Chapter 1

The Mobile Shift

Abstract

Chapter 1 of Library Technology Reports *(vol. 49, no. 6) "The Library Mobile Experience: Practices and User Expectations" discusses how the rapid adoption of the smartphone and the tablet has resulted in the tremendous growth of mobile data traffic. With this change, the mobile Web is no longer a supplement or an auxiliary to the desktop Web. We are quickly entering an era in which the smartphone is the most common device used to access the World Wide Web, and the mobile Web determines our web experience almost as much as the desktop Web. Mobile computing is changing our daily lives.*

It is now difficult to find a place where at least a few people are not looking at their smartphones. We often see many people preoccupied with their smartphones in public places such as restaurants and coffee shops. The smartphone seems to have conquered our downtime by offering multiple things to do no matter where we are. If you think that you use your mobile phone far too often, you are not alone. According to a TechCentral story, "Nokia reported . . . that the average person looks at their phone 150 times a day, or once every six-and-a-half minutes of every waking hour."[1]

What makes us practically glued to our mobile phones? Surely we love them because they are small and light. We carry our phones everywhere. They are the ultimate personal device that we do not share with anyone else. But the greater attraction comes from the fact that these mobile devices connect us with the Internet wherever we go. This enables us to look up information and solve a problem just in time. Think about the last time you were in a place with no Internet connection. How useful was your mobile device? Some apps would have still worked, and you could make phone calls. But the majority of things that you do on your smartphone would have been impossible without being connected to the Internet. The mobile Web and web-enabled mobile devices also instantly put us in contact with real-time news. The most up-to-date and accurate news information about the Boston Marathon bomber hunt in April 2013 came from the Boston Police Department's Twitter account,[2] which concerned citizens intently followed on their mobile devices.

Tremendous Mobile Growth

The Pew Internet and American Life Project reported that smartphone ownership reached a tipping point in 2012 (see figure 1.1): "Nearly half of all American adults (45%) and two-thirds of all young adults (66%) now own a smartphone."[3] According to the same data, more people now own smartphones than basic mobile phones, a majority of adult cell phone owners use their phones to go online, and 17 percent of cell phone owners use their phones as the primary device for their online browsing.[4] Teens are more likely than adults to be cell-mostly Internet users. According to the report *Teens and Technology 2013* from the Pew Research Center, a third (34 percent) of girls and 24 percent of boys in the age group 14–17 said they mostly use their cell phones to go online.[5]

According to a recent white paper by comScore, the smartphone market "is now entering the 'late majority' stage of the technology adoption curve."[6] The

touchscreen smartphone is now being seen as the standard device. On March 10, 2013, Google silently killed its SMS search service, which allowed people to search Google and receive the results via text message.[7]

The use and ownership of e-book readers and tablets also saw a dramatic increase in the last two years since the release of the iPad, the first touchscreen tablet, in November 2010. As of January 2013, 26 percent of American adults own an e-book reader and 31 percent own a tablet—a big increase from 4 and 3 percent respectively back in 2010 (see figure 1.2).[8]

This is a huge change from just five years ago. The iPhone, the first touchscreen smartphone, came out in the summer of 2007. At that time, feature phones such as the Motorola Razr and the BlackBerry (see figure 1.3) were cutting-edge devices. Checking e-mails and taking blurry small photos were the most sophisticated functions of those feature phones. The capability for web browsing was more an idea than a reality. When the iPhone came out with its full touchscreen, however, this instantly changed. Browsing the Web on a phone was not only possible but also manageable and no longer excruciatingly painful.

As pointed out by Jakob Nielsen, a well-known usability expert who ran a field study on web access by feature phones in 2000,[9] and Raluca Budiu, mobile information access never took off until much better user interfaces were introduced with the iPhone in 2007.[10] The rapid growth of mobile information access is shown by the increase in worldwide iPhone sales, which went up from 24.61 million phones sold in 2007 to 135.8 million sold in 2012, an increase of more than 5.5 times.[11] Wireless data traffic soared at the same time. Over the five-year period from 2007 to 2011, wireless data traffic on AT&T, the second largest wireless carrier in the United States, has grown 20,000 percent, at least doubling itself every year since 2007.[12]

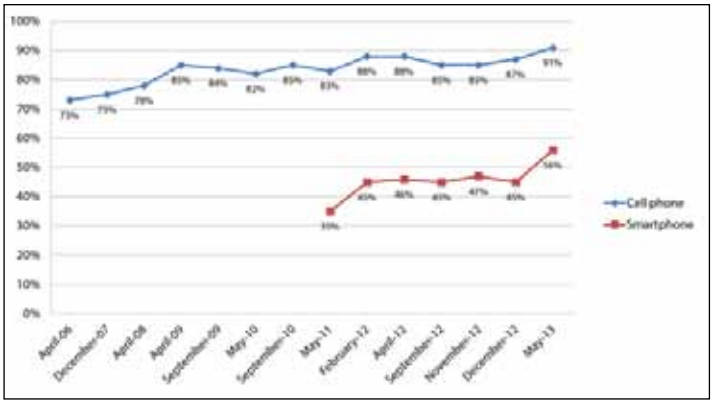

Figure 1.1
Cell phone and smartphone ownership in the United States from 2006 to 2012 [Source: "Adult Gadget Ownership over Time" spreadsheet, "Trend Data (Adults)," Pew Internet and American Life Project, accessed March 24, 2013, www.pewinternet.org/Trend-Data-(Adults)/~/media/Infographics/Trend Data/Early 2013/adult gadget ownership over time.xls]

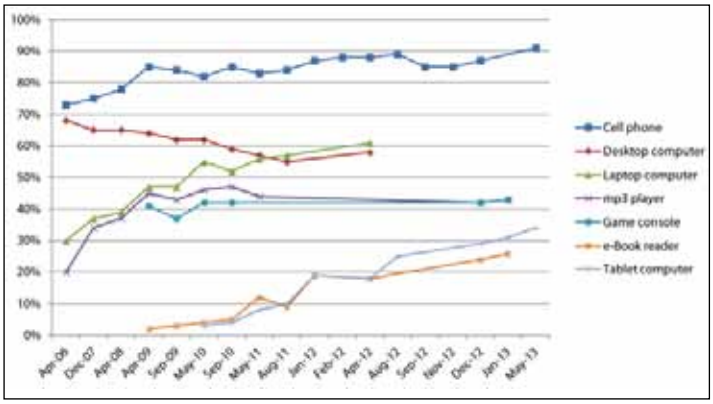

Figure 1.2
Adult gadget ownership over time [Source: "Trend Data (Adults)," Pew Internet and American Life Project, accessed March 24, 2013, www.pewinternet.org/Trend-Data-(Adults)/Device-Ownership.aspx]

Changes That Mobile Devices Have Brought to Our Daily Lives

The prevalence of mobile devices, smartphones in particular, has brought many changes to our daily lives. You may remember that a seemingly long time ago, when the World Wide Web was first introduced in the 1990s, people used to design their website home pages like a printed business card. Now, the exact opposite is happening. The world of the smartphone and mobile computing has become so familiar to us that one online business prints out paper business cards in the form of the contact information screen of the iPhone (see figure 1.4).

Many people use the phone to text more than to talk nowadays. As a matter of fact, texting has become such a mainstream method of communication that a *New York Times* blog even ran a post in which the author, Nick Bilton, argued that leaving a voice mail instead of texting was impolite because it wasted the receiver's time.[13] According to him, asking people something that is easily discoverable on the Internet is equally rude because the communication is not only unnecessary but also time-consuming.

The Quick Response (QR) code makes it convenient for mobile device users to go to a web page

Figure 1.3
A variety of feature phones [Photo credit: Sam Pullara—Phone Size Comparison. www.flickr.com/photos/spullara/3036272/, licensed under the Creative Commons Attribution 2.0 Generic license. http://creativecommons.org/licenses/by/2.0/deed.en]

Figure 1.4
An online business that prints business cards that closely resemble the iPhone lock screen and contact information screen [www.iphone-business-cards.com]

Figure 1.5
QR code on a billboard [Photo credit: Matthew Sutherland—QR Code Great Marketing! www.flickr.com/photos/mattslens/5727484828/, licensed under the Creative Commons Attribution 2.0 Generic license. http://creativecommons.org/licenses/by/2.0/deed.en]

or to get specific information by scanning the code with the camera on a mobile device. These QR codes used to be seen as a curiosity. But now they appear in newspapers, in magazines, and even at bus stops and subway stations (see figure 1.5). Showrooming is another common behavior in the age of the ubiquitous smartphone. Consumers visit brick-and-mortar stores to check out the products and the prices, but then they go online to make an actual purchase. In order to deal with this problem, a store in Australia recently decided to charge five dollars for just looking and to reimburse only those who actually made a purchase at the store.[14] Bilton's opinion about the voice mail and the browsing fees at a store are both extreme examples, but they clearly show how rapidly mobile adoption has been influencing people's behavior and changing our daily lives.

The smartphone multi-functions as an address book, a notebook, a map, and a phone at the same time. Furthermore, it has placed the World Wide Web, the biggest information warehouse in the world, just a fingertip away from us. Neighbors now use the Bump app to get each other's contact information on smartphones instead of using pencil and paper. People watch movie trailers, read reviews, and buy movie tickets all with a mobile phone. It is even possible to deposit a check with a smartphone, and it is no longer uncommon for people to use a mobile device to order a book and start reading it in just a few minutes. People often look up price information for a product on the Web while they are physically in a store looking at it. Some mobile users even prefer their smartphones and tablets to the desktop computer for casual reading, media consumption, and social network updates.

Bump app
https://bu.mp

Figure 1.6
We spend 37 percent of our Internet time on mobile now [Source: *2013 Mobile Future in Focus*, white paper (Reston, VA: comScore, February 2013), 12, www.comscore.com/Insights/Presentations_and_Whitepapers/2013/2013_Mobile_Future_in_Focus]

The No-Longer-Auxiliary Mobile Web

The mobile Web, the portion of the World Wide Web that is accessed by mobile devices, was once only a small part of the entire World Wide Web. But this is quickly changing with the growing adoption of smartphones and tablets. In February 2013, the computer networking company Cisco reported that "global mobile data traffic grew 70 percent in 2012" and that "global mobile data traffic in 2012 (885 petabytes per month) was nearly twelve times greater than the total global Internet traffic in 2000 (75 petabytes per month)."[15] In the last quarter of 2011, global smartphone shipments exceeded global shipments of desktop, netbook, and notebook computers.[16] The International Data Corporation has predicted, "In 2013, the total number of smartphones shipped around the globe will surpass feature phones for the first time."[17] We now spend "more than 1 in 3 minutes (37 percent)" of our Internet time on mobile devices, according to comScore (see figure 1.6).[18]

The mobile Web is no longer a supplement or an auxiliary to the desktop Web. We are quickly moving into an era in which the smartphone is the most common device used to access the World Wide Web, and the mobile Web determines our web experience almost as much as the desktop Web. Furthermore, mobile computing is changing not only the way we work with the computer but also the way we live our lives. This is a big difference between desktop computing and mobile computing. Mobile computing is becoming embedded into our everyday activities in a way that desktop computing never did or could.

Notes

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