AVAYA

COLUMBIA UNIVERSITY
MEDICAL CENTER

CASE STUDY

Avaya IP Office Solution Provides Columbia University Medical Center with Valuable Lesson

Challenge	Solution
To provide top global research organization with new communications solution that is highly reliable, redundant and secure, providing new communications services for employees while controlling costs.	CUMC implemented an Avaya IP Office Solution that includes an Avaya IP Office IP403 at its 142nd Street location in New York City and an Avaya IP412 system at the 125th Street location. Both facilities use Avaya Voicemail Pro and Avaya Digital Telephones. The Avaya IP Office Solution at each of the two sites are IP Office System Network linked to the main University campus by point-to-point T1 circuits functioning as part of a university wide network.

Value Created

- Return on Investment. A five-year projected net benefit of $69,858 based on savings in conferencing costs, increased staff productivity and reduced administration costs or $1,435 in 5-year savings per employee. The payback period of 22 months with an annual ROI of 37 percent and Net Present Value of $173,354 after five years.

- System flexibility allowed for a single network CAT-5 cable to be run throughout the new building to handle both the voice and data networks per IP address.

- Compact size of unit. The small footprint of the unit was appealing, as it would take little space to house the unit within the IT Department on campus and allows for easy expansion when the Center adds users or other locations to its Campus.

- Business continuity. Avaya IP Office solution is networked to the main campus telephone switch, or can operate independently in the case of a disaster, should connection to the main network be lost.

New York, NY, USA – Comprising roughly half of Columbia University's annual budget, Columbia University Medical Center (CUMC) provides world-class leadership in scientific research, health and medical education, and patient care. Faculty of CUMC's four schools carry out the school's core mission of educating and training future generations of health care professionals. Conducting research – with the ultimate goal of translating discoveries into new techniques for fighting disease and improving health – Columbia University Medical Center has been responsible for a number of significant clinical breakthroughs – among them, the first blood test for cancer, the first medical use of the laser, and the first successful transfer of genes from one cell to another.

And with CUMC's two buildings housing some of the world's most renowned researchers, choosing a new communications system had to include the very latest technology with a high measure of security. Columbia University Assistant Telecommunications Manager Rick Tunon knew CUMC would be best served by a system that supported the very latest technology – Internet Protocol (IP) – as it provided a high measure of security as well as reliable service. Tunon also sought a system with

built-in redundancy to ensure adequate disaster recovery capabilities to suit the Center's zero-tolerance for downtime.

## High Reliability and Security within a Budget

In addition, any potential system had to meet several other requirements. First, Tunon did not want the satellite offices to feel isolated in any way, so the new system needed at least the same level of functionality as offered by the main campus communications system. Compatibility with the University's other communication system was also required in order to network the sites. The new system needed to provide feature functionality for productivity improvements such as on demand conferencing capabilities, intuitive administration and management tools. Finally, with an eye on the future, Tunon required an easy migration path to future IP applications, while still capable of operating on a public switched telephone network (PSTN).

The Clear Choice for Unmatched Experience and Reliability

Tunon researched a couple of different vendors through his Avaya BusinessPartner, whose communications consultants

showed him different options to support the more than 180 faculty members residing at the Center's campuses on 125th and 142nd Streets in Harlem, New York City. Other vendors' systems could not match Avaya's experience and level of reliability in communications. Ultimately, Tunon chose Avaya because of the company's proven track record in providing superior communications solutions supporting voice, data and IP.

"Avaya was the clear choice of vendors to support the Columbia University Medical Center," said Tunon. *"They have a great deal of telephony expertise, and had created a product that would allow us to operate in a TDM environment while migrating at our own pace to IP applications. It was the smartest solution I'd seen."*
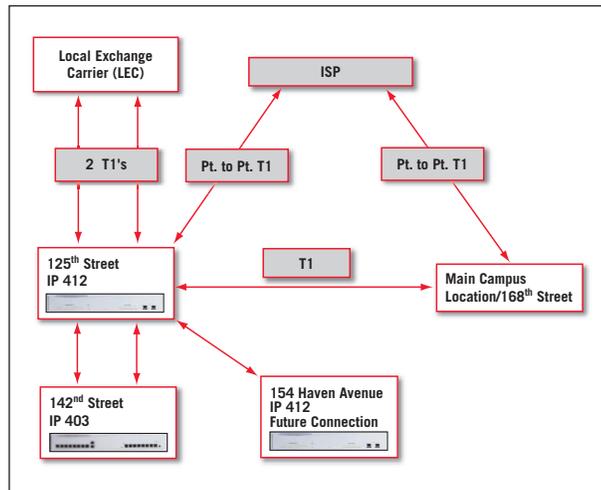
Avaya IP Office Solution Supports and Links Multiple Locations

CUMC implemented an Avaya IP Office system that currently supports 180 users in university offices at 142nd and 125th Streets in Harlem. The two locations house the offices of a few Mailman School of Public Health programs, including the School's National Center for Children in Poverty, Center for Global Health and Economic Development, Harlem Health Promotion Center and Head Start program. Columbia's 142nd Street location deployed an Avaya IP403 system and an Avaya IP412 system is located at the 125th Street location. Both facilities use Voicemail Pro and Avaya Digital Telephones. The IP Office system at each of the two sites are linked to the main University campus by point-to-point T1 circuits functioning as part of a university wide network.

Tunon found the implementation process relatively smooth, and the BusinessPartner's technicians easily resolved small glitches.

Before even getting to the system's features and capabilities, Tunon liked that the system allowed for a single network CAT-5 cable to be run throughout the new building to handle both the voice and data networks per IP address. Many other systems required separate cabling to be laid for each network. Also, the small footprint of the unit was appealing, as it would take little space to house the unit within the IT Department on campus. It also allowed for easy expansion, for when CUMC adds users or other locations to its campus. The Center plans to implement and network one additional location in 2004 at Haven Street, Washington Heights, New York City.

OBJECTIVES	BENEFITS ACHIEVED
Reduce communications costs.	Saving up to $15,000 per year by using IP Office conferencing feature. Reduced cost of new installations by 50% saving $150,000 in year one and two.
Prepare for the future in areas of disaster readiness and use of innovative IP technology.	Gained redundancy in case of disaster. Two campuses now ready for Voice Over IP future implementation.
Connect multiple campus locations and network to main campus with interoperable product.	Connected 125th Street, 142nd Street and third location in Q2 '04. Multiple campus locations now networked to main campus non-Avaya system.
Increase productivity of network administration.	Reduced Moves, Adds, Changes (MAC) requests from average of 60 minutes to 10 minutes per request, saving $1,290 per year. Eliminated need for on-site staff technician for MAC.
Provide highly reliable and flexible communications system.	Improved productivity for top global researchers with reliable solution offering desired flexibility. Use of IP Office Hot Desking feature allows global researchers to work remotely with access to IP Office solution and features from any Internet connection.

> ## I had great confidence in Avaya. I knew they would stand firmly behind any product they marketed, and with the IP Office, they have certainly lived up to their high reputation.

In addition, the Avaya IP Office solution is networked to the main campus telephone switch, or can operate independently in the case of a disaster, should connection to the main network be lost.

The feature-rich nature of the IP Office system also made it an attractive solution for Columbia University Medical Center. First, the built-in conferencing capabilities were appealing, as researchers at the Center average between two and four conference calls per week to meet with colleagues regarding current research. Prior to implementing the IP Office systems, the Center spent over $340 per week on third-party conferencing services. Since implementing the IP Office solution with its on demand conferencing capability, the Medical Center will save up to $15,000 annually in conference calling costs alone.

"Hot Desking" Feature Connects Remote Workers to Campus

The "hot desking" ability of the IP Office system was also appealing, as it allows for easy relocation of faculty from one location to another. Working remotely is also easily accomplished using the hot desking feature coupled with high-speed Internet access: any faculty member can use the public Internet to connect an Avaya IP Telephone in their home to the system located in either Center campus.

Those working remotely can use three-digit dialing to reach colleagues, and callers are transferred to virtual offices of anyone connected to the system, regardless where he or she is working that day. This feature is especially important to professors and researchers, many of whom travel extensively to conduct research or to be at the University for classes or lectures.

Tunon regards the IP readiness and the ease with which IP can be deployed as a major strength of the IP Office system.

"I know I can easily migrate to voice over IP and receive the same high-quality voice calls as I do using [time-division multiplexing]," said Tunon. *"And in the meantime, I can use the system to reach the public switched telephone network to route calls in the same manner I always have."*

User-Friendly System Management

Finally, Tunon and his on-site system administrators have found the IP Office system very easy to manage. Moves,

adds and changes can be done without additional wiring, and the system actually requires fewer employees to manage than the previous system.

Network Administrator Juan Carlos Abreu, estimates that management requests that previously took an hour or more now take about 10 minutes to complete. With an average of three requests per month, system administrators like Abreu are saving about two and a half hours per month or 30 hours each year that can now be used to accomplish other important tasks for the department. Abreu agrees.
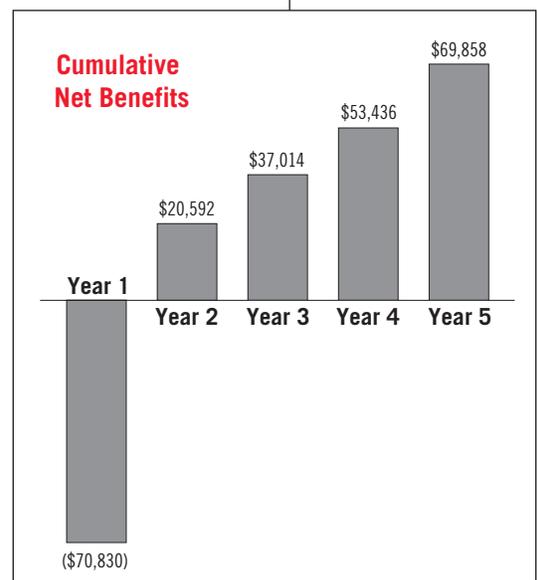
"The system programming is very easy to learn and use, and the system is highly functional," said Abreu. *"We have no problems on system management and the solution meets our needs."*

Additional Sites to be Supported By Solution

The IP Office solution provided by Avaya through an authorized Avaya BusinessPartner completely met the current needs and future desires of the CUMC staff, delivering the reliability and high quality of service necessary to satisfy the world-class faculty that the Center employs. In fact, the University is so pleased with the IP Office solution's performance and capabilities that it recently chose to deploy a third IP Office system at a new University facility at Haven Avenue also in New York City. The third site will be networked, along with the other two, via IP to realize cost savings for telephone calls made between locations.

Savings for the Medical Center associated with the installation of the new system will also be significant. Tunon estimates a 50 percent savings in cost associated with this new installation that will be realized in year one and year two of the financial analysis.

"The capabilities of the system are excellent," Abreu said. *"The added functionality and easy system*

**Cumulative
Net Benefits**

Year 1: ($70,830)
Year 2: $20,592
Year 3: $37,014
Year 4: $53,436
Year 5: $69,858

management have saved our department money and time while providing our faculty with a feature-rich, reliable solution."

"I had great confidence in Avaya," said Tunon. *"I knew they would stand firmly behind any product they marketed, and with the IP Office, they have certainly lived up to their high reputation."*

Learn More

For more information on how Avaya can take your enterprise from where it is to where it needs to be, contact your Avaya Client Executive or Authorized Avaya BusinessPartner, or access other collaterals by clicking on *Resource Type* under *"Do Your Research"* at www.avaya.com.

BUSINESS IMPACT OF THE IP OFFICE SOLUTION

	START UP	Year 1	Year 2	Year 3	Year 4	Year 5
PROJECT COSTS	$(152,500)	$0	$(9,000)	$(9,000)	$(9,000)	$(9,000)
PROJECT BENEFITS*		$81,670	$100,422	$25,422	$25,422	$25,422
FINANCIAL ANALYSIS						
Net Value	$(152,500)	$81,670	$91,422	$16,422	$16,422	$16,422
Cumulative Value	$(152,500)	$(70,830)	$20,592	$37,014	$53,436	$69,858
Net Present Value (NPV)	$173,354					
Annual ROI	37%					
Internal Rate of Return (IRR)	21%					
Payback Period	22 months					
5-Year Savings/Employee	$1,435					

* Benefits include: Avoidance of Conferencing Costs, Staff Productivity Gains and Reduced Administration Costs
  Results shown are not a guarantee of equivalent performance.

ABOUT COLUMBIA UNIVERSITY MEDICAL CENTER

Columbia University Medical Center provides international leadership in pre-clinical and clinical research, in medical and health sciences education, and in patient care. The medical center trains future leaders in health care and includes the dedicated work of many physicians, scientists, nurses, dentists, and public health professionals at the College of Physicians & Surgeons, the College of Dental Medicine, the School of Nursing, the Mailman School of Public Health, the biomedical departments of the Graduate School of Arts and Sciences, and allied research centers and institutions. Columbia University Medical Center researchers are leading the discovery of novel therapies and advances to address a wide range of health conditions. www.cumc.columbia.edu.

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.

For more information about Avaya, visit www.avaya.com.

Applications

- Avaya IP Office Voicemail Pro
- Avaya IP Office Conferencing

Systems

- Avaya IP Office IP406
- Avaya IP Office IP412
- Avaya Digital Telephones

All statements in this Case Study were made by Rick Tunon, Columbia University Assistant Telecommunications Director, and Network Administrator Juan Carlos Abreu.

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