NORTEL

Nortel Education Solutions for Higher Education Institutions

Cut costs and support your institution's goals

Are you facing tough budget choices regarding what projects to fund? Are you under pressure to meet the needs of today's tech-savvy students? Are you being asked to deploy new technologies even though you're having a hard time maintaining your current infrastructure? Are you trying to help your institution meet its goals while making sure that your network is completely secure? Do you want to keep up to date with the latest technologies but need help justifying the expense? Are you facing new pressures on sustainability and the environment?

Higher education institutions are faced with exciting opportunities and some complex challenges. College and university leaders are under intense competition to attract students to their institution while facing budget cuts. Education decision-makers agree that technology is the enabler to transform learning and empower faculty and staff to be more effective, but they struggle to find the money and resources required to do it. Of course, it doesn't end there — college and university campuses must be safe; protecting students and resources is paramount.

Nortel's education vision for higher education institutions

Nortel is your best partner for delivering workforce education and training for the 21st century because we understand your challenges and what it takes to be successful. Nortel's education solutions offer innovative technologies, managed services and community initiatives that you need to lower total cost of ownership to fund IT projects, attract and retain students and faculty, empower faculty and staff to be more effective, and increase campus security.

The Nortel solution

Colleges and universities worldwide are choosing Nortel because we help our customers do the following:

- Lower Total Cost of Ownership and fund projects
- Attract and retain top-quality students and faculty
- Empower faculty and staff to be more effective
- Increase campus safety

More than 10,000 education customers worldwide have installed communications solutions from Nortel.

> "When we think about the needs of a new network, the main thing that we think about is that the network needs to serve the work habits, the learning habits, the social habits of our faculty and students. And we know that's a very converged network to serve all of them, wherever they are, using the devices through which they choose to work. What we see by going down this path with a converged network by Nortel and Microsoft is that it will enable new efficiencies in the provision of services." — **Brad Wheeler, CIO, Indiana University**

Lower Total Cost of Ownership and fund projects to achieve your institution's goals

When you upgrade your network infrastructure for your institution, you're not just reaping the benefits of new applications that your students want. What you get is an infrastructure that is secure, reliable, energy-efficient and saves you money both in the near term and for the life of the network.

Lower capital, maintenance and energy consumption = fund new project or save a job

According to independent testing by The Tolly Group (www.Tolly.com and Info Tech), Nortel's secure, reliable, voice-grade, energy-efficient IP communications infrastructure consumes up to 40 percent less energy and costs less than half as much to own and operate compared to the leading competitor.* Why waste money in an inefficient solution when you could use the savings to fund the distance learning project that you've been wanting to do or save an IT or faculty job? For example, using just 13 of Nortel's ERS 4548GT-PWR (48 ports, gigabit, PoE) saves the equivalent of a full salary including benefits. Use these savings to deploy new learning applications that will attract new students, which will in turn generate revenue over and above the savings Nortel offers.**
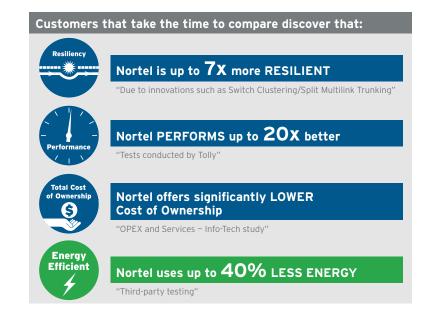
Managed Services

Through our Managed Services, Nortel will proactively manage and resolve any network issues before your faculty, staff and students experience them. We leverage support from hundreds of dedicated, trained and experienced managed services professionals, working from customer sites or in Nortel's regional Network Management Centers (NMCs). These teams manage voice, data, converged networks, wireless, multimedia services and virtual learning 24/7. Institutions can select only the services they need, when they need them and for how long they need them through a simple and predictable monthly pricing plan. Your can free up your IT personnel to work on new applications instead of fixing your old network all the time. Nortel's Managed Services will help you deploy new technologies successfully and quickly so that you can enhance the reputation of your institution.

Attract and retain top-quality students and faculty

If you truly want to attract top-notch faculty and increase your enrollment, you need a plan. This plan must include a secure, resilient and high-performance network infrastructure, mobility solution and virtual learning.

Secure, reliable and high-performing network

Nortel provides enabling infrastructure that offers the performance, security and resilience that you need now and will increasingly depend on to run your mission-critical network and communications applications. Nortel's infrastructure is proven to be seven times

Customers that take the time to compare discover that:

Resiliency

Nortel is up to 7X more RESILIENT
"Due to innovations such as Switch Clustering/Split Multilink Trunking"

Performance

Nortel PERFORMS up to 20X better
"Tests conducted by Tolly"

Total Cost of Ownership

Nortel offers significantly LOWER Cost of Ownership
"OPEX and Services – Info-Tech study"

Energy Efficient

Nortel uses up to 40% LESS ENERGY
"Third-party testing"

more reliable and delivers 20 times better performance than our leading competitor, according to independent testing results.* Our end-to-end solutions and services improve business and IT efficiency while embracing the multivendor environments addressing our customers' most pressing requirements.

Campus Mobility

Competition has created a new mindset in higher education. Qualified candidates have more options and enticements than ever before. Technology, in particular campus-wide broadband wireless, has very quickly progressed from an "extra" incentive to a necessary service required by potential students and faculty alike. Today's students — the first generation of digital natives — expect to find high bandwidth anytime, anywhere. They want a learning experience that includes hybrid course delivery encompassing both face-to-face and online instruction. They want to be able to access campus services on demand, including online course registration, access to integrated campus portals and the ability to connect with faculty and staff flexibly and easily. Based on our vast wireless experience, we can deliver WLAN solutions to provide secure, affordable wireless connectivity options to institutions as well as wireless VoIP solutions. Students and faculty can securely access the institution's portal to submit an assignment, purchase a book, register for a course or see their grades. Higher education customers that deployed Nortel's mobility solutions provide their students and faculty with anytime, anywhere connectivity for laptops and handheld devices in classrooms, libraries and labs.

3D Virtual Learning

Online learning and blended learning are on the rise in colleges and universities. The 2008 Sloan Survey of Online

web.alive — virtual 3D learning tool

Learning reveals that enrollment rose by more than 12 percent from a year earlier. The survey of more than 2,500 colleges and universities in the U.S. finds approximately 3.94 million students were enrolled in at least one online course in fall 2007. web.alive — Nortel's immersive Internet learning application — can help you develop and deliver your virtual learning strategy. It provides the next generation of communication and collaboration tools to answer training and educational needs while delivering individualized and engaged learning. It offers the ability to customize the environment to suit the institution's needs. Students are able to talk to one another and the facilitator in a real-time 3D spatial audio-based immersive setting. Students can share work, collaborate on assignments and physically move around the classroom to interact. web.alive learning environments strike a balance between recognizing familiar learning spaces and allowing virtual improvements that would be difficult in the physical classroom — lessons can be paused, rewound or replayed; objects can be magnified, multiplied or repositioned; history lessons can be contextualized by visual metaphor to link students to bygone times and places; chemistry brought to life with life-size

replications of complex molecules and compounds. In addition, the institution can use web.alive as a recruitment tool. Institutions can offer a virtual campus tour on their portal so that prospective students can decide whether they want to visit or enroll at the institution. This tour not only saves the student money by avoiding travel but also gives them a much more immersive feel for the school. As well, the institution can use web.alive for orientation and career fairs. With the economic recession, more and more students are looking for ways to cut expenses and a virtual orientation saves on travel costs. Virtual career fairs allow employers, students and colleges/universities to cut expenses but still have an immersive career fair. Institutions can get a return on investment by charging the employers for their virtual booth.

Empower faculty and staff to be more effective

Give your faculty and staff the tools they need to become more effective, which in turn attracts more students to your institution. Nortel's Mobility, Unified Communications, Communications-Enabled Applications and community initiatives play a critical role in empowering staff and faculty to be more effective.

Unified Communications

Add unified communications to your network to improve productivity and collaboration between staff, faculty and students. Students are already using collaborative tools and web 2.0 technologies in their everyday lives, and they expect their campus to integrate these tools into the learning environment.

With Nortel's Unified Communications solutions, you can do just that. Nortel Unified Communications enables mobile contact between the faculty, administrators and students — improving overall campus operations and staff satisfaction. Using wireless handsets, staff can be text messaged about a specific event like a staff meeting or an emergency situation. Similarly, "presence" offers real-time information about the status of staff, so that they can be reached any time, anywhere, using instant messaging, text or voice. Nortel's Contact Center and Self Service portfolio helps institutions to serve prospective students and professors by handling calls quickly and effectively, routing to each appropriate expert. Using Nortel's video conferencing and audio conferencing, faculty can mentor other faculty, share best practices and tutor students remotely. Using IP Telephony and Mobile extension, staff can have a single phone number and be reached wherever they are, and they can use broadcasting to send off alerts to students regarding upcoming assignments and tests. Using unified messaging, staff can consolidate their voicemail, email and fax, resulting in faster response to students. Leveraging our partnerships with Microsoft and IBM, Nortel's Unified Communications solution brings students, faculty and administrators closer together, enhancing overall operations at the institution.

Communications Enablement

As unified communications moves forward and brings convergence of our devices and applications, we also want to simplify and standardize interfaces between these components to accelerate the process and the operations of your institutions. The last thing you want to worry about are the details of communications integration. By abstracting from these details, we allow you to focus on important business matters. By adding customizable services to the mix, complex communications functionality can be exposed and integrated into core education applications in a manner that best suits your needs. Even custom applications can be developed to enhance staff performance. Events triggered by business processes can be communications-enabled as well. Nortel solves the communications integration problems of today with Agile Communication Environment. Agile Communication Environment is communications integration software that abstracts and exposes communication services (IM, voice, video, data) and network services (location, presence, policy, context) as Web Service interfaces to any application environment.

Using Agile Communication Environment, your staff and students can use your portal to see if anyone in the directory or contact list is online and whether or not they are already on a call. A student can see whether a professor or tutor is available for a conference and click to call directly from their schedule, which is on the portal. Similarly, faculty can reach administrators from their own campus or other campuses.

Multimedia Conferencing

Staff and faculty can establish ad-hoc or planned meetings with Nortel Multimedia Conferencing, a reservation-less audio and video conferencing system that is installed and operated in-house providing conferencing service accessible from any device including SIP, IP, analog, digital, PC clients and mobile phones. Using multimedia conferencing, institutions can collaborate with distant colleagues on common projects and connect researchers across the globe. Simplify the task of managing video conferences by adopting Nortel Managed Telepresence/Video Conferencing Service —innovative room-based telepresence, desktop, traditional room-based video systems, video bridging, gateway and other network devices that allow seamless integration of various network alternatives; and support services removing the complexities and simplifying the management of new and existing video conference environments and reservations.

Nortel LearniT

Nortel's signature Community Relations initiative — LearniT — is also being used by higher education institutions

> "We're very excited that the University of Virginia School of Continuing & Professional Studies will be offering Course 1 of the proposed new Nortel LearniT 21st Century e-Teacher Certificate in Fall 2009."
> — **Dr. Billy Cannaday, Dean of University of Virginia's School of Professional Studies and Continuing Education**

Game plan for success — three simple steps

1.	**Upgrade** your network infrastructure to save money and energy, secure your campus and enable new applications.
2.	**Mobilize** your campus and deploy unified communications and communications-enabled applications to attract top-quality students and faculty and empower your faculty/staff to be more effective.
3.	**Use Nortel's Managed Services** to deploy new technologies quickly.

to help prepare teachers and students to develop 21st-century skills. For example, Nortel LearnIT 21st Century eTeacher Initiative offers free online professional development including three self-paced courses that give teachers exactly what they need to quickly and effectively make their classrooms 21st-century ready. Nortel LearniT's 21st Century e-Teacher Initiative will become the basis of a new course offering this fall through the University of Virginia's School of Continuing and Professional Development. Driving the strong interest among universities and state departments of education includes workforce readiness in the fields of Science, Technology, Engineering and Math (STEM), and the increasing need for virtual school offerings in public schools. Nortel also has the Everyday Technology Toolkit (ETT), a project-based site that encourages educators and students to create short, one- to two-minute how-to videos about a piece of everyday technology. Nortel employees are ambassadors of these initiatives. But we don't do it alone. Transforming education takes many partners. We are proud to work with Curriki, the global education learning consortium, the National Institute of Aerospace (NIA) along with hundreds of local and regional groups, community organizations and schools. We hope you will be one.

Increase campus safety

Nortel helps you increase the security of your campus in various ways. At Nortel, we have developed a Unified Security Framework which is designed to help you to maximize the security of your network considering the most critical people, process and technology issues. Our approach to security involves layered defense. Layered defense ensures that there are no single points of failure in your network and that your network can adapt to security threats dynamically as they occur. Nortel's security solutions enable the following:

- Block unauthorized users with authentication, access filters and firewalls.
- Prevent eavesdropping with encryption and key management.
- Track network activity through application-aware bandwidth management and auditing.
- Identity-based network access control — Create centralized, granular policies based on identity and device health status in order to control who can access the university network. Offer differentiated access to resources and applications based on user type (e.g., student, staff, faculty, guest), access method (e.g., wired, wireless, VPN), time of day, etc. Efficiently provide secure guest access and

generate reports highlighting security, usage and compliance metrics.

- Secure Learning VPN Connections — Increase the accessibility of your campus through secure remote access solutions. Enable distance learning solutions and extend the reach of your campus network to anyone you authorize, anywhere, anytime.
- Secure Portable Office — Enable faculty and administrators to easily and securely access the institution's portal, learning systems, student information systems and more from any Windows PC in any connected location.
- Rapid response notification — Nortel has an interactive voice response solution that can out-dial to all contact phone numbers and even dispatch emails to mobile phones via text messaging. Nortel's application gateway can also reformat web content from the campus portal to deliver content to wireless devices as well. Increasingly VoWLAN is helping staff and administrators improve campus safety by identifying and responding more quickly to emergencies and risk situations.
- Interoperable communications using Radio over IP — Connect your campus secure radio network with almost any communications device, including two-way radio systems, phones, PDAs and PCs for enhanced communications in case of emergency situations.

Why Nortel?

Nortel understands your needs and has developed a range of solutions consisting of energy-efficient and cost-effective products and services to solve your challenges. Nortel has a proven track record with higher education, primary and secondary school education institutions. These include Indiana University, Princeton University, Coppin State University, RMIT University of Australia, Accrington & Rossendale College, Tarrant County College, Consortium for School Networking (CoSN) 2009 TEAM Award winner North Kansas City Schools, District of Philadelphia, Kentucky Department of Education, Saskatoon Public Schools, and many more.

Nortel Education Solutions at a glance

Secure, reliable, energy-efficient infrastructure for modernized infrastructure, cost savings and campus safety:

- Call Servers
- Ethernet Routing Switches
- Secure Router with VPN Gateway and Firewall
- Wireless LAN Gateway and Access Points
- Secure Portable Office
- Network Management
- Network identity management and access control

Mobility, unified communications, communications-enabled applications for enhanced student learning, staff and faculty productivity:

- Contact Center and Self Service
- Faculty/staff messaging
- Instant Messaging, Presence, Click to Call, collaboration, audio and video conferencing
- IP, digital, analog, wireless clients
- 3D virtual learning
- Content servers for broadcasting and notification alerts
- Communications-enabled applications leveraging SOA and Web Services supporting multi-vendor products across enterprise and carrier domains

Services to simplify and improve operations

- Solution Integration
- Implementation
- Network Maintenance
- Managed Services

Community initiatives for teacher development

- Nortel LearnIT

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* The Tolly Group Report Number 208298, July 2008, reported the results of a power consumption evaluation of six Nortel converged data network products consisting of large and medium core and wiring closet Ethernet Routing Switches (ERS), enterprise branch office routers and IP phones compared to similar Cisco products on the basis of power consumption, heat dissipation and five-year operational cost. See also the Tolly Group Report Number 208275, January 2008, and Info-Tech Research Group Report (January 30, 2008).

**Nortel Energy Efficiency/TCO tool.

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BUSINESS MADE SIMPLE