Lessons from the front lines of unified communications

By Jim Rapoza

PLUS
How to make the case for UC
The most difficult thing about getting a unified communications initiative off the ground has always been building a solid business case. Executives want to know exactly how UC will make the business more profitable and efficient. How is it better than what’s currently in place? How much, exactly, is all this going to cost us? Why can’t we just keep our old PBX and let people use AIM instant messaging and Skype video on their personal smartphones?

IT is having a hard time coming up with a good answer. If you really crunch the numbers, migrating to UC is often orders of magnitude more costly than simply renewing an existing PBX license. On the cost side of the ledger: UC software licenses, servers to run the system, new handsets and headsets, gateways to the PSTN, new switch gear with Power over Ethernet, and training and services to ease the migration. Yet the benefits a company can expect to get from UC are mostly soft—you have to make the case through efficiency and productivity gains.

That kind of soft ROI is a hard sell anytime, but when budgets are tight, it can be a non-starter. The key, if you really believe UC is critical for your business, is to make a multilayered business case. Go deep and get your financials in a row based on the totality of the system, not the individual parts.

For example, get input customer service managers about why letting salespeople talk contract specifics over Skype on a personal phone may not be a smart idea because of dropped calls and poor audio quality impacting the customer experience. Find out what hooks a UC vendor offers for enterprise mobility and advanced communications-enabled business processes—letting employees unify their voice, email, and IM message in-box; managing their presence and contact preferences; and using follow-me features so they can be reached regardless of where they are, simply and easily. Pull all that information together.

And then, figure out which particular UC feature will dazzle your CEO and other business unit execs, and lead with it.

A few years ago, I listened to a manager for a midsize manufacturing company rant about cellphones ringing during meetings. “Why can’t they remember to turn them off?” he wanted to know. I had just come from a demo of Microsoft’s OCS, which, when paired with a Windows phone, can disable ringing and alerts based on calendar events. He perked up, leaned over the table and said, “That! I want that!”

Or maybe your executive team hates not being able to track employees’ status. How often has the marketing manager spent time trying to find Bob Smith in sales, just to find out that Bob is at an off-site sales meeting and can’t be disturbed? Presence is a core feature in enterprise UC.

Now, that manufacturing manager was evaluating a system that would have set the company back half-a-million clams, compared with $75,000 to renew its PBX contract. Are either of these features in themselves worth $425,000? No. But UC is much more. I’ve spent the last 15 years as a remote employee and have experienced the value of UC firsthand—starting with a bunch of different systems to collaborate with co-workers and moving to a single, unified system. Being able to reach someone on IM, add more people when needed, move the conver-
sation to voice, share my desktop, and schedule and manage meetings on the fly has saved boatloads of time.

But more importantly, it has made me more productive when collaborating with others. Going back to sharing files via e-mail and trying to work out problems over the phone by directing attention to a particular part of a document would be a huge step backward.

That deep UC business case you made? It comes into play after you’ve hooked ‘em with the “wow” features. Then you explain how the system will let you integrate communications with the revenue-generating parts of your business, such as customer-facing applications. One example is a retail website where the customer or a call center rep can initiate contact on a pre- and post-sales basis using voice, IM, or video. Tying the UC system into the back-end tools employees use to run the business, like CRM or help desk, means employees can interact with customers effectively and provide targeted service, which should increase satisfaction and sales.

Putting a hard-dollar benefit on UC has never been easy. Vendors know this and are happy to provide work-sheets and ROI studies. You should, of course, bolster these with your own analysis. These can help reel the business in, but only after you’ve set the hook.

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There will be problems with any unified communications project. Learn from those who’ve worked through them.

By Jim Rapoza

Unified communications isn’t for everyone. Some companies see it as collaboration overkill, while others see it as the missing bridge across voice, video, and messaging that leads to cost savings and productivity gains. For the UC believers, this article assumes you’ve cleared the ROI hurdle. Now it’s time for implementation, and there are plenty of ways these projects can fail, ranging from poor initial planning to employee resistance to networks that aren’t ready to handle the load.

What follows are lessons learned from five very different organizations that have gone through major UC projects.

Part of the risk comes from the far-reaching nature of UC, because it touches so many areas of a company’s infrastructure and is used by people in so many roles. A standard implementation today provides IP voice capabilities, audio and videoconferencing, voice mail, fax, presence information, and instant messaging. Some loop in mobility and social networking, and look to embed communications in business processes by integrating UC with enterprise software. The UC system will almost certainly integrate with email servers, LAN and WAN infrastructure, telecom systems, and storage, and it could link with other collaboration, social networking, and enterprise systems. Looking at UC
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as a single product or single-vendor project will cause problems from the get-go.

One lesson common to all of our five case studies is that no company should move forward with UC without a hard look at whether its network is ready to handle the traffic. Unlike email and most other network traffic, voice and video need the highest quality of service. Employee training also is essential—but it needs to be training focused on UC tools that employees are likely to use to do their jobs better, not generic training on software features.

Ritchie Bros.: Global UC Needs

When your business is auctioning construction and agricultural equipment, including large trucks, you need to go where the product is. For Ritchie Bros., the world’s largest auctioneer of used heavy equipment, that means provisioning sales offices all over the world and having territory managers travel from sales site to sales site as needed. A location may have four to six sales per year, with each sales cycle lasting a month or two.

When Ritchie Bros., in Vancouver, British Columbia, brought in telecom manager Chris Farrer five years ago, his job was to implement an enterprise-class voice system. At the time, all the company’s offices had standalone small-business phone systems that weren’t integrated in any way.

One of Farrer’s first goals was to bring Ritchie Bros.’ remote sales staff back onto the company communications network. “Salespeople were basically running off of their cellphones,” he says. “They did have an extension at an office at
the regional sales site, but they were rarely ever there, and they never gave out that number.”

Farrer wanted to provide each employee with a single number for voice, fax, and text messaging—including routing calls to mobile devices. From a cost standpoint, the company also wanted to make better use of its existing MPLS service. Along with making it easier to reach mobile workers, Farrer wanted to cut down on long-distance calls. So instead of making a long-distance call from, say, Vancouver to a client in Germany, the Ritchie Bros. system would route the call from Vancouver to its gateway in the Germany office, and the call would be routed from there, essentially making it a local call.

Through the use of Avaya’s EC500 software, which routes calls from the UC voice system directly to a user’s mobile device, Farrer is able to provide employees with that single phone number. The system also integrates with the company’s Lotus Notes email. All of Ritchie’s desk phones are now IP-based.

Gotchas:
One of Farrer’s first problems was one that’s all too common—the dreaded giant spreadsheet containing every employee’s contact information. “When I started here, they said, ‘You have to maintain this Excel list,’ he says. “And I said, ‘That thing is crazy. It’s dated the moment you print it.’” Instead, Farrer’s team created an Oracle database to push company contact information to other systems such as Active Directory, Lotus Notes, and Avaya UC systems. With it, employees can look up colleagues’ contact information and directly call them using the Avaya system.

Another problem Farrer ran into was the initial design decision. Avaya suggested that the company have three networks—a European, a Canadian, and a U.S. network—and then put gateways in each regional location. Having multiple networks worked, but it caused administrative headaches. For example, in order for employee information to be correct across the entire company, the IT team had to re-create the same user in all three networks, tripling the workload to add a user. The company has since switched to one master network in Canada, and the

Tips For Success
Successful UC programs share some commonalities:

- IT works with line-of-business teams to define key goals, thus aligning business process and technical requirements. Are you willing to spend to improve employee efficiency, or are cost reductions paramount? How big a factor is mobility? Do employees mainly collaborate with one another, or do you need to accommodate far-flung customers and partners?

- Everyone is realistic about IT’s capabilities. A project to retire a legacy PBX and integrate voice mail and email is far less complex an undertaking than marrying social networking, mobility, and communications-enabled business processes. Decide whether you need to budget for outside help, and evaluate the growing number of SaaS options.

- Network limitations get acknowledged and addressed. Comprehensive UC almost always involves blending multivendor hardware and software, with the attendant integration land mines. Profile WAN performance, and realize that quality of service is just as important as raw bandwidth, if not more.

- IT tests early, often, and thoroughly. Going live before you know everything works squanders employee interest and IT’s credibility. You get one chance to make a first impression.

- Education isn’t an afterthought. Budget for formal training on new systems.
servers in the U.S. and Europe are used for disaster recovery and backup.

**Lessons Learned:** With offices worldwide, Ritchie Bros. must make sure that equipment can be purchased and serviced in every country in which it operates. “You really want to take some extra time to work with the local people and the local facilities, because you’re going to find that services are different and levels of support are different—sometimes better, sometimes not as good,” Farrer says.

He also recommends thinking out the dialing plan for a UC system before implementation. “We didn’t,” he says. The team started with five-digit extensions, which brought complaints about having to dial too many numbers to call someone in-office. Yet it still didn’t provide enough numbers. Ritchie Bros. moved to a seven-digit plan, and while employees still moaned about digit duress, once they got used to the UC system and using the directory, Farrer says the grumbling went away.

**Liberty University: Coping With Growth**

Liberty University, a Christian institution in central Virginia with more than 12,000 residential and 70,000 online students, is in growth mode. Adding buildings and supporting more remote workers required more sophisticated telecommunications, prompting the university to move to a Cisco Unity 8 UC system that now supports about 3,000 phones and provides voice mail, presence, and Microsoft Office Communicator to faculty and staff.

The acquisition of a million-square-foot building and the need to replace an aging PBX provided the initial push. As Liberty wrestled with how it would handle the cabling, it turned to an IP network, giving the Unity system the nod in part because it’s a Cisco shop.

A big advantage of the UC system is that people moving offices can pack up their stuff, including the IP phone, and just plug into the network at a new location and get back to work. “It has fostered a culture within the university of ‘moves are not something to be dreaded,’” says Liberty voice engineer Tirian Wilson.

The university also uses Cisco UC’s integration with Microsoft Office Communicator to give remote workers the kind of UC capabilities in-office workers have. So in addition to voice-over-IP phones they access using their PCs, so they don’t need dedicate phones lines or handsets, they also get IM, videoconferencing, desktop sharing, and presence.

**Gotchas:** One of the biggest problems during the UC deployment was employee training. The keys on Cisco IP phones can be customized to serve multiple purposes, so, for example, the same button that puts a call on hold during a session could be used to call back the last number dialed before another session. “With the IP endpoints, we added the concept of soft keys,” Wilson says. “I spent a lot of time with a lot of people trying to explain that, ‘OK, these buttons across the bottom of your phones, they do this if you’re on a call, but they do something totally different if you’re not on a call.’”

Another obstacle continues to be getting employees to take full advantage of the UC capabilities. “We have a lot more capabilities than people are aware of,” says Connie Allison, Liberty’s enterprise IT communication liaison. “They tend to know how to make a call, but they don’t know that calls could follow on their cells. We have to keep up the usability training.”

**Lessons Learned:** One of the Liberty team’s
 regrets is underestimating the importance of user training. Allison recommends getting employees acclimated to new devices and extended feature sets via regular training sessions. Voice engineer Wilson also cautions businesses that UC cost savings are hard to pin down. "It’s not going to be, ‘I used to pay X per user, and now I pay Y,’” Wilson says. "It’s going to be in the flexibility that the system gives you. The endpoint may be more expensive, but when we move cubes three times, I don’t have to roll a technician every time.” To ensure that its network was ready to handle UC, Liberty followed Cisco’s guidelines for quality of service and enforcing prioritization.

**Creation Technologies: UC For Factories**

From its headquarters in Burnaby, British Columbia, Creation Technologies provides contract electronic manufacturing around the world. One of its toughest UC challenges was deploying communications services to workers on a factory floor, as well as teleconferencing to connect teams worldwide.

The company moved to Microsoft Office Communications Server 2007 r2 two years ago, and last year, as part of the early adopter program, began migrating to Lync 2010. Its servers run entirely on Lync, and half of its 2,500 employees use the Lync client interface, with the rest scheduled to migrate as part of an upcoming Windows 7/Office 2010 upgrade.

For teleconferencing, Creation Technologies originally purchased Cisco Unified Meeting-Place Express. "Six figures, a big investment, but it worked great,” says IT operations leader Rae-gan Gibb. Key word is “worked.” One of the main benefits was the ability to launch and manage meetings through Outlook using the Cisco plug-in. But when Creation Technologies began moving to Office 2010, Gibb found that the Cisco plug-in wouldn’t support Outlook 2010. So the company decided to move to Office Communications Server.

One of the main benefits Creation Technologies has seen from its Lync rollout is the ease of scheduling and managing conferences. “Our workers live in Outlook, and to be able to just click on a new meeting and have voice, screen sharing, everything, all in one shot, is huge,” he says.

About 150 employees now depend on Lync for all of their voice communications, mainly using headsets plugged into their PCs rather than handsets. Gibb is gradually moving everyone to Lync voice as current systems become obsolete.

**Gotchas:** An eternal question when rolling out IP-based voice communications is whether to offer a handset or headset plugged into a PC. A headset/softphone combo provides flexibility and cost savings, but many people still want a traditional handset—which Gibb plans to accommodate. “To take a nontechnical user and remove the handset from their desk, I think we’re setting ourselves up for a difficult time,” he says. “Lots of opportunities for people to complain.” And lots of extra cost. When the company rolls out Lync voice widely, each handset will cost around $200, in addition to the software license, compared with softphones starting at less than $40. About a fourth of remote workers request handsets, Gibb says.

The other challenge he’s dealing with is Creation Technologies’ plan to move an entire factory’s PBX to Lync. For workers on a manufacturing floor, there’s no dedicated desk or cube where an employee’s phone can sit. Each phone on the manufacturing floor could
be shared by dozens of workers. “You need to plan out how does that become Sally’s phone, and how do you tie that in with the rest of her stuff, even though she, plus 10 other people, might use that same handset over the course of three shifts,” Gibb says. That problem will likely be solved by using handsets and a password system through which people can access personalized UC features.

Lessons Learned: Gibb warns not to underestimate the change you’re asking users to make, especially if you’re taking away their handsets.

“When you’re working with Lync, everything is PC-centric or Active Directory-account-centric,” he says. “It’s a different way of thinking. The Lync client is the master, and everything else is just a child to that.” Spend the time to get employees used to the idea of the PC as their main communications interface.

Gibb recommends a phased rollout; Creation plans to have both the old phone systems and Lync up and running together for a period of time while people get comfortable with the new system.

Boston Red Sox: Fenway Retrofit

Leading a UC rollout for the Boston Red Sox might not draw quite the scrutiny that, say, the team’s manager faces. But Red Sox IT director Steve Conley has had to deal with more than his fair share of second-guessing during a long-term project to transform the organization’s messaging and telecom. The project began back in 2004, at the same time that the Red Sox were upgrading and improving facilities and features at historic Fenway Park.

This is a business that hosts another visiting business 81 times per season, moves a large number of its staff to Florida for two months every year for spring training, and, oh yeah, operates in a ballpark that was built when the telephone itself was the cutting edge in communications technology.

In 2004, the Red Sox managed voice mail using an Onyx system it wanted to replace, so it chose the Avaya Modular Messaging Plat-
form with a Microsoft Exchange back end. “VoIP was just emerging,” Conley says. “It had been around, but it hadn’t really stabilized.”

Because the club had to deal with complexities such as spring training, conventional phone lines for reporters in press rooms, and an internal call center for its ticketing office, the Red Sox needed a hybrid UC platform that could handle analog, digital, and IP voice communications. Because of the call center, it also needed automated call distribution capabilities.

Another major driver for the UC adoption was improved messaging and voice mail—knowing that a blinking light on a desktop phone wouldn’t work when key employees are often on a practice field or walking around the park at critical moments. “Eighty-one times a year we’re hosting a game, and a lot of our customer service folks might have a voice mail at their direct number, and the caller expects a call back,” Conley says. With UC, the message gets delivered to the employee’s smartphone, so “our customer service went up significantly,” he says.

**Gotchas:** By far the biggest challenge the Red Sox faced was Fenway Park, built in 1912. The age of the stadium made it difficult to make even simple technology changes, like replacing the phones in the bullpen. The Sox launched a major stadium renovation in 2004, setting the pace for network and UC advances. “Everything got torn down to the studs and put back up,” Conley says, and the team was able to replace digital phones with VoIP. Now, 95% of its phones are VoIP.

At such an event-driven organization, Conley had to make sure that upgrades and system fixes didn’t crimp operations. And that’s true year-round:

For example, replacing the phone system couldn’t get in the way of taking calls for off-season ticket sales.

Conley keeps a close eye on technology improvements. For example, while the club got good use out of Avaya’s EC500 system for routing calls to mobile devices, he’s looking forward to migrating to Avaya’s new One-X Communicator. “With EC500, it’s a little bit like Russian roulette, because the call comes from the switchboard so you don’t know if it’s an important call,” he says. With One-X Communicator, the originating caller-ID information gets routed to the mobile device.

**Lessons Learned:** While the Red Sox have many unique requirements, many of the UC lessons learned carry over to other organizations. Conley emphasizes knowing and preparing for your network’s limitations. That preparation includes establishing the necessary quality-of-service configurations for voice and having Power over Ethernet. Power over Ethernet makes it easier to deploy IP phones, which need electrical power to operate. The network is “the plumbing that everything is going to ride on,” he says.

Conley also recommends making sure storage systems are ready to handle the increased voice mail—5% to 10% more in the Red Sox’s case. “In hindsight, I probably could have been a little more strict in regards to mailbox size,” he says.

Also, keep an eye on emerging UC capabilities, such as video being added to existing collaboration platforms. Microsoft’s acquisition of Skype will likely bring new video capabilities to Lync, for instance. Nearly half of Lync users InformationWeek surveyed see that prospect as a positive, while just 18% see the Skype deal as a negative. Whatever Microsoft
adds, look for other UC vendors such as Avaya and Cisco to respond.

Automasis: A Startup Story

For startups, UC can be attractive, but cost is a big concern. A hosted or software-as-a-service option often makes sense, since up-front costs are lower and it requires less management.

Those factors appealed to Automasis, a 15-person startup that provided custom industrial automation systems. The company used a hosted implementation of CommuniGate UC over a three-year period—well, before the founders mothballed their startup and went back to grad school.

Company co-founder Akhan Almagambetov says the UC system cut telecom costs for workers traveling internationally and for routing internal calls. It also helped to have one communications system instead of different ones for voice, email, and IM, and to have a service provider that could take care of problems.

Gotchas: Hosted software doesn’t mean trouble-free. For Almagambetov, the biggest hassles came with the initial configuration: “Calls not going through, IMs not being sent reliably, email failures, voice mails being ‘in limbo’ within the annals of our own system,” he says.

Lessons Learned: Almagambetov warns that internal IT isn’t absolved from figuring out its requirements up front, including making sure the system is properly configured before turning over support to the provider and for testing major changes.

Still, Automasis would still be an advocate of hosted or SaaS UC software if he and his colleagues restart their business. “Instead of running around like a chicken with its head cut off when something goes wrong, a quick call to your provider can lay this pressure on someone else’s shoulders,” he says.

Things will go wrong. Whether it’s SaaS or on-premises software, big company or startup, unified communications is never plug-and-play technology. It touches too many people and is too central to a company’s operations to be a simple implementation. UC projects test the range of an IT organization’s skills, from its technology chops (including assessing whether the network can handle the new workloads) to the softer side of project management (such as delivering training tuned to employees’ needs).

Done right, UC can cut costs and improve productivity. But heed the lessons of these earlier implementors.

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