have plagued others, and ensure that it takes full advantage of the platform.

Measurement was intrigued and started a limited trial. The more they saw, the more they liked. VMware’s rich resource and performance reporting reassured them of just how light the Mitel solution is on their servers. In fact, they could run it side-by-side with print, mail, web, fax and other applications with no performance degradation.

**Keeping school open**

Kids love those unscheduled school closures caused by bad weather or other disasters. But Measurement won’t be contributing to their joy any time soon since they can also take full advantage of the powerful business continuity tools, like vSphere HA that makes VMware such a compelling solution for disaster recovery. And being a software-only solution meant that they would not be adding equipment to their datacenter – with all
the repeated efforts, such as duplicated failover and recovery plans that they entail. Weber stresses how important it is to consolidate critical business systems for continuity planning. “When we’ve had to recover systems using HA, it’s taken minutes to get back to a fully configured, running state. Rebuilding boxes from scratch would have been a disaster.”

New ways to connect
But sometimes the most compelling benefits are ones you were not even looking for, and this was the case with Virtual MCD’s support for SIP (Session Initiation Protocol), the standard behind most VOIP solutions on the Internet. All of the other Value Added Resellers would have limited them to traditional PRI (Primary Rate Interface) for connecting to the public system due to their lack of experience and confidence with SIP-based solutions. When Measurement discovered that they could use SIP, it let them literally redraw the map of their network for greater savings and robustness. Pryor explains that “PRI meant having to support a controller in each of our locations, all of which would be potential points of failure.” By contrast, since SIP connects over the standard IP protocol, they could route all offices through their backbone to the Virtual MCD in Durham, and from there to a provider via their standard Internet connection. But SIP offered other advantages for a business that can see dramatic spikes in phone traffic. Whereas provisioning new capacity in a PRI world involved long waits for a technician to come and install a new connection, SIP lets them add or remove lines in minutes with a simple phone call. “Mitel’s SIP support lets us adjust to changing business conditions in real time,” explains Pryor, “and that agility is critical for us to survive crunches.”

Applied learning
Great infrastructure may be the bones of a solid company, but it’s the applications that either empower or hold users back. With Virtual MAS, the application suite from Mitel, Measurement gained a range of integrated communications tools that help them streamline and manage workflows – even in their critical contact center.

They use Virtual Contact Center Solutions (Virtual CCS) to achieve the real-time and historic insight that lets them respond to day-by-day fluctuations and long term trends. As Weber notes, “The Virtual CCS application lets us quickly get to the bottom of service level issues.”

COMPANY
Measurement Inc. provides testing and certification services for public and private sector clients.

CHALLENGE
To improve the reliability, scalability and cost effectiveness of their voice system for the coming decade.

EVALUATION
Selected based on Mitel’s industry-leading support for true voice virtualization, cost effectiveness, simplicity and SIP support

CHOICE
• Virtual Mitel Communications Director (Virtual MCD)
• Virtual Mitel Application Suite (Virtual MAS)
• Virtual Contact Center Solutions (Virtual CCS)
• Virtual Mitel Border Gateway (Virtual MBG)
• Virtual Unified Communicator Advanced (Virtual UCA)
• VMware® vSphere 4™ virtualization platform
• VMware vMotion™ migration tool
• VMware Data Recovery™
• VMware High Availability™

REASONS
• Greatly enhanced reliability and cost-effective disaster recovery
• Market leading virtualization capabilities for voice
• Lower CapEx and OpEx costs

“Restoring the voice network when something goes wrong was manual and slow. It’s perhaps the most important part of our IT investment. We needed to change that.”

– Ben Weber, Program Manager Measurement Inc.
Mitel Teleworker lets their employees work remotely with full access to voice mail, conferencing, and other features of the office phone system.

And with Mitel Unified Messenger, Measurement’s users can access and manage their voicemail, email, and fax messages from their PCs or phones, and helps them simplify day-to-day tasks.

Measurement has also been pleased with the simplicity of the Mitel solution. With the help of ATCOM, they’ve been able to program the Virtual MCD to handle even the most challenging scenarios, and they can clearly see the day when they’ll take over the technical side of things completely. Weber summed their experience with Mitel up nicely: “The Virtual MCD has been a joy to work with. It’s simple, easy to integrate, and cost effective.”

Lessons learned
After going through their first busy season of spring testing with the new Mitel solution in their datacenter, Measurement is sure they have made the right decision. Weber recalls that Virtual MCD was critical to surviving unprecedented call volumes. “Mitel got us through a busy season that our old phone system would not have survived.”

Finding the right technology solution is a bit like student testing; Having a standard methodology and disciplined approach helps clarify both the questions and the answers. Measurement’s commitment to facts and analysis allowed them to see past their original options to a new approach to voice technology that solved unexpected problems. Mitel’s unique support for virtualization and SIP have given them the robustness and agility they need to face a future of promising growth. Class dismissed.

About Mitel
Mitel delivers flexibility and simplicity in smart unified communications solutions and applications for organizations of all sizes. Combined with a full range of managed services that include voice and data network design and traffic provisioning, custom application development, and attractive financing options, Mitel is reinventing how successful organizations gain competitive advantage by easily collaborating and communicating over distance and time with customers, colleagues and partners. Mitel’s (www.mitel.com) US headquarters are in Phoenix, Arizona. Global headquarters are in Ottawa, Canada, with offices, partners, and resellers worldwide.

About Measurement Inc.
Measurement Incorporated™ (MI) is a full-service educational company that provides achievement tests and scoring services for state governments, other testing companies, and various organizations. Since its founding, MI has earned and continues to uphold its reputation as the industry leader in providing professional handscoring services for essays and open-ended exams.

About ATCOM Business Technology Solutions
ATCOM, a Mitel Platinum partner, is a communication solutions provider and industry leader in business telecommunications and information technology (IT) solutions founded in 1979. With an expertise in Voice over Internet Protocol (VoIP), ATCOM works closely with each client to determine the best communication platform for their particular business plan, offering the deployment of business telephone systems, unified messaging systems, wireless solutions, LAN/WAN infrastructure/services, video conferencing, carrier network services for local and long distance, and structured cabling solutions for voice and data.