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Mobility and Higher Education: Not Just the Next Big Thing

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A lot has changed since colleges and universities installed their first landline telephones. In fact, in terms of information technology (IT), change is the only constant as each freshman class and newly recruited faculty member brings to campus a new set of technology expectations that institutions are challenged to meet.

Students, faculty, and higher education administrators are prototypical mobile workers. While many still use institution-owned devices such as corded telephones and desktop and laptop computers, increasingly their personal devices, including cell phones, smartphones, and audio and video players, are neither owned nor managed by the institution. How can an institution retain ties to a mobile, electronically oriented constituency that contracts for voice, data, e-mail, and Internet services from a diverse set of highly competitive commercial providers that offer tempting, cool devices and service plans catered to a mobile workforce? Is it time for higher education to pay attention to other knowledge industries that are developing their mobility strategies? What should we be learning from HP, Google, ESPN, Fox, Microsoft, and *USA Today*?

The University of Cincinnati (UC) has chosen to meet the mobile technology challenge with a program called UC Mobile. UC is an urban, public, research university with a student population of roughly 35,000 and a faculty and staff population of 14,000. It graduates 5,000 students per year and is the largest employer in the Cincinnati region. Like comparable institutions, UC has observed that the cell phone, not the laptop, is the ubiquitous connectivity device on campus. Mobility is not just “the next big thing”—it is yet another transformative technology.

This research bulletin describes the UC strategy for addressing a fundamental shift in communication technologies in higher education and for meeting—or exceeding—community expectations for contemporary productivity tools on campus. It covers the decision factors and service models that UC is implementing in fall 2006 through its UC Mobile program. Joining the growing numbers of institutions that offer mobile services,¹ UC offers its service to the freshman class, with a plan to expand and enhance the offering in coming years.

Highlights of Mobility in Higher Education

The age of mobility is causing higher education to examine some long-held assumptions about IT infrastructure—starting with wireless data services but now extending to telephone systems. According to Gartner predictions (.7 probability, 2005), “By 2006, data network access from personally owned mobile devices will be the leading problem facing IT managers” (Yanosky, Zastrocky, & Harris, 2004, p. 2). The bigger challenge will be meeting the expectation for servicing disparate devices that IT managers do not own, control, or even manage. UC operates more than 14,000 phone lines. In light of the nearly universal adoption of cell phones among students, faculty, and staff, the institution is questioning what the future holds for these landlines, corded telephones, and standard telephone services. Providing long-distance service (and its associated

revenue) is a thing of the past. Mobility presents an array of complicated issues that all institutions must face eventually. Should the institution continue to pay for voice mail service on dormitory room telephones when students rely primarily on cell phones for connectivity? Are corded phones and landlines a viable investment for the institution, or should the funds be reallocated to more on-demand services? When will the PDA-smartphone become as ubiquitous as the cell phone, and has it already trumped the laptop as the connectivity device of choice on campus? What should the institution be doing now to serve its mobile community?

Motivators: Buggy Whips?

Are we really providing connectivity on campus? Are we addressing the realities of the mobile society? In the *ACUTA Journal of Communications Technology in Higher Education*, Pat Scott (2006) asked the \$64,000 question about today's students: Are students more connected than ever, and yet more difficult to reach? Scott reported that in January 2006, Austin College in Sherman, Texas, checked every student voice mailbox and found that only 12 percent of the students had set up voice mail and only 5 percent were using the mailboxes regularly. When students bring their cell phones from home, reaching them is often long-distance from a campus phone. These costs can mount quickly, and they are especially onerous when the students are located right down the hall from the caller. Of course, the primary driver for maintaining landlines is for 911 emergency services for safety. Alex Konialian, telecommunications analyst at Towson University, cautioned, "Before removing land-line dial tone from the dorms, I would strongly advise consulting an attorney who specializes in risk management issues.... I would never even think of terminating land-line dial tone in a dorm" (Scott, 2006, pp. 22–23).

An anecdote worth telling describes the driver for the rethinking of UC's connectivity environment. In fall 2004, a new student government president came into office with an IT agenda (this alone is a telling commentary on our new society). It focused on connectivity—on basic connectivity needs such as good rates on residence broadband and better cell phone plans than the consumer cacophony available. (It focused on other things too, such as increased use of the course management system for course reviews, student government, organizations and such, but that is another story.) Couldn't the university leverage its buying power to get decent cell-phone rates? We began to think: each of our nearly 35,000 students had at least one cell phone—and none were "ours." Faculty members were using their cell phones too, and none were "ours." This reflected both service and business deficiencies. Worse, we were still selling them corded phones. When viewed this way, we were selling buggy whips. Were we really providing the high level of connectivity we thought we were?

Of course, this thinking applied to faculty and staff as well, but the larger and more immediate market was students, and we chose to begin with them. We formed focus groups to see what the new service model would look like, and then followed it with technology and business models. This led to the UC Mobile project and the branded Bearcat phone, named for the UC mascot. If students were relying on cell phones for

connectivity, why shouldn't those phones carry the UC brand and provide services that would make UC a distinctive and more desirable place to go to school?

The Service Model

University students have enough mandatory requirements: we were committed to providing a mobile technology program that was optional rather than obligatory. We were not going to require the purchase of a high-end phone. Instead, we would offer good, better, and best service plans that were so well designed that students would opt to convert to them once their contracts with their current cell service providers expired. We had to identify a major cell-phone carrier as our partner in this endeavor. Our vision was clear, but in IT, as in other areas, vision is expressed through solid programs. We credit IBM Business Consulting Services with helping us translate our vision into specifications that resulted in a comprehensive request for proposal. That competitive procurement was won by our local exchange carrier, Cincinnati Bell Telephone, which was eager to help UC build an infrastructure that would be mutually beneficial in delivering the services we envisioned. The following “must-haves” for the Bearcat phone were defined by our focus groups:

- *Coverage.* As on most other campuses, UC’s campus had a growing mix of client-selected cell service providers. A university-managed service could be designed for maximum coverage, an immediate added value for the Bearcat phone—and a necessary one for some for the services, such as security. We required a minimum of “three-bar” coverage across at least 90 percent of the campus to ensure that typically hard-to-reach areas such as underground garages would have connectivity.
- *Integration with current telecommunications services.* The Bearcat phones should be able to port UC landline numbers, employ 5-digit dialing, and use integrated voice mail, offering the same features as the corded campus phone plus enhanced ones such as e-mail.
- *Unlimited minutes and text messaging.* We learned that although students spoke in terms of unlimited minutes, they actually preferred a basic plan that provided anytime nationwide minutes, with unlimited minutes an optional add-on.
- *Below market rates.* Bearcat phones and service plans must be priced below prevailing market rates, reflecting the buying power of the university.
- *Flexibility.* The Bearcat phone is not limited to one model. Users may select a particular phone/device from a variety of popular models, from the no-cost phone of the entry-level (good) plan to the high-end Treo, BlackBerry, or K-Jam (Windows Mobile) offerings. Of course, the Bearcat phone is tied to national service so that it functions as a normal cell phone when outside the campus and Cincinnati metro area.
- *University support.* The Bearcat phone will be supported in the same way as our other IT services—from the IT Help Desk—a service that the community has come to depend on and value.

In addition to these must-haves, the Bearcat phone applications are the critical (and cool) added value features that differentiate it from other offerings. Without these UC-centric applications, the Bearcat phone would be competing in a commodity market, which is not the market we wanted to target. It is important to note here that all services and features are designed to work on all levels of Bearcat phones, from entry level to high end, although the higher-end phones allow for programmable buttons and location-based services while the lower-end phones might require a key combination to access a service.

- *Personal security.*² A major reason to have a cell phone is for personal security to call for help or be available to others in an emergency. Security emerged as a desirable and important new feature that the Bearcat phone could provide in the form of a mobile help “button” that connects the caller directly to UC’s Public Safety Department from anywhere on campus.
- *Academic support.*³ If students opt in to this feature they receive text messages whenever their instructors make additions or changes to courses that are delivered by the university’s learning management system (Blackboard). Instructors can choose which changes will generate the alerts. Those Bearcat phones that use a plan that includes data service can also link to the online content.
- *Lifestyle support.*⁴ Student government, in particular, wanted a shuttle bus notification system to reinforce one of their student service initiatives. This application enables users to see not only the actual time of arrival for the next shuttle bus at their selected stop but also the arrival times for the next two shuttles.

These three applications are part of the fall 2006 program rollout, along with porting the UC home page, calendar, and other services from the Web onto the cell phone. Other applications that are slated to be developed over the course of the year include social networking (for example, the easy creation of text messaging call lists) and others that the connectivity environment not only facilitates now but will allow in the future.

For a full description of the UC Mobile service, see <<http://www.uc.edu/ucmobile/>>.

The Service Rollout

Campus IT projects should, of course, be designed for specific clients with their involvement and support, not for the convenience of the IT department. In the case of UC Mobile, we recognized that the project involved several different constituencies. In keeping with new IT service initiative practices, we intended to manage a series of pilot projects before fully rolling out the UC Mobile service program. For example, we planned to pilot the service with students in a single dormitory; faculty and staff in a single college (of the university’s 15); and staff in a single administrative unit (for example, the athletic department). But careful intentions were overtaken, in this case in a positive sense, by the eagerness of some of those constituencies—and the immediacy of the change around us in this space.

UC Admissions wanted the service made available to all 4,000 incoming freshmen. Suddenly, the question of mobile technology was raised to a higher priority. IT administrators began to ask if we could use the buying power of the university to secure advantageous cell-phone rates for our community. Students want a mobile service that is inexpensive, and faculty members want a service that is powerful. How can IT meet these service expectations?

UC decided to approach the challenge from the perspective of constituencies. We addressed students first, because they stood to gain the most from concentrated support from IT. It was already summer, and the goal was to roll out the service to all freshmen at the start of classes in the fall. Focus groups had to be organized; wireless antennae had to be installed across campus; applications had to be developed; cell-phone devices had to be chosen; funding had to be obtained; and campus liaisons, parents, and students had to be kept informed. The summer of 2006 promised to be a busy one.

Funding Model

A fundamental principle of the UC Mobile project as it applies to freshmen is that the program must be totally self-supporting and self-sustaining. The university views students as “private citizens” who are opting into the service, so the UC Mobile service is designed to compete with other carrier plans. If UC can’t offer a price for students competitive with other providers like Sprint, T-Mobile, or Verizon, then UC believes it should not be in the mobile technology business.

The set of assumptions on which this philosophy is based changes, however, when the existing services, costs, and revenues of the university’s business phone system come into play. For example, will faculty and staff want to exchange their \$33 per month corded phone for a smartphone with more contemporary mobility features at a higher monthly cost? If so, how will the institution finance this exchange? What policies will govern business and personal use and subsidy? To what degree will smartphones be supported institution-wide? What happens when phones are lost, stolen, or need repairs? IBM has acted as a technical adviser, infrastructure development supervisor, and construction manager for the UC Mobile project and is currently working with UC to devise a robust business plan for mobile technology across the institution. The current challenge is to develop a financial model that will stand on its own—one that does not merely add a new service but rethinks the concept of campus connectivity.

As higher education institutions wrestle with the quickly changing world of mobile technologies, many options are opening up. Campuses that wish to outsource their cell-phone operations can turn to companies emerging in this market such as Rave Wireless, which builds turnkey operations for colleges and universities. Through a hosted university program, for example, an institution can provide broadcast alerts, e-mail, course management applications, campus directory, community communication channels, administrative capabilities (such as the ability to restrict users and manage content), and university application program interfaces. As a rule, UC outsources services only strategically, often finding that a large research university has the expertise and economies of scale to provide sophisticated services itself. Thus, it has subcontracted to firms to develop the applications that the institution will operate and

service. In addition, UC will look to its own computer science and information systems curricula and students to design additional applications, which are currently built on the Microsoft .NET framework. In this way, the UC Mobile program can further strengthen institutional ties from the academic perspective. With an exceptionally strong structure for IT governance at UC (Albrecht & Pirani, 2004), officials believe that the program holds promise for affecting retention, school spirit, and school bonding.

What It Means to Higher Education

An institutional mobile technology strategy is another element to be considered as higher education institutions focus on competitive differentiators such as

- improving student retention;
- creating community;
- leveraging resources;
- providing high-quality teaching, learning, and research; and
- playing a positive role regionally.

Mobile strategies based on sound financial analyses can, of course, be good for the institution's bottom line. At UC, for example, nearly all 35,000 students have cell phones, and increasingly, many of the 14,000 faculty and staff members want smartphones. These numbers translate into large constituencies and leveraged buying power for the institution. Carefully negotiated plans make good business sense across the board—for institutions, for wireless vendors, and ultimately for students, faculty, and staff—especially if they allow for easy conversion from a personal or family plan to the institution's plan. The UC plan allows students to retain the mobile phone numbers they came to campus with (if within the carrier calling area codes) and allows families to add the UC rate plan to a family plan account so that parents whose plans include the student can make a single payment for the family's plan. In addition, for faculty and staff, existing university numbers can be ported to the Bearcat phone and a second, personal line can be added, among other features.

Perhaps even more significant than the business case, though, is to build a strategy based on applications people really need that can be delivered on mobile devices. It is these applications that will differentiate the institution and provide a platform to enhance learning, convenience, and safety for the institution's constituents. In the early days of mobile phones, families encouraged each other to carry a phone for use in an emergency, contributing both to safety for the individual and peace of mind for loved ones. By providing three-bar coverage for 90 percent of the campus, including parking garages, UC Mobile's help button extends that sense of security to a user from anywhere on campus. Likewise, receiving a notification when a professor posts grades or new material to online courses is a courtesy and convenience for students and faculty alike.

One could argue that questions about mobile technology center not around whether it is a good idea for higher education but rather on when and how to deploy it. To one degree or another, nearly everyone wants mobile connectivity. Debates about whether wireless is a good idea for the classroom or lecture hall can be heated, but with the growing concentration of smartphones, the question is largely moot. With the increasing use of and demand for wireless appliances, the community is going to use them whether or not the institution supports them. Institutions can use wireless technologies to enhance services to students, parents, alumni, faculty, staff, donors, and campus visitors, as well as to strengthen relationships with local vendors and the regional community by becoming a wireless hotspot. The remaining question for higher education is, how?

Key Questions to Ask

- Does our institution have an articulated mobility strategy? Is a strategy statement publicly available?
- What is our campus's responsibility for connecting the various communications devices that students, faculty, and staff bring to campus?
- How are the decisions about mobility governed at our institution?
- What strategic partnerships are in place to explore and expand our mobility strategy?
- How can we ensure that students have convenient access to campus security and appropriate learning tools?
- To what degree is our campus able to provide faculty and employees with the proper mobile devices to help them do their jobs?

Where to Learn More

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Endnotes

1. Corporate grants from companies like HP, Microsoft, and Intel fund mobile technology initiatives at universities and colleges across the globe. Many U.S. institutions, including Allen University, Arizona State University, Baruch College of the City University of New York, Montclair State University, and Wake Forest University, have developed mobile technology programs on their own or in response to these grant opportunities.
2. This application was developed by NuSoft Solutions Inc. in conjunction with Microsoft.
3. This application was developed by clearTXT Inc.
4. This application was developed by NuSoft Solutions Inc. in conjunction with Microsoft.

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