



A STRATEGY PAPER FROM: **CENTER FOR
DIGITAL
EDUCATION**

A CONNECTED LIFE

A look at mobile strategies for schools, colleges and universities



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The Millennials have the distinction of being the first generation that has not known life without a mobile phone. Keep in mind, their definition of “phone” includes telephone, camera, media player and computer, and with these devices in hand, the Millennials — the generation aged between 14 and 28 — are establishing new habits and shaping the future.

Consider how most phone calls now begin: “Hi. Where are you?” (Or in student terms, “Where you at?”). A generation ago, these words would have been foolish. Phone calls once had a destination — home, the office, a friend’s house; now phone calls have a recipient, no matter the location. To Millennials, this is the norm. They have grown up during a period of democratization of digital tools, where telephony, messaging, photography, music, gaming and a growing number of useful applications all come together on mobile devices that are accessories to students, professionals and just about everyone else.

Millennials are also at the center of an increasingly tense situation. On one hand, information should be free, but that same information has distinct value under the notion of intellectual property. This generation is often characterized by social operating systems, collective intelligence, data mashups, grassroots video, collaboration Webs and mobile broadband.

The Millennials think, work and act differently, forming relationships through a new language of text messaging and wide open social networks such as Facebook, LinkedIn and dozens of others. These methods are being used on campus right now.

Mobile computing and mobility have, for many people, meant laptop computers and dedicated wireless networks. Increasingly though, to the upcoming generation, mobile computing is literally in their hip pocket. One survey shows 94 percent of college students own a mobile phone. And up to 90 percent are choosing not to use a traditional landline telephone in their dorm rooms, instead using the mobile phone as their single means of communication.¹

Smartphones offer an opportunity to connect students in new ways, providing a ready-made linkage between students and information.

This white paper from the Center for Digital Education examines the evolving landscape of mobility with particular attention to the intersection with learning and education.

STUDENTS IN A SOCIAL OPERATING SYSTEM

**“I was dreamin’ when I wrote this
So sue me if I go too fast...
Tonight we’re going to party like it’s 1999”
— Prince**

PARTY LIKE IT’S 2020

The once common student pastimes of playing outside and socializing with neighborhood kids have changed radically since Prince penned his pop vision of the new century. The always-connected 21st-century student interacts in ways that most never visualized just a decade ago. But, to be clear, they are still partying, dreaming and going faster than other generations.

It is no accident that both MySpace and Facebook were created on campus. Students gravitate toward online social operating systems because they invented them. Facebook, a strange land to those who formed their social skills before the days of instant information access, reflects the Millennials’ times, their preferences and their view of the world.² They speak a language all their own, choosing to IM and text each other rather than call. Seventy-six percent use instant messaging, with 15 percent of this group logged on 24/7.³ AAF MEGO B4 2 LONG. BTA IT IS QIK TO KIT.⁴

It is easy to dismiss the importance of social networking and always-on communication, especially if you are unfamiliar with them. However, considering that anywhere from 75 to 90 percent of college students have a Facebook account,⁵ it is clear that social networks are changing not only how youth are interacting with each other, but also how they interact with their world. They are becoming social operating systems.

Texas Rep. Mark Strama tells the story of using high school interns in his recent re-election campaign. One of the many jobs of interns is to walk the neighborhoods, knock on doors and ask people to support their candidate, and set up a sign in the front yard showing this support. It was the middle of a Texas summer and the young interns were not very excited about days spent out in the heat. Instead, they devised their own plan. They established a Facebook account for the campaign. They then reached out to anyone with an account who lived in Strama’s district and asked if they could be friends. Creating the electronic equivalent of signs in the front yard, they asked their new friends to put a statement of support on the page, link back to Strama’s campaign site, and pass the word to other friends. Within a week, the campaign’s Facebook had over 5,000 new friends.⁶

Sen. Barack Obama’s presidential campaign dwarfs these numbers, with 761,910 Facebook supporters in April 2008, more than double what it had been a year earlier.⁷ Senators Obama, John McCain and Hillary Clinton who, at press time, were the leading contenders in the 2008 presidential campaign, had adopted similar online strategies — their “sites encourage online donations at every turn, post all manner of video in the hope of having the next viral hit and try to engage voters through social networking. Each of the three campaigns have either an official or independent presence on seven of the big ones (Facebook, My Space, LinkedIn, Flickr, Eventful, Twitter and the baby boomer-oriented Eons), but the Obama campaign has extended its reach to social networks targeted at the African-American, Asian, Latino, faith-based and gay communities.”⁸

Second Life carries social networking a step further — merging gaming, fantasy and social networking. The technology may have once seemed silly to baby boomers — a Web-based, 3-D virtual world where users create an avatar (an animated graphical representation of themselves), and interact and maneuver these avatars in a virtual world created by the participants. But some organizations are venturing into Second Life to hold meetings, test concepts, train employees and recruit young workers. Dan Ross, chief information officer for the state of Missouri, and his staff created a presence in Second Life in conjunction with various Missouri libraries and universities to share space on what’s called an “island of interest.” Ross’ philosophy is that, to attract young talent, “you have to go where the troops are.”

“We’ve been establishing our presence out there (on Second Life), working up information about IT jobs in Missouri, and really working on making our image out there bright and crisp,” Ross said.⁹

MOBILE MILLENNIALS INVENTING THE FUTURE OF WORK

Add to this new way of socializing and interacting what is also known about this generation of students: they are mobile. More than ever before, the importance of place — where to work, gain your education and socialize — has changed. Increasingly, the computing platform of choice is pocket-sized. Students are now interested in mobile phones that double as cameras, text messaging devices, Internet-ready computers, music players, and in some cases, even video players. Forward-looking universities are working to move information to the format that the students use: the mobile phone, and increasingly, the smartphone.

In 2005, Kogod School of Business, the business school for Washington D.C.’s American University, launched an

initiative that recognized the connection between students and mobile technology. Dubbing their program the “Kogod Edge,” the school provided every incoming graduate student a smartphone.

The intent is to push content to students, not wait for the students to come to the school’s Web site or e-mail. “The days of Web sites being relatively lean are over,” said Robert Ransom, Kogod’s director of marketing and communication. “They’re passive storage engines, which is presenting an obstacle to getting information out. Our students will subscribe to streams containing the specific information they need.”

Instead of simply posting information on the school’s Web site or sending out mass e-mails, professors and administrators communicate with students via RSS (alternatively known as really simple syndication or rich site summaries), which can also be accessed by conventional computer.

Users have a special news reader, which appears as an icon on their smartphone or desktop, from which they can access the various streams, including notices of guest speakers, admissions information and career opportunities. Streams also can provide video feeds and links to Internet sites.¹⁰ Other applications for a smartphone include programs that give real-time trading information — bonds, equities, funds — providing difficult-to-understand information in a format familiar to students.

learning styles — visual, auditory or kinesthetic¹³ — and suggests results flow when at least two methods are employed. Smartphones support all three, and may provide important advantages in serving distant and disabled learners.

The 2007 Horizon Report states there is a growing expectation for higher education to deliver services to mobile and personal devices as students put pressure on campuses to deliver meaningful content over mobile devices.¹⁴

One example is from the University of Maryland. The university supplies smartphones to all 250 of its Master of Business Administration students. The university hopes to help its MBA students learn how to deal with always-on communication and manage 24/7 access to people and information. It also gives them experience with the technology they will likely be using when they are in the business world.

“By using these devices, inside and outside the classroom, our MBAs will gain a greater understanding of how information technology can be maximized to create innovation and drive business growth,”¹⁵ said Howard Frank, dean of the Robert H. Smith School of Business at the University of Maryland.

North Carolina’s Project K-Nect is another example of using mobile devices to change the way students are taught. The project takes advantage of two apparent facts: students rarely see a real-world connection between math and science classes and their lives; and their preferred communication method is text messages or IM. About 100 students in four North Carolina schools were provided smartphones for use in their math classes.

Each math class has a portal set up by the teacher where the teacher can push out problem sets and post multimedia animations and simulations explaining algebra problems. The teacher has a content management system that includes MPEG video, Flash multimedia videos, PowerPoint, Word documents and Web sites, which provide students with information.

The students can work on the problems on their devices but also can use instant messaging to communicate among themselves or post a blog entry. They can even create and post a video explaining to other students how they did a certain problem.

One early result is it changed the interactions of students. Students too shy to speak out in class joined in the conversations more often. One student had been homebound because of illness. He is good at math and his classmates know this; through the smartphone, he is able to participate in classroom discussions and help others with problems.¹⁶

SMARTPHONES AND PEDAGOGY

“The time is approaching when mobile phones will be as much a part of education as a book bag.”

— Horizon Report 2007

The habits of students are challenging universities and colleges to rush to catch up. The 2007 Horizon report holds that, “The unprecedented and instant access to information creates a new and continually changing learning space.”¹¹ In fact, Thomas Friedman calls this access one of the 10 world “flatteners”, stating, “Never before in the history of the planet have so many people — on their own — had the ability to find so much information about so many things and about so many other people.”¹²

However, the challenge of this fast-paced change also presents an opportunity. Academic research has identified three

GETTING THE WORD OUT: EMERGENCY ALERTING

Regrettably, campuses are no longer havens for students. Recurring incidents have made reliable, real-time, all-hazard emergency notification an essential infrastructure for most institutions. The very nature of campuses makes notification of any kind a challenge. Not only are buildings often dispersed over a wide area, but also students and faculty come and go throughout the day and night. Smartphones can play a vital role in keeping students, staff and faculty safe on even the most sprawling campuses.

In New Jersey, Montclair State University requires all entering students to own a mobile phone that is GPS and Web-enabled. An array of academic, social, safety and wellness, transportation, utility and administrative services are delivered to students with these devices. MSU provides the phones and a range of plan options.¹⁷

The University of Kentucky, with more than 35,000 students and faculty, also chose to address the challenge of real-time notification using mobile phones and smartphones. Although the 687-acre campus contains numerous emergency phones that can be used to contact security officials, the school had no way to proactively alert its faculty and students of safety issues. The proliferation of wireless devices provided a compelling impetus to develop an opt-in messaging solution.

"Cell phones and other wireless devices ... are the communications appliances of choice for our faculty and students," says Doyle Friskney, associate vice president of Information Technology and chief technology officer at the University of Kentucky. The university's messaging and alerts portal allows staff members, students and alumni to sign up on the portal, set their preferences and begin automatically receiving alerts.

Initially intended as a security-oriented announcement conduit for on-campus faculty and students, the portal has quickly become an extended vehicle for communications of all types. The solution has enabled the University of Kentucky to enhance campus communications, launch a flexible messaging solution for an increasing number of university groups, and prepare for future outreach to its various communities.¹⁸

GETTING ORGANIZED: MOBILE CALENDARS

As institutions and vendors begin using smartphones and other handheld devices more and more for the preferred method of connecting with students, calendaring should be one of the first applications put to work.

Consider the advantages to both students and instructors of having easy-to-read calendars delivered directly to students in a way that is easy to understand. A popular organizational method is David Allen's "Getting Things Done," and its associated 43 folders. Getting Things Done is a method to increase productivity at work and at home. It relies on a number of decidedly low-tech gadgets, such as Post-it notes and electronic label makers. The premise is straightforward — when a task comes to mind, write it down, schedule it and file it in the folder that indicates when it is to be worked on. One folder for each day of the month, one folder for each month; a maximum of 31 days in a month, 12 months in the year, 43 folders. The daily folders are reused each month. This clear-cut method of managing time and tasks seems ready-made for a handheld device. Instead of writing Post-it notes and scurrying home to load these notes in the appropriate folder, the smartphone becomes both Post-it and folders in one device.¹⁹

SEE IT NOW, SEE IT SMALL

Reinforcing educational content — replaying missed lectures and even viewing other classes — is an important part of solidifying learning. Mobile devices may fit with the lifestyle and learning preferences of the Millennials, but they might need to wait until subsequent offerings provide sufficient bandwidth, and related video and audio fidelity, to deliver educational content.

While the bandwidth may not yet be available to deliver video, educational resources can be used by students now. With a little imagination, there are many possibilities.

San Francisco Museum of Modern Art delivers information directly to visitors using smartphones and podcasts. The concept is simple: Visitors like to know what they are looking at while they are looking at it, but providing the information can be problematic. The little label commonly found next to an artwork could actually distract the visitor from the art.

Peter Samis, associate curator and program manager of interactive education technology at the SFMOMA, said he had seen people studiously read wall labels and then barely look at the art the labels describe.

"Twenty seconds on the label and two seconds on the artwork," said Samis.

Enter handheld technologies and the personal audio tour. Audio tours slow down museum visitors, encouraging them to spend more time with the art as they learn about it.

The content is generally accessed with a telephone number posted at a specific artwork. Visitors can access

information about it by tapping in a code, like *278 (ART), on the keypad. The museum offers a number of online “artcast” tours that smartphone users can download before going to the museum. The museum also provides visitors with loaner phones preloaded with digital tours.²⁰

Some classrooms are also taking advantage of the ability of mobile phones to record data. In the United Kingdom, students in a grade school geography class use mobile phones to record data — text and pictures — in the field and submit it to the teacher, who remains in the classroom. Enter a device such as a smartphone, and this data could be sent directly to a back-end database and aggregate results posted in real time. Students can create mini-documentaries easily and cheaply with their phones; online tutorials for phone-based moviemaking offer tips and techniques. In Australia, a grant-funded project invited filmmakers to write and shoot five-minute movies specifically for the mobile phone platform, a technique that has been used in visual literacy and cinema courses.

In fact, the shift to a smartphone as the preferred computer platform has prompted Massachusetts Institute of Technology to focus computer programming courses on phones. In a joint program with the University of Nairobi, MIT offers courses such as “Mobile Phone Programming for Entrepreneurs” and “Introduction to Mobile Phone Application Development in Java”.²¹

In a similar initiative, the University of Guelph-Humber in Toronto created an education program to integrate smartphones into the computer science coursework, with a specific goal of teaching students how to program mobile devices. Students were provided with smartphones and given specific programming assignments. The goals were not only to teach students, but also to motivate the students by connecting the very devices that they spend so much time using — the mobile phone — with the curriculum.²²

CONCLUSION

The Millennial generation is storming campuses with expectations unlike any seen before. The rapid pace of change that leaves many people a bit dizzy is commonplace to this hyper-connected student body. Increasingly, colleges and universities are being challenged by a transformation from the periphery in. For institutions, some of which are steeped in hundreds of years of organizational and institutional memory, this is a new phenomenon. However, as the changes are implemented, it opens even more possibilities for connecting with this generation of students — teaching them, keeping them safe — in ways that are relevant to their lives.

With smartphones in their hands, they are proving true a 44-year-old prediction by Marshall McLuhan that the network is an “extension of man”²³ (and woman). This generation is extending the network — and themselves — in directions that were once unimaginable.

Campuses and the students on them have become laboratories where the future is being imagined and created, with the power resting in their hands — literally.

ENDNOTES

- ¹ In addition, in their survey of 7,705 college students in the U.S., Reynold Junco and Jeanna Mastrodicasa found that 97 percent own a computer and 34 percent use Web sites as their primary source of news. *Connecting to the Net.Generation: What higher education professionals need to know about today's students*, NASPA; First edition (March 29, 2007), as cited on Wikipedia, "Generation Y", http://en.wikipedia.org/wiki/Generation_Y#cite_note-21.
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- ⁴ "As a matter of fact, it makes my eyes roll back in my head before too long. But then again, it is a quick way to keep in touch."
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- ¹¹ 2007 Horizon Report, <http://www.educause.edu/ir/library/pdf/CSD4781.pdf>
- ¹² Thomas L. Friedman, "The World is Flat: A Brief History of the Twenty-First Century," New York: Farrar, Straus and Giroux, 2005, pp. 48-172.
- ¹³ Richard Clark famously noted that measurable learner outcomes are properly attributed to the combination of methods — visual, auditory or kinesthetic (learning through movement) — that the media share in delivering content is the true catalyst that leads to understanding. (See Richard Clark, "Reconsidering research on learning from media," *Review of Educational Research*, Volume 53, Number 4, 1983: 445-459.) Consider too a more contemporary reference: Malcolm Gladwell of the New Yorker, author of best-sellers *The Tipping Point* and *Blink*, argues that there is no single best way to learn. Instead, "It's absurd to think there is only one door to knowledge. There have to be many doors." Digital technologies hold all those doors open, welcoming learners into a future in terms well suited to them. (Interview with Malcolm Gladwell by Gordon Freedman, Vice President, Education Strategy, Blackboard Inc. - www.blackboard.com)
- ¹⁴ 2007 Horizon Report, <http://www.educause.edu/ir/library/pdf/CSD4781.pdf>
- ¹⁵ "University of Maryland B-School Gives Nextel BlackBerry 7510 Handhelds to MBA Students; Wireless Devices Will Drive Innovation in Business Education & Research", *BusinessWire*, August 26, 2004.
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