Unified Communications for Public Libraries

A case study from the Allen County Public Library

The intelligent application of Unified Communications technology
to streamline internal communications and engage a community

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CHALLENGES

- Support a progressive public library community with tools for current and future innovative communications functions
- Tailor solutions to various groups with different user needs
- Centralize management for one main library and 13 branches
- Meet current and expected future demands
- Provide maximum amount of options within set budget

SOLUTION ELEMENTS

- Mitel 3300 MXe Controllers
- Mitel 5550 IP Console
- Mitel 5340 IP Phones
- Mitel 5201 IP Phones
- Mitel Wireless LAN Stands
- Mitel Enterprise Manager
- Mitel OPS Manager
- Microsoft Office Live Communications Server 2005Cisco Wi-Fi Access points
- Spectralink i640 Wi-Fi phones
- Spectralink SVP servers

Like most organizations, the Allen County Public Library was interested in including advanced communications features when they replaced their phone system in 2006, but couldn't justify including all available Unified Communications functionality for the whole enterprise. This is a case study of how one organization wisely and effectively selected and applied advanced communications technology functions based on specific requirements and objectives.

The Allen County Public Library opened in 1895. It serves the residents of Fort Wayne, Indiana which has a population of 225,000 and the whole of Allen County which covers about 660 square miles and is home to both agricultural and manufacturing industries as well as a Purdue University Campus. There is one large main library in Fort Wayne and 13 branches scattered throughout the County. The Library is primarily funded by county taxes and the use of its facilities and services is free to residents of the County. The brand new main branch is an impressive 360,000 square foot building. In addition to its collection of 3.5 million items which includes two million books, the main library includes one of the largest genealogy collections in the world, a café, bookstore, auditorium, art gallery, computer center, an underground parking garage, and the Great Hall, an elegant open atrium.

Fort Wayne, Indiana's second largest city has been cited as the Best Read City in the United States by Places Rated Almanac, due in large part to the public's extensive use of the library's large collection. Residents of the County borrowed more than 3.5 million books in 2005, along with 750,000 videos, DVDs, and sound recordings, and more than a million other materials. Fort Wayne is also listed as one of the Most Wired Cities in America, with fiber to businesses and homes in most areas and metropolitan Wi-Fi coverage. The city and county are proud of their progressive utilization of broadband for business, education, and pleasure.

In 2004, after several years of needs assessment, planning, and design, ACPL was in the process of building the new main library, adding branches and updating existing branches. Their research indicated that there would be a continued and indeed expanded need for public physical spaces for intellectual exchange in spite of the Internet and virtual spaces. Included in their vision and plans was an advanced communication infrastructure to meet the needs and expectation of an electronically interconnected world. The Library's Mission Statement says that the ACPL will strive to create an "environment [that] will foster intellectual exploration and the pursuit of knowledge."

Conveniently, ACPL's Rolm / Siemens PBX's and phones were at the end of their life cycle, and ACPL's plans included a significant upgrade in WAN bandwidth and managed services between the main library, their data center and 13 branches. VoIP seemed like a likely choice, but they weren't sure whether VoIP was mature or flexible enough, or for that matter, affordable.

ACPL decided that they needed outside expertise to help them plan a new communications system and guide them through a process to find the right equipment manufacturer and vendors to handle and support the installation. After interviewing several consultants, they chose the Gateway Group for their knowledge of Unified Communications solutions and experience at guiding organizations through complex telecom purchases.

This is where the project is distinctive in terms of Unified Communications and libraries. In addition to the usual analysis of phone system needs, network readiness, carrier contracts, etc., ACPL commissioned the Gateway Group to conduct educational interviews with all its departments. The first

stage of these interviews focused on understanding what the work processes and information flows were for each group. The second stage was to introduce and explain specific Unified Communications features and capabilities that could be really useful to each group. For example, the circulation, facilities management, security, and IT groups were introduced to Wi-Fi phones ("a desktop phone in your pocket"). The billing department and administrative offices were introduced to Unified Communications (i.e., fax in email). Branch managers were shown collaboration (e-meeting) technology, and the research and circulation departments were introduced to distributed, skills-based call center capabilities. Only technologies that seemed appropriate to the work process and information flow of each department were introduced; and in order to maintain focus (and probably sanity) among the staff, only the most useful three to five possible Unified Communications options were introduced.

The third stage of the interview was a creative dialogue with each library group to explore whether and how that department would use the proposed Unified Communications capabilities and features to improve their internal processes, better support the library's community of users, reduce costs, or provide flexibility for future change and growth. Out of these sessions, the various ACPL departments identified a range of Unified Communications functions that would support and enhance the library's present and projected commitment to the community. Phone and voice mail features were also prioritized.

ACPL had established a maximum budget of $400,000 for their new phone system, not including network upgrades, cabling, or consultant's fees, so an open-ended financial ROI analysis was not appropriate. The library was diligent about spending the public's money carefully and intelligently. It would have been possible to purchase an adequate phone system for less than $400,000, but the library was also committed to improving internal efficiency, progressively serving the community, and having a system that provided flexibility for inevitable future changes. The analysis and planning process was more of a feature / benefit prioritization exercise than an ROI analysis.

After the Gateway Group analyzed and organized the results of the interviews with all the departments, the consultants spent time with Sean Robinson, ACPL's IT and phone system director, and his staff prioritizing Unified Communications and phone system features and working out the number of licenses that would be required for various functions like unified messaging, collaboration, etc. They then created a design and requirements document for the new ACPL system and then estimated the cost, including WAN (wide area network) upgrades, to determine whether the proposed system would fit within the library's fixed budget. They estimated that although it would be tight, the library had the budget for most of the features that they wanted, factoring in the fact that some of the bandwidth and equipment costs would be covered by U.S. Government E-rate funding.

During the design process, it became clear that a VoIP platform would be the best way to provide the desired phone functionality for ACPL's enterprise and VoIP would also facilitate the integration of Unified Communications features and "future proof" the investment. Robinson conducted a test of ACPL's WAN to determine whether there would be adequate bandwidth to handle anticipated VoIP call traffic and maintain call quality. The survey also gave Robinson a shopping list of router and switch upgrades that would be required to safely run a VoIP solution. The test showed that ACPL's existing WAN would have the capacity to run a quality VoIP phone system, but the library was anticipating growing bandwidth needs between all facilities and was looking at upgrading T1's to Gig

E interlinks, which would increase bandwidth capacity over a hundredfold. E-rate funding would help cover the costs.

Robinson was considering adding Wi-Fi coverage to provide PC mobility within the enterprise and as a service to the public. When it was determined that Wi-Fi portable phones would provide efficiencies in several departments including circulation, research, facilities, IT, and security, the combined needs justified the implementation of an enterprise-wide multi-level Wi-Fi system to service secure Wi-Fi phones, ACPL computers and PDA's, and provide public access to the Internet. The Gateway Group called in Wireless Resources to survey all facilities, review the blueprints for the new main library and to create a detailed plan for the deployment of access points.

Robinson was able to justify the WAN upgrades and Wi-Fi coverage and fund the costs from other budgets along with some E-rate money. The phone / Unified Communications vendor could assume that routers, switches, interconnects, and Wi-Fi access points would be in place before the telecom install, and while they would be responsible for tuning the network and Wi-Fi, their budgets wouldn't have to include equipment or install costs.

Because the library is publicly funded, an RFP was created for an open proposing process. The RFP was specific in the overall requirements for ACPL's new phone system, but was judiciously designed so that any major hardware- or software-based VoIP system maker should be able to propose a competitive and viable solution. VAR (value-added reseller) requirements were stated in the RFP, including experience and certifications with multi-site VoIP systems, Wi-Fi phone networks, call centers, network management, system integration, training, and support.

The Gateway Group actively researched and contacted VARs within 200 miles of the library that seemed likely to have adequate qualifications and that represented leading brands such as Avaya, Cisco, Nortel, Mitel, Siemens, and Interactive Intelligence. This was done in order to make sure that they were aware of the publicly advertised RFP and to further ensure that they knew that there was no predisposition to any particular brand or VAR.

At the proposer's meeting, attended by over a dozen firms, the library stated that their maximum budget for the Unified Communications system was $400,000 excluding network upgrades, and of course they expected all of the core functionality stated in the RFP to be included and would like as much of the optional functionality to be included as possible.

Seven competent solutions were proposed based on six different platforms. Five proposals were within the stated budget and of those, at least three solutions, two hardware-based and one software-based, although quite different in their architecture, looked like they would meet ACPL's needs and desires. ACPL carefully considered all of the proposals that were within its budget, with the evaluation team independently scoring proposals and vendors on a number of criteria. The individual evaluations were combined into a single score card.

Per Gateway Group's recommendations, the ACPL proposal evaluation team visited the VAR's to use the proposed phones to check out physical and voice quality, user friendliness, display readability, and other features.

ACPL really liked phones like Cisco's with XML displays that could double as a visual message display and thought that some form of display phone would visibly communicate that the library's new phone system is high-tech. Mitel's new 5340 IP Phone with HTML display, which had just been announced, included the desired phone functionality as well as an XML capable back-lit display, which the library wanted to use to push text messaging and other communications to the many phones that were not co-located with PC terminals. Robinson's team liked the audio quality, controls, and physical feel of the phone as well. It was subsequently decided to make the 5340 IP Phone the library's standard desktop phone in order to simplify training, support, and programming. The 5340 IP Phones were a bit more expensive than the original budget established for the desk sets, so ACPL had to give up some optional features elsewhere, but gained HTML messaging capabilities throughout the library.

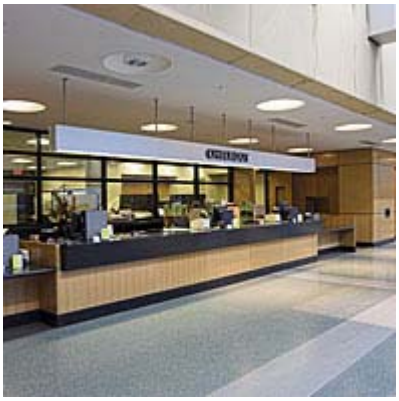
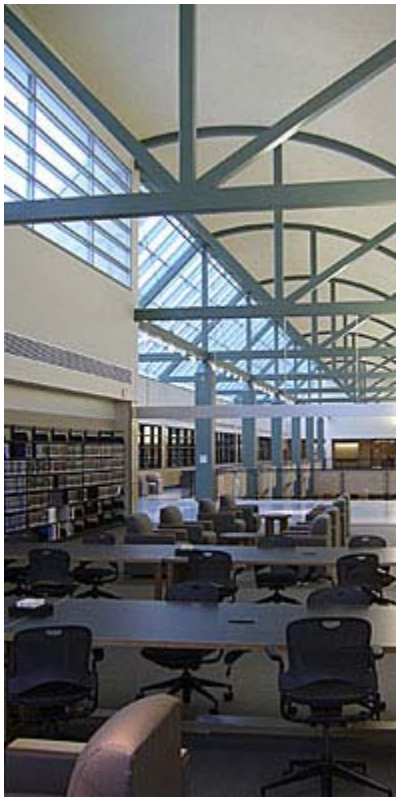
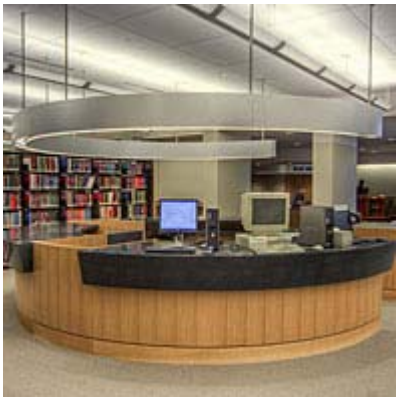
Presence management, the ability to see who's available by phone, email, or IM before trying to contact them, was a relatively new concept, but one that many ACPL user groups felt could save a lot of time throughout the organization. The Mitel Your Assistant software for the desktop seemed to be well integrated with the phones and provided a nice suite of presence management, desktop call management, drag-and-drop conferencing, and call management.

Enterprise instant messaging also ranked high on the list of efficiency enhancing functions because it could reduce email exchanges and telephone tag. It was also desired to have the instant messaging extend to the Spectralink Wi-Fi phones.

MVD Communications, a Cincinnati, Ohio-based VAR, carrying Avaya, Mitel and Siemens, served up a very well designed Mitel solution that included all of the base functionality and many of the desired optional functions within the library's budget.

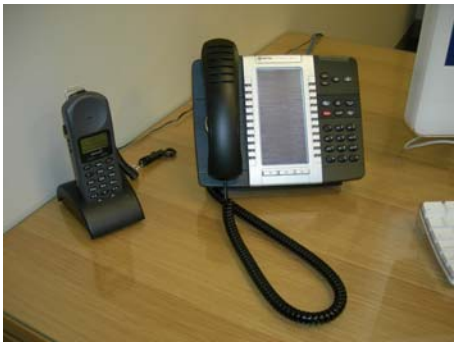
MVD together with Mitel proposed the inclusion of a Microsoft® Office Live Communications Server 2005 package to run in conjunction with Mitel's phone system manager and voice mail system in order to provide the extended functionality desired by the library. A middleware solution was created by MVD to send text messaging to the Wi-Fi phones and return simplified responses. The Live Communications Server 2005 package appeared to be a good solution even though ACPL uses Novell's GroupWise for eMail and calendaring and not Microsoft® Outlook and Microsoft® Exchange Server.

After a very thorough analysis of all the proposals, the ACPL selected MVD's Mitel-based solution based on the total value of the package, clarity of the technical solution, confidence in the manufacturer and VAR, and the proposed solution's flexibility to grow and adapt to their employee and client needs.

Components of the ACPL solution include:

2	Mitel 3300 MXe Controllers (offering redundant parallel operation at two locations)
1	Mitel Enterprise Manager
1	Mitel OPS Manager
288	Mitel 5340 IP Phones (back-lighted display phones)
121	Spectralink i640 Wi-Fi phones
36	Mitel 5201 IP Phones
17	G-Tel 2050 pay phones
1	Mitel 5550 IP Console (operator console)
50	ACD agents
50	Unified Messaging Licenses
1	Microsoft Office Live Communications Server 2005
1	Microsoft Telephony Server
1	Mitel Live Business Gateway
1	Spectralink SVP: server
1	Spectralink OAI server
6	Mitel Wireless LAN Stands for the 5340 IP Phones.



Functions include:

- All the usual phone functions
- Enterprise wide full-featured voice mail
- Wi-Fi network throughout all facilities
    - ACPL secure Wi-Fi phones
    - Wi-Fi conference phones
    - Public Internet access
    - ACPL secure network access
- Presence and call management
- Text messaging to the desktop, phones, and Wi-Fi phones. Simplified response from Wi-Fi phones and desktop phones
    - Optional text messaging from ACPL public website to specific ACPL personnel.
    - Optional text messaging functionality between ACPL enterprise system and AOL, MSN et al. externally
- Teleworker capability
- Hot desk functionality
- ACD. Agents can logon anywhere in the enterprise
- HTML and text messaging to the desk phones
- Directory look-up and display on desk and Spectralink phones
- Six Wi-Fi bases for the 5340 phones to allow conference phones to be used anywhere in the ACPL enterprise

The system was installed in the branches and temporary main library in October 2006 so employees could get trained and oriented to the new system prior to the move to the new main library when it opened in mid January 2007.

The entire project from the beginning of planning to full cut-over was 19 months. The planning, design, and vendor selection phase was approximately 14 months. Implementation took five months.