



How Avaya Managed Services are Helping *Centennial College* Deliver the Best in Progressive Higher Education

Industry Sector:

- Higher Education

Business Needs:

- Rapid Contact Centre Deployment
- 24-7 Network Availability
- Reduced Total Cost of Ownership
- Voice/Data Interoperability
- Multi-vendor Support

Avaya Solution:

- Managed Services
 - Implementation Support
 - Multi-Vendor Voice and Data Maintenance
 - Site Services Manager
 - Help Desk Support
 - IP Network Readiness Assessment
 - Moves, Adds and Changes
 - Performance Optimization
- S8700 and S8300 IP Media Servers
- MultiVantage™ Communications Applications
- Call Management System (CMS)
- G700 Media Gateways
- Cajun 460 Data Switches
- Wireless AP8 Access Points
- OCTEL® 250 Voice Messaging
- Integrated Management Suite

Results:

- Reduced Total Cost of Ownership
- Enhanced Strategic Focus

TORONTO, Ontario — Centennial College of Applied Arts and Technology is a school with a very clear mission. For nearly forty years, Centennial has provided a higher education experience focused on equipping students with the knowledge and skills necessary for career success.

With over 42,000 students and four main campuses, Centennial is one of the largest community colleges in Ontario. Offering more than 90 diploma and certificate programs in a wide range of studies — from four-year bachelor degrees in cutting-edge disciplines like industrial microbiology, to vocational certification in specialized fields such as call centre management — Centennial has established a well-founded reputation as one of Canada’s most innovative educational institutions.

Known for tight partnership with industry, the school has over 800 business, government and labor leaders serving on advisory committees to ensure that Centennial’s curriculum is tightly linked to current and forecasted job opportunities.

Measures of the school’s success in providing a career-enhancing learning experience are readily found – in addition to having one of the highest student satisfaction rankings in Canada, over 30% of Centennial students already have degrees from other colleges and universities.



The Role of Communications Technology in Progressive Education

Centennial’s passion for career-focused education is matched by their belief in the power — and necessity



Lan Nguyen

Vice President of Innovation and IT Partnerships/Chief Information Officer, Centennial College of Applied Arts and Technology

— of using leading-edge technology to enrich the learning process. The primary architect behind Centennial's technology vision is Lan Nguyen, who serves as both CIO as well as Centennial's top officer for IT innovation and partnerships.

"Centennial College has a very powerful vision of the role communications technology will play in higher education. There is no reason why the educational experience should be confined to a specific location or physical classroom. Communications technology is giving us the ability to create a fully connected learning environment and offer support services that are free from geographic limitations.

"The technological transformation of higher education is already well under way, and participation is not an option. Today's students view the availability of communications technology as a given — whether it's registering for classes through an automated call centre application, interacting with their professor through voice or email, or using on-line resources to research assignments.

"The world of higher education has all the same competitive dynamics as other industries — if a school doesn't actively embrace and promote the use of technology as an integral part of the learning experience, students will seek out an institution that does.

"We believe strongly that communications technology is a fundamental enabler for empowering faculty teaching as well as enriching student learning. The next few years will bring Centennial much closer to our goal of having a fully enabled e-learning capability. This will be an environment where students can learn and collaborate in a dynamic multi-media experience — completely independent from their physical location.

"Realizing a vision like this does not happen by chance — you need a well-conceived technology blueprint and the right technology partners to make it a reality."

Communications Technology and Support — a Fresh Look

As Centennial's CIO, Lan is responsible for technology planning as well as moving those plans into operation. In 2001, Lan and her team conducted a systematic review of Centennial's communications infrastructure to assess the school's readiness to move forward with the e-learning initiative.

The findings from the review were conclusive. With the main campus approaching its fortieth year of operation, much of the school's embedded infrastructure was ill-suited to meet the College's rapidly evolving needs. Lan and her team knew that some significant changes needed to be made.

"Once the review was complete, it was clear to us that our network was in fundamental need of modernization. Although our Nortel PBXs had given us good service, they were approaching end-of-life. Bottom line, we needed a new voice platform that had the capacity and flexibility to match our technological vision.

"In terms of the different voice technologies, we knew that convergence was the way to go. Not only would the multi-media nature of e-learning demand an integrated approach to voice and data networking, a shift to IP Telephony would substantially lower our on-going operational expenses."

At the same time Centennial performed the infrastructure assessment, they also decided to re-think their approach to network support.

"We knew that making a decision about the technology was not the only issue that we needed to address. A determination also needed to be made about the best way for Centennial to support that technology. We took a hard look at the question and arrived at two key conclusions.

"First off, we realized that we didn't have the internal experience and expertise to 'go it alone' when it came to providing proper support for

“Only the Avaya Global Services group could meet all of our key requirements. They proposed a Managed Services solution that was exactly what we were looking for.”

Lan Nguyen, Vice President of Innovation and IT Partnerships/Chief Information Officer, Centennial College of Applied Arts and Technology

a converged platform. If we wanted to have an infrastructure that delivered continuous peak performance, we would need an expert partner to help us with full lifecycle support — from initial design and installation, straight through to on-going maintenance and management.

“The second realization was even more significant and really represented a paradigm shift in our thinking. Although our communications technology is absolutely critical to the functioning of the College, our real interest is in the *application* of the technology toward our core mission of educational excellence, not the operation of the technology itself.

“The College has had considerable experience with different support providers over the years, and we knew that a standard ‘off-the-shelf’ approach was unlikely to meet our requirements. What we needed was comprehensive support that was fully customized to meet Centennial’s specific needs.”

Non-Negotiable Support Requirements

“Before we engaged any providers in discussions, we took the time to formalize our critical requirements. The list was short, but every item was a non-negotiable ‘must-have’.

- **Multi-vendor Voice and Data Expertise**

“Since we knew the College was going to transition over to Voice over IP (VoIP), we needed a provider who had the skills to support convergence as well as traditional PBX technology. We were likely to be using voice systems from multiple vendors during

this transition period, so our provider had to have the right experience to service a multi-vendor platform.

“Our provider would also need multi-vendor expertise when it came to supporting our data infrastructure, which was a combination of Avaya Cajun switches in the Local Area Networks (LANs) and Cisco routers on the Wide Area Network (WAN).”

- **A Total Ownership Approach to Support**

“Choosing a provider with the right business model was key. Our support provider had to be willing to make a total commitment to Centennial’s success. We wanted all support to be performed with the partner providing a single point of accountability.”

- **Improved Total Cost of Ownership (TCO)**

“We also needed a partner who could deliver a complete support solution for less than our internal cost. A key aspect in reducing Centennial’s TCO involved the handling of capital expense for the purchase of new infrastructure.

“We conducted a financial analysis and determined that the best approach for the College was to have use of the technology, but not own it. This meant we needed a support partner who was able to purchase the equipment themselves and carry the asset for us.”



Choosing the Right Technology and Support Provider

With a clear view of what they wanted Centennial to achieve with the new technology and support, Lan and her team began their competitive research.

A New Technology Platform

“We looked at all the competitive approaches to convergence and determined that Avaya had the best IP Telephony solution — high-reliability, robust call centre functionality, and engineered for the new applications we’ll need for e-learning.

“We decided to standardize on Avaya IP media servers for our voice infrastructure, and phase out the incumbent Nortel PBXs over a several year period. We are currently on-track to have an all-Avaya voice network by the end of 2004.”

The Decision to Utilize Managed Services Support

“While we were researching our technology options, we also were soliciting proposals for support. We evaluated a number of potential suppliers, but quickly eliminated all but one.

“Several of the support companies fell out immediately because they didn’t have the ability to carry the capital assets or didn’t represent solid financial value. Others didn’t have the multi-vendor expertise or the breadth of products and services that would meet Centennial’s needs and timelines. Ultimately, only the Avaya Global Services group could meet all of our key requirements. They proposed a Managed Services solution that was exactly what we were looking for.”

The Business Benefits of Comprehensive Managed Services Support

The Managed Services solution that Avaya developed was custom tailored to satisfy each of Centennial’s requirements. Avaya would be providing comprehensive end-to-end multi-vendor support for Centennial’s entire voice and data infrastructure.

Worry-Free Implementations

“Our Avaya Managed Services agreement provides an **Implementation Project Manager** whenever we have a new installation or upgrade. The Project Manager (PM) is an extremely valuable resource for the school. The PM operates under the single point of accountability model and coordinates all resources that are involved in the implementation — including Bell of Canada and any third party suppliers.

“Our initial entry into IP Telephony took place in the second half of 2002 and involved the implementation of an Avaya S8700 IP media server with redundant processors and four extended port networks (EPNs). This array utilizes Avaya MultiVantage™ Communications Applications and provides the school’s main voice communications — an absolutely vital function.

“Avaya also designed the S8700 to support our new state-of-the-art call centre. This is equally mission-critical for the College, and handles all student enquiries for admissions, registration and financial aid. Before the centre’s architecture was finalized, Avaya conducted traffic studies to verify that we were engineered to meet the periods of heaviest calling throughout the school year. Avaya really did their homework.

“The Avaya Managed Services team took us from an inefficient decentralized architecture with mediocre performance to a fully integrated showcase centre in record time. The centre was fully operational 60 days after we signed the Managed Services agreement. The only way you could design and deploy a complex application that quickly is by having an extraordinary partner.

“Since these initial deployments, we have installed an Avaya S8300 media server and multiple G700 media gateways in our new administration building, which opened in the spring of 2004. This was our first all-IP site, and included Avaya IP hardphones for all of the staff.

“The Avaya Site Manager is at the ‘heart’ of the Managed Services agreement. The Site Manager epitomizes the total commitment that comes with the Avaya relationship.”

Lan Nguyen, Vice President of Innovation and IT Partnerships/Chief Information Officer, Centennial College of Applied Arts and Technology

“We have been very impressed with the quality of the Avaya-managed implementations. Avaya designed the network, engineered all of the equipment, and deployed them flawlessly. We set very aggressive timelines for these implementations, and the Avaya team has never missed a commitment. The project management support has been top-notch.”

The Importance of a Site Manager

“Avaya provides a dedicated on-site manager as part of the Managed Services solution. The Avaya Site Manager is at the ‘heart’ of the Managed Services agreement. The Site Manager epitomizes the total commitment that comes with the Avaya relationship. Our Site Manager is so connected to the well being of the College that we view her as a regular member of the Centennial management team.

“The Site Manager is also our key Avaya advocate. If we ever need a specialized resource to assist with a project or help us think through a potential network enhancement, the Site Manager will find the right people and engage them.

“Here’s a telling indicator of the great value-added we’re receiving. The Avaya Site Manager has built up so much personal credibility that our faculty regularly seeks her out for advice on their technology courses and study programs. This is collaboration at its finest.”

Maintaining Peak Performance

“The Avaya Managed Services agreement provides Centennial with full 24-7 maintenance on all of our voice and data equipment. All of the voice servers and switches — including the Nortel PBXs — are supported by Avaya *EXPERT SystemsSM Diagnostic Tools*, which provide continuous remote monitoring

and problem resolution. If any issue comes up that requires a hands-on intervention, we have a dedicated on-site Avaya technician ready to resolve it.

“All key performance metrics are formally recognized in **Service Level Agreements** (SLAs), and Avaya regularly provides us with detailed **performance reports** that give us high visibility into the operation of the overall network as well as our call centre.

“Avaya provides complete **Help Desk** support for the voice network, including trouble ticketing, statusing and resolution using their dedicated on-site technician. The Avaya Help Desk staff works very closely with Centennial’s Systems Administration team, and they jointly use the *Avaya Integrated Management Suite* and quarterly capacity reports to help ensure that network performance is always optimised.

“We also look to Avaya to manage and implement our **moves, adds and changes (MAC)**. Even though Avaya regularly surpasses their SLA commitments, we like the fact that all areas of network performance are being tightly measured.”

A Total Ownership Approach to Support

“We recently had a situation come up that really underscores Avaya’s commitment and sense of ownership. Even though it wasn’t covered in our Managed Services contract, the Site Manager determined that our UPS (Uninterrupted Power Supply) had some serious vulnerabilities that could jeopardize Centennial’s business continuity. There was no contractual obligation for Avaya to spend the time investigating our backup power systems — they just saw it as the right thing to do.



"There is a very close working relationship between Avaya and the Centennial IT team. One of the major contributors to this tight linkage is Avaya's approach to knowledge transfer. Whenever there is a new implementation or upgrade, Avaya makes sure that the learnings are shared with Centennial. You couldn't ask for a better partner."

Highly Favorable Financials

"Before we signed off on the Managed Services agreement, we conducted a thorough financial analysis to determine what the Total Cost of Ownership would be if we were to perform each of the Avaya activities ourselves. When we added our HR expense to the cost of Centennial carrying the needed capital investment, the Avaya Managed Services approach clearly provided the best TCO."

Refocusing on Core Competencies

"The Managed Services agreement that Avaya created for Centennial has given us the ability to do what we do best. The expertise of Centennial College is all about excellence in education. Avaya's expertise is all about communications technology and the cost-efficient management of high-performance networks.

"I don't want our students and faculty to think of the College's IT group as 'the technology fixers'. I want them to see IT as tightly linked to the quality and rigor of their academic experience. With Avaya as our Managed Services partner, we can keep that tight alignment."

Looking Ahead to Anytime/ Anywhere Communications

Given Centennial's strong vision for the critical role of communications in higher education, it's not surprising that Lan and her team have a number of technology initiatives under way.

"We will be inaugurating a new learning facility for the fall 2004 semester — a 250,000 square-foot state-of-the-art Science and Technology Centre

that's co-located with the University of Toronto. This site will be a real technology showcase, with an Avaya S8300 server, G700 media gateways and *Cajun 460* data switches enabling VoIP for the entire building — right down to the desktop. This is another step in our transition to convergence. We expect Centennial to be fully migrated to IP Telephony within two years.

"Before we turn up the new Science and Technology Centre, Avaya will conduct an **IP Network Readiness Assessment** to help ensure that our LAN is properly engineered to carry the packetized voice traffic. This verification is essential for a high quality of service, and we intend to repeat the assessment as we convert each of our campus locations to VoIP.

"In addition to having a completely-converged infrastructure, the Science and Technology Centre will also be a showcase for wireless applications. We are using Avaya *AP8 Access Point* technology to provide wall-to-wall wireless LAN access for the students and faculty. The entire campus should have in-building wireless coverage by the end of 2004."

Given Centennial's commitment to offering a highly diverse set of student learning opportunities and support services, Lan has a special interest in the communication applications that eliminate physical barriers from the educational experience.

"We have been using Avaya *IP Agent* since the first S8700 was introduced. This application utilizes the IP Telephony capabilities of the media server to set up full-featured remote voice communications from anywhere as long as the user can establish a secure connection to the College's data network.

"Some of our call centre agents have been located at campus locations served by Nortel PBXs. IP Agent has allowed us to seamlessly integrate these agents into our main Avaya-powered call centre. This is an application that will allow our call centre managers to have fully functional agents operating from any location on or off the campus.



“Here’s a telling indicator of the value we’re receiving. The Avaya Site Manager has built up so much personal credibility that our faculty regularly seeks her out for advice on their technology courses and study programs. This is collaboration at its finest.”

Lan Nguyen, Vice President of Innovation and IT Partnerships/Chief Information Officer, Centennial College of Applied Arts and Technology

This capability gives us tremendous flexibility to maintain agent capacity even if we encounter some physical space constraints in our main centre.

“When you combine the use of laptop-based IP soft clients with this ability to give remote users full access to network resources, it’s easy to see a huge potential for distance learning and collaboration. We have an Avaya Softphone trial currently underway, and we’re gaining some great experience.”

Lessons Learned — B-to-B Advice for Enterprise Leaders

Do Your Homework

“Given the mutual investment that a Managed Services relationship requires, multi-year agreements are the norm. If you need to engage the support of others in signing off on the contract, be sure you can clearly demonstrate the value-added. This can range from improved cash flow coming from the avoidance of capital investment, to a reduction in operating expense because the partner can perform certain activities more efficiently than you can internally.

“Whether you need to gain concurrence from others or not, take the time to perform a financial analysis that shows the costs of holding the capital assets and performing all of the Managed Services support internally. Although the ‘hard

dollar’ functions are easier to quantify, don’t omit the opportunity cost contributions that come from having your internal resources more tightly aligned to the needs of the core business.”

Flexibility is Essential for Success

“For a Managed Services relationship to bring sustained value, it is essential that your partner have a very flexible and adaptive approach to doing business. Since your business needs will evolve over the course of the agreement, make sure the contact is structured to allow for dynamic adjustments and changes.”

Expect a Period of Organizational Adjustment

“If you haven’t had a Managed Services relationship before, your IT team will probably need some time to adjust. Expect that some members of your organization will be concerned that their jobs are at risk. When you launch a Managed Services relationship, it is critical that the leadership team takes time to explain how the new approach will benefit the organization.

“A Managed Services relationship recognizes the strategic value of internal resources and frees them up so they can have a tighter focus on meeting the needs of key stakeholders. Once the in-house team understands that Managed Services is *job-enhancing*, not *job-threatening*, you will find that they readily embrace the new approach.”



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Lan Nguyen, Vice President of Innovation and IT Partnerships/Chief Information Officer, Centennial College of Applied Arts and Technology

About Centennial College Of Applied Arts And Technology

Founded in 1966, Centennial College is Ontario's first four-year community college, serving more than 12,000 full-time students and 35,000 part-time learners in the Greater Toronto Area through four campuses and two satellite locations. With nearly one hundred ethnocultural groups represented in the student body and faculty, Centennial is recognized as one of the most culturally diverse post-secondary institutions in Canada. Centennial is committed to both broad public access and offers more than 90 diploma and certificate programs on a full- and part-time basis in business, communication arts, community and consumer services, engineering technology, health and transportation. These career-oriented programs emphasize practical experience with laboratory learning, industry and agency placements, as well as co-op education. Centennial also offers applied-degree programs in computer and communication networking; software systems: design, development and management; and integrated accounting and information technology management. Six joint-degree programs in paramedicine, journalism, new media, health informatics, environmental science and industrial microbiology are taught in conjunction with the University of Toronto, and the Bachelor of Science Nursing program is delivered jointly with Ryerson University.

For more information about Centennial College, visit www.centennialcollege.ca

All Statements in This Case Study Were Made by Lan Nguyen, Vice President of Innovation and IT Partnerships/Chief Information Officer, Centennial College of Applied Arts and Technology

About Avaya

Avaya enables businesses to achieve superior results by designing, building and managing their communications networks. Over one million businesses worldwide, including more than 90 percent of the FORTUNE 500®, rely on Avaya solutions and services to enhance value, improve productivity and gain competitive advantage.

Focused on enterprises large to small, Avaya is a world leader in secure and reliable IP telephony systems, communications software applications and full life-cycle services. Driving the convergence of voice and data communications with business applications – and distinguished by comprehensive worldwide services – Avaya helps customers leverage existing and new networks to unlock value and enhance business performance.



- IP Telephony
- Contact Centers
- Unified Communication
- Services

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