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Page printed from: [Law Technology News](#)

[Back to Article](#)

## Upgrading to VoIP

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McMillan Binch Mendelsohn, with 196 lawyers and 342 support staff, has offices in Toronto and Montreal. We offer our national and international clients common and civil law services, in both English and French. Our client roster includes Fortune 100/500 companies.

Like most IT departments, we support our mobile attorneys with remote access tools and reliable telecommunication. In 2004, we wanted to integrate our client relationship management data with our new voice over internet protocol (VoIP) and wireless technologies.

Motivating us was a planned move to a new Toronto office in Dec. 2004. Our Rohm PBX was 15 years old and increasingly difficult to maintain. We were highly motivated to look at VoIP, although that technology was relatively new. VoIP had compelling advantages: it could be managed by our in-house IT staff, and we would not need consultants to perform maintenance or change wires when people moved offices or changed extensions. We could maintain both systems from Toronto, which would cut down on travel. But to sell the proposal to management, we first had to allay fears about reliability and security issues.

The Move Steering Committee included myself, in my capacity as IT director, executive director Keith Cassidy, and three partners: Robert McDermott, Lou Macchione and Bruce McWilliam. We began our exploration in May 2004, evaluating the technology and testing the equipment of four vendors: Cisco Systems Inc. ([www.cisco.com](http://www.cisco.com)), Avaya Inc. ([www.avaya.com](http://www.avaya.com)), Nortel Networks ([www.nortel.com](http://www.nortel.com)), and Mitel Networks Corp. ([www.mitel.com](http://www.mitel.com)).

The committee came up with a list of 20 requirements for the VoIP system, including flexibility, security, reliability, ease of use, and quality of service. After running vendors through exhaustive tests, including security protocols, we decided that Cisco offered the best infrastructure and hardware to meet our needs. We purchased the Cisco VoIP PBX system, spending \$625,000 to purchase and install the system to support 500 phones. Our rollout started at the new Toronto office in October 2004, two months before the scheduled move-in.

We enlisted the help of Infostream, a consulting firm that Cisco had recommended. (Later acquired by Canadian Bell and no longer exists as a separate entity.) The phones were easy-to-use, comfortable and attractive with large displays. Using Cisco's soft phone technology, our traveling professionals could use their laptops to function as phones. With a high speed internet connection, users log on to our virtual private network and run the soft phone by clicking on an icon on their laptop. For audio, they either plug in a headset or use the laptop's built-in microphone. This web-based system reduces the money that would otherwise be spent on cellphones or long distance phone bills at hotels.

Next, we needed to upgrade our firmwide infrastructure to handle the new phones. This required a new network design, so we replaced all Cisco switches and routers with Cisco power-over-ethernet switches, to power the phones.

Then we tackled quality of service issues, essential for implementing a VoIP system. The system divides up our data into data and voice. For example, if the ethernet has X percent traffic, a certain percent will be assigned to voice and a certain percent to data. Data can deal with delays but voice can't, so this ratio needs to be regulated to achieve proper quality of service.

We then configured six servers that stored the voicemail and other data related to the VoIP system, a task that took only a few days. We installed Cisco's Unity voice mail system and two CallManager telephone switches — the call-processing part of the system. Even with this new technology to configure and test, the most time-consuming part of the install was the physical labor of setting up the actual phones in each person's office.

Infostream helped us with this process so it was done in time for the move.

In all, the VoIP installation took two months — frankly, longer than it should have. Because we all were still maintaining our regular duties, we had to squeeze in work at the new location in the early a.m., after hours and on weekends. We also had to wait for equipment to arrive — which was out of our control. Fortunately, we had built in a time cushion so the VoIP system was ready in time. If necessary, this installation could have been completed more quickly.

Because it's so easy to use, training was minimal. We trained 90 percent of our users in groups of 20 to 25; one-on-one training was provided to users who couldn't make the sessions.

In June 2005, we integrated the VoIP phones with our client relationship management software, ContactEase from Cole Valley Software, of Coeur d'Alene, Idaho. ([www.colevalley.com](http://www.colevalley.com)). That software was already well-accepted in the firm, and used by 85 percent of our professionals.

By dialing into our VPN, our remote users could now access our ContactEase database as easily as if they were physically in the office. Using Cisco's hard phone technology, users simply bring a phone with them and plug it into any data jack within the firm. They also can plug a Cisco phone into their Cisco home router to work from home.

In Sept. 2005, after we established the VoIP system, we focused on selecting wireless technology, including handheld devices, to support both phone and e-mail services. We were under great pressure to get handhelds for the attorneys. We only considered Research in Motion Ltd.'s BlackBerry Enterprise Server ([www.rim.com](http://www.rim.com)) and devices, deciding not to look at Palm Inc.'s Treo. We chose BlackBerry because it was most easily integrated into our existing e-mail and cell phone services. Our cost was about \$80,000 for two BlackBerry enterprise servers, 150 BlackBerry devices, licenses and installation.

Our IT staff did most of the installation ourselves so there were no outside consulting fees. We installed the original BES 3.0 servers and BlackBerry software in Toronto and Montreal in Sept. 2005. Since then, we have upgraded both sites to BES 4.0. Setup took about a month, because we had to pick a vendor and work on security and password enforcement issues. We chose Metafore IT Solutions ([www.metafore.ca](http://www.metafore.ca)), a Toronto consultancy already helping us with e-mail.

Although we handled most work ourselves, Metafore helped with a few minor issues. Once the technology was installed, about 150 attorneys and 15 support staff members were able to work remotely with handheld BlackBerry devices. Support staff with devices include IT, catering, office services, and mailroom personnel

In June 2005, we encountered BlackBerry issues with respect to accessing ContactEase. The devices had limited memory, and could not accommodate the 75,000 records housed in our database. Secondly, lawyers would enter in contacts on their BlackBerrys with incomplete data (e.g., just a name and phone number), or they entered contacts already in the database. We assigned Brian Groulx, an in-house developer, to create a live connection to the CRM system, and assure that remote users could pull up current contact data. That took about two days. Now completed, the ContactEase connection is accessible via a contact information system icon on users' BlackBerry home screen. About 70 percent of our BlackBerry users access the CIS regularly when out of the office.

Now, mobile users can query the database and add contacts in real time. To reduce duplicates and increase accuracy, we have a full-time CRM database administrator. Enabling live ContactEase access helped us justify the return on investment for the BlackBerry monthly costs of \$50 to \$75 per month per device.

The program has increased our staffing. We've assigned a help desk person to spend about half of his/her time maintaining the complete system, and we have set up after-hours emergency support. Overall, our mobile users have responded positively to the new technology. They like that they can access the ContactEase database anywhere, at any time. The partners are pleased because our professionals are more reachable, can bill more time and can serve our clients more quickly.

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