EDUCAUSE BRIEF

Spotlight on Mobile Computing Series

The Future of Mobile Computing

This brief summarizes the EDUCAUSE webinar "The Future of Mobile Computing" (part of the Spotlight on Mobile Computing Series), held April 25, 2011. The speakers were Joanne Kossuth, Vice President for Operations and Chief Information Officer, Olin College of Engineering, and educational technology blogger Alan Levine, former Vice President Community and CTO, New Media Consortium (NMC).

Few concepts dominate the conversation in higher education today like mobility. Almost every college student uses a mobile device for both personal and academic reasons. Given this environment, institutions are evaluating how mobile technologies can enhance classroom activities and learning, as well as administrative functions.

An enormous array of mobile devices is making its way to college campuses. The fast-changing world of technology and applications makes a case for device-agnostic mobile computing strategies, though the functionality of native apps can be compelling. To promote the most innovative uses of mobile technologies, institutions must address challenges related to security, faculty concerns, IT support, and accessibility. With tight budgets in higher education, collaboration with students and nonprofits can help colleges and universities advance a mobile computing agenda.

Key Takeaways

Mobile phones are becoming ubiquitous for communicating and for Internet access.

Real-time communication has made mobile phones an indispensable tool. Research suggests that as many as 25% of Americans have cancelled their landline telephones and are using mobile devices as their primary means of communication. For many, carrying a mobile phone is now at least as important as carrying a wallet.

Connectedness and interactivity are driving adoption of mobile technologies in higher education.

Being personally connected with others is extremely attractive to mobile users. Among college students, this desire to stay connected has intensified with every successive generation, and mobile media are engaging and interactive. As institutions adopt new mobile technologies, they should look beyond using these devices for teaching and examine how mobile computing can increase engagement and cultivate strong communities of learners.

Mobile computing has the potential to transform learning.

Mobile devices engage students in learning in different ways. For example, at Olin College of Engineering, mobile applications allow development projects to be integrated into the classroom learning experience. Every two weeks students participate in "mobile sprints" where they develop new apps. Social networks, accessed via mobile devices, also enable students to learn interactively. Students are constantly connected to each other and to relevant materials.

Because devices and applications evolve rapidly, institutions have a strong incentive to remain device-agnostic. The concept of

mobility is more important than the specific devices used to attain that goal.

> ***"Institutions need to think multi-platform. It's not just about putting Blackboard on a phone."***
> ***— Alan Levine***

Widespread innovations are resulting in creative, compelling, education-focused mobile applications.

As mobile devices have become more common on campuses, many innovative projects have emerged that engage students and change the way faculty teach courses.

- *Purdue University's Mixable app.* Mixable enables students to create online study groups within Facebook. Participants can also sync and share documents via Dropbox. The goal is to blend students' social and academic lives into a more engaged learning experience.
- *Olin School of Engineering and the Stanford Entrepreneurship Challenge.* Students at Olin innovate through short-term projects that provide immediate feedback, promote teamwork, and create entrepreneurial spirit. Olin students who created a location-based file-sharing platform fared well in the recent Stanford Entrepreneurship Challenge.
- *The Lively Sketchbook.* About a year ago, Ruben Puentedura started the Lively Sketchbook project. He discovered that iPhone apps provide a rich set of tools for analysis and creativity across a broad range of education scenarios.

To address privacy issues, colleges and universities must educate students and implement less complex security systems.

Mobile devices have similar privacy issues as other online technologies. However, location-enabled mobile apps create an entirely new set of security issues on campus. Since privacy is often not top of mind for faculty and students, it is essential that colleges and universities provide education and generate awareness about online security. Students often view risk in a more serious light after hearing about bad experiences others have had. To be effective, mobile security measures must require less thinking and fewer levels of complexity.

Several factors impede implementation of mobile technologies in higher education.

As the higher education sector implements mobile computing, it faces challenges ranging from development resources to faculty, IT support, and accessibility issues.

- *Development resources.* Since many colleges and universities lack extensive resources devoted to the development of mobile technologies and applications, strategies are needed so institutions can partner with one another, as well as with private-sector organizations.
- *Faculty attitudes.* Faculty are often reluctant to use mobile technologies as a tool for problem solving and engagement. In addition, the quickly changing world of technology makes it difficult for faculty and higher education institutions to be "the experts." Colleges and universities need to partner with students rather than trying to be gurus. A collaborative approach to learning about mobile technologies is required.
- *IT support.* Support for mobile technologies is challenging for college IT departments, given the wide array of products available to consumers and the pace of change. IT can no longer dictate which technologies students will or won't use. The IT function has shifted from "driving the bus" to "acting as the mechanic." Still, expectations must be set about what will be supported by the campus IT department. For example, institutions should define supported integration points, such as e-mail or academic systems.
- *Cost and accessibility.* Not all students may be able to afford mobile devices, which must be acknowledged. In addition, accessibility for students with disabilities lags behind the leading edge. More work is needed on mobile devices' voice recognition and activation functionality.

Faculty are more likely to embrace mobile technologies that enable them to work smarter.

Mobile technology training programs are most successful when they show faculty members how to work more efficiently. Training should be interactive and tap into teachers' existing habits. Olin College of Engineering sponsors several programs to teach faculty about mobile computing. Teachers educate one another through faculty-development modules. In addition, "What's Working Wednesdays" provide a forum where faculty can share information. The college also enlists outside speakers and organizes working groups where students provide feedback about what they want the school to provide.

Successful mobile computing strategies link with institutional goals and meet constituent needs.

Mobile computing strategies are most effective when they are tied to institutional goals—including those related to teaching and learning, admissions, fundraising, and emergency planning—and leverage existing, available resources. When developing mobile computing strategies, it is essential that colleges and universities have an ongoing conversation with constituents about their mobile technology needs. A strategy that supports multiple devices is also a necessity.

> ***"The first question is 'Where do you want to start?' I would argue that you want to start with how you tie into your institutional goals and identify the resources that are available."***
> ***— Joanne Kossuth***

Despite budget shortages, colleges and universities can advance their mobile computing goals through collaborative activities.

Although funds may be limited for mobile initiatives, opportunities exist for institutions to collaborate on and off campus. For example, some organizations will loan mobile devices to universities for 30 days. Grants are another option. Joanne Kossuth mentioned a grant program focused on mobile apps and regional public transportation. It also is possible to leverage resources on campus. Rather than assigning students abstract exercises, ask them to engage in real development work that will benefit the school.

Success with any collaborative program requires time and energetic people. Demonstrable wins, however, make it easier to request additional financial support from the institution.

Access this and other briefs in the Spotlight on Mobile Computing Series, as well as recordings, transcripts, and slides from the webinars, at http://www.educause.edu/Resources/Browse/SpotlightonComputing/40259.