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Worldwide Mobile Phone Adoption *and* Libraries

According to statistical data compiled by the International Telecommunications Union (ITC), a United Nations agency concerned with information and communication technology issues, by the end of 2009, there were more than 4.6 billion mobile cellular subscriptions worldwide, representing an ownership rate of 67% per 1,000 inhabitants [http://www.itu.int/ITU-D/ict/material/Telecom09_flyer.pdf]. The ITC data also indicated that cell phone ownership is nearly universal in the developed world (97%) and that nearly one-half of the developing world (45%) owned cell phones by the middle of 2007 [http://www.itu.int/ITU-D/ict/statistics/ict/graphs/mobile.jpg].

Informa Telecoms & Media's *Global Mobile Forecasts* (2009) predicts that there will be more than 5.3 billion mobile phone subscribers by the end of 2012. This report noted that "it took over 20 years to reach 3 billion subscriptions … but another 1.9 billion net additions are forecast in just six years, with the global total nudging past the 5 billion milestone in 2011." Informa Telecoms & Media, a "leading provider of business intelligence and strategic services to the global telecoms and media markets," forecasted that "78 percent of global net additions between 2007 and 2013" will come from markets in Asia Pacific, Africa, and Latin America. Specifically, it noted that 47% of the 1.9 billion would come from India, China, Indonesia, Brazil, and Russia. On the other hand, it predicted that "North America and Western Europe will contribute only 8 percent of total additions, reflecting the high level of saturation. … Globally, [mobile phone] subscription penetration will approach the 75 percent mark in 2013, while some countries will push past the 150 percent barrier" [http://www.mobilemonday.net/news/mobile-global-subs-top-5-billion-in-3-years].

U.S. Mobile Phone Subscriptions and Use

The Pew Internet & American Life Project seeks to be "an authoritative source on the evolution of the Internet through surveys that examine how Americans use the internet and how their activities affect their lives." It produces reports that explore "the impact of the internet on families, communities, work and home, daily life, education, health care, and civic and political life" [http://www.pewinternet.org/About-Us.aspx].

In December 2008, the Project released "The Future of the Internet III," the third in a series of surveys of internet leaders, activists, and analysts eliciting their views on emerging net and web developments. In this review, an overwhelming majority of experts predicted that by 2020, the mobile device will become the primary connection tool to the internet for

most individuals worldwide [http://www.pewinternet.org/Reports/2008/The-Future-of-the-Internet-III.aspx].

In mid-2009, the Project released "Wireless Internet Use," a report of an April 2009 survey on the use of wireless-enabled devices for accessing the internet. The study reported that nearly one-third (32%) of Americans checked their email, accessed the internet for information, or sent instant messages using a cell phone or other hand-held device, and that nearly 40% (39%) used a laptop computer to do so. Overall, more than half (56%) of the American public used a wireless device to access the net [http://www.pewinternet.org/Reports/2009/12-Wireless-Internet-Use.aspx].

Mobile Phone Use Within U.S. Higher Education

The New Media Consortium (NMC) is "an international not-for-profit consortium of learning-focused organizations dedicated to the exploration and use of new media and new technologies" [http://www.nmc.org/about]. Since the launch of its Horizon Project in March 2002, the Consortium has had a series of discussions with hundreds of technology professionals, campus technologists, and college and university faculty leaders, as well as representatives from leading corporations. Each year, an advisory board considers these conversations and reviews a range of relevant published and unpublished research literature and web resources in order to identify the technologies, trends, challenges, and issues of current interest to these communities. Issued since 2004, its annual "Horizon Report" has profiled select emerging technologies and practices that the board believes will enter mainstream use in learning-focused organizations within the next 1–5 years.

For several years, the adoption and use of mobile devices have been featured in the "Horizon Report." As the 2009 report [http://wp.nmc.org/horizon2009] notes:

> The rapid pace of innovation continues to increase the potential of the mobile phone, challenging our ideas of how they should be used and presenting additional options with each new generation of mobiles. New capabilities in terms of hardware and software are turning such devices into indispensable tools. Third-party applications, now available on an increasing number of models, [have] expand[ed] their utility even further. The idea of a single portable device that can make phone calls, take pictures, record audio and video, store data, music, and movies, and interact with the Internet — all of it — has become interwoven into our lifestyles.

Mobile, hand-held, and related applications and technologies are prominent themes within the Horizon Report 2010 wiki [http://horizon.wiki.nmc.org], a collaborative environment in which current advisory board members have had an opportunity to present, review, and discuss candidate topics, supporting documentation, and case studies for inclusion in the 2010 report.

In October 2009, the EDUCAUSE Center for Applied Research (ECAR) released its most recent "ECAR Study of Undergraduate Students and Information Technology." Published since 2004, this report of an annual survey "has sought to shed light on how information technology affects the college experience … [by asking] students about the technology they own and how they use it in and out of their academic world." A special focus of the 2009 survey was student ownership and use of internet-capable hand-held devices. According to the most recent associated report, 51% of surveyed undergraduates owned an internet-capable hand-held device and 12% more planned to purchase one within a year. Overall, cell phone ownership was nearly ubiquitous and texting had neared saturation [http://www.educause.edu/Resources/TheECARStudyofUndergraduateStu/187215].

In February 2009, the Association of Research Libraries (ARL) issued results of an "environmental scan," which sought to identify trends likely to both affect its work as a professional organization and that of research libraries in the near future. Based on the results of this review, ARL expects that in the

coming decade, research libraries will "increasingly deploy services and resources into virtual environments inhabited by students, faculty, and researchers." In its report, "Transformational Times: An Environmental Scan Prepared for the ARL Strategic Plan Review Task Force," the organization predicts that "the ubiquitous presence of WiFi, hand-held communication devices, smart phones, etc. will spur libraries to re-tool content for mobile users and mobile devices" [http://www.arl.org/bm~doc/transformational-times.pdf].

A Sampler

The recognition by an increasing number of libraries, information providers, and organizations of the nearly ubiquitous adoption of hand-held devices by students, faculty, and the general public, has led an increasing number to develop a range of mobile-oriented information services for these communities.

- On Nov. 10 2009, EBSCO Publishing formally announced the release of EBSCO*host* Mobile [http://support.epnet.com/knowledge_base/detail.php?id=4671], enabling access to any subscribed EBSCO*host* database via smartphones and other hand-held devices. Many existing EBSCO*host* features, such as search modes, limiting to full text, date ranges, peer-reviewed content or by publication, are available. Users can also search images from their mobile devices [http://tinyurl.com/yaxooqv].

  Through its EBSCO*host* platform, EBSCO Publishing offers access to more than 300 full-text and secondary databases and claims to be "the most-used reference resource around the world" [http://www.ebscohost.com/thisTopic.php?marketID=1&topicID=157].
- LexisNexis offers a free iPhone app named Get Cases and Shepardize. Using the app, users can find and read an overview of the issues, rules, and reasoning of a case by entering the item's legal citation to get a 'Shepard's Summary' that provides an overview of a case's legal treatment [http://blog.martindale.com/need-to-get-cases-and-shepardize-weve-got-an-app-for-that].
- In late November 2009, IEEE launched its first mobile version of its IEEE Xplore digital library [http://m.ieeexplore.ieee.org], "permitting users to perform searches anywhere, anytime of over two million documents via any mobile device with Internet access." Anyone can conduct a basic search and display and read citations and abstracts of the top 10 results. To read the full text

of an article, one emails the associated link to any address. Subscribers can view an article directly from the main IEEE Xplore website via an embedded link, while nonsubscribers can purchase the document on demand [http://www.ieee.org/web/aboutus/news/2009/23november_1.html].
- Through its College Download Library, OverDrive offers digital audiobooks and ebooks, as well as music and video, providing colleges, universities, and distance learning programs with "a 24/7 digital library that extends off campus, into students' homes, and even onto the commute route with a portable audio player or smartphone." OverDrive is one of the largest digital media distributors in the world, offering a wide variety of titles from thousands of suppliers in virtually all subjects. As of fall 2009, it had made available more than 150,000 titles in a variety of media formats [http://mobile-libraries.blogspot.com/2009/08/overdrive-college-download-library.html].
- The Social Science Research Network (SSRN) has released a free iPhone app that "provides instant access to the latest Social Science and Humanities research in the SSRN eLibrary ...," a resource that consists of an abstract database for more than 261,200 scholarly working papers and forthcoming papers and an Electronic Paper Collection currently containing more than 214,500 downloadable PDF full-text documents (11-30-09).

  The SSRN is "devoted to the rapid worldwide dissemination of social science research and is composed of a number of specialized research networks in each of the social sciences" [http://mobile-libraries.blogspot.com/2009/11/ssrn-iphone-app-issrn-now-available.html].
- DukeMobile is an application suite developed for Duke University that provides mobile access to athletics-associated programs and schedules; university events; campus; course schedules; the university student and faculty directory; and YouTube and iTunes U videos [http://www.medu.com/duke/index]. Among the more impressive features of DukeMobile is a function that offer access to about 32,000 images from 20 special collections held by the Duke University Libraries. With the launch of its latest version, DukeMobile claims to have "the most comprehensive university digital image collection specifically formatted for an iPhone or iTouch device" [http://mobile-libraries.blog

spot.com/2009/06/library-digital-collections-theres-app.html].

- On July 30 2009, the Alliance Library System, in cooperation with LearningTimes and InfoQuest, hosted the Handheld Librarian Online Conference, More than 2,000 individuals registered for the 1-day virtual event that featured a wide array of collaboration, learning, and networking activities focused on mobile library services. Handheld Librarian II continued the dialogue with a 2-day online conference on Feb. 17–18, 2010, with a program that included a keynote and featured speakers, collections of resources, and discussion boards [http://www.handheldlibrarian.org].

You Ain't Seen Nothin' Yet

Future *Searcher* columns will highlight a wide array of similar initiatives, projects, programs, and technologies that offer anytime anywhere access to a range of information services and sources. The many efforts I plan to profile include mobile-oriented access to abstracts and indexes; collections; information literacy services, online public access catalogs, and reference and research services. In addition, the column will cover major developments relating to mobile learning in a variety of institutional contexts and environments. Foremost, it will feature descriptions and reviews of significant information resources, most notably articles, books, reports, surveys, and other literature, as well as relevant websites. ◆

Gerry McKiernan currently has primary responsibilities for collection development, instruction, and reference and research services in chemical and biological engineering; civil, construction, and environmental engineering; environment sciences; industrial and manufacturing systems engineering; and mechanical engineering at the Library of Iowa State University (ISU), where he has been employed since April 1987. He is the owner of several blogs, notably Friends: Social Networking Sites for Engaged Library Service [http://online socialnetworks.blogspot.com], The Green Library [http://thegreenlibraryblog. blogspot.com], and Mobile Libraries [http://mobilelibraries.blogspot.com], the latter devoted to "documenting any and all topics relating to services provided by libraries to patrons within mobile environments."
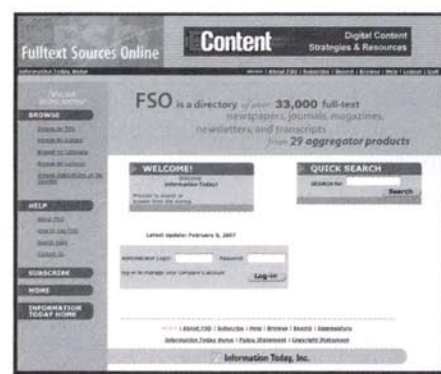
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