5 Mobile

THE FASTEST-GROWING MEANS for accessing news and information is the mobile device.[1] Fifty-six percent of all mobile device users, and 47 percent of the population, now use them to get local news via an Internet connection.[2] Increasingly, mobile phones, e-Readers and tablets are news media platforms—just like a newspaper or a TV set—as much as they are two-way communications tools.

This section focuses on the ways in which mobile technology has become a major delivery mechanism for news—with the potential to provide consumers, including minority and low-income populations, greater access to digital news and information content. The section also explores the financial impact of mobile technology on the news industry, finding that the delivery of content over mobile devices is not yet proving to be a major source of revenue for news outlets, although, early returns suggest that e-Readers and tablets may offer more financial upside.

For purposes of this report, "mobile" refers to wireless communications technologies designed to be used while in motion or from different fixed points, as opposed to technologies designed to be used from a single fixed point. In this section, we focus on news consumption over *handheld* devices that use mobile technologies—such as cell phones, smartphones, tablets (such as the iPad), and e-Readers, such as Kindle and nook.

History

The cellular phone was invented by Martin Cooper at Motorola in 1973 and became commercially available in the United States a decade later. First-generation cell phones were primarily used for voice traffic. The transition from analog to second-generation (2G) digital transmission technology, primarily during the 1990s, brought about better sound quality, increased spectral efficiency, and enhanced features like mobile voice mail.[3]

From 1994 to 2000, the FCC auctioned a large number of licenses to use the Personal Communications Service (PCS) spectrum, more than tripling the stock of spectrum available for commercial mobile devices and vastly increasing the capacity to carry digital signals—including voice —over commercial cellular networks.[4] The mobile industry responded with a new wave of innovation and investment, which brought about dramatic change. From 1994 to 2000:[5]

> The per-minute price of cell phone service dropped by 50 percent.
> The number of mobile subscribers more than tripled.
> Cumulative investment in the industry more than tripled from $19 billion to over $70 billion.
> The number of wireless providers increased significantly in most markets.

Then came the development and expansion of "mobile broadband." Colloquially, "mobile broadband" refers to "high-speed, wireless Internet." More precisely, the term "mobile broadband" refers to advanced network technologies, usually at speeds and latencies (amount of delay in sending and receiving data packets) that allow for Internet access and the use of mobile applications ("apps"). The growth of the mobile broadband industry has been driven by a number of factors, including the development of smartphones and other mobile computing devices, the availability of additional suitable spectrum, and the deployment of mobile wireless broadband networks.[6] In the years since the FCC auctioned PCS licenses, the FCC increased the total spectrum available for mobile services by threefold again—largely through the auction of spectrum in the 700 MHz and 1.7/2.1 GHz bands and the rebanding of spectrum at 2.5 GHz—and this spectrum is coming online for mobile broadband deployment today.[7] Most of the major mobile wireless service providers are currently rolling out or planning to deploy new technologies which, by supporting even higher data throughput rates and lower latencies, will facilitate a broader range of mobile applications, such as the

viewing of large volumes of video.[8] Industry analysts project substantial continued growth of mobile wireless, with data traffic forecasted to increase 35 times 2009 levels by 2014.[9]

In June 2010, approximately 71.2 million mobile wireless Internet access service subscriptions were reported to the Commission on its Form 477, an 85 percent increase from the 38.4 million reported in June 2009.[10]

The Mobile News Audience

A recent article described mobile as a "critical…news delivery platform."[11] According to a smartphone-user study conducted by Google with Ipsos OTX in late 2010, 57 percent of "mobile searchers" are looking for news—a higher percentage than that of users looking for dining (51 percent), entertainment (49 percent), or shopping (47 percent) information.[12] In addition, 95 percent of users have used their smartphone to look for local information.[13]

What kind of news do people access through their mobile devices? Weather was the most popular topic accessed (42 percent), followed by local restaurants/businesses (37 percent), general local news (30 percent), local sports scores/updates (24 percent), local traffic/transportation (22 percent), local coupons/discounts (19 percent), and news alerts (15 percent).[14]

The increase in the mobile consumption of news is fueled in part by the proliferation of smartphones. While there is no industry standard definition of a smartphone, the distinguishing features of a smartphone generally include: an HTML browser that allows easy access to the full Internet; an operating system that provides a standardized interface and platform for application developers; and a larger screen size than on a traditional handset.[15] Other types of cell phones—sometimes referred to as "feature phones"—may offer more limited Internet access without a standardized platform for applications.[16] And there are some cell phones—sometimes referred to as "basic phones"—that do not provide Internet access at all. Smartphones are outselling PCs worldwide—101 million to 92 million in the fourth quarter of 2010.[17] Nielsen predicted that "by the end of 2011, [there will be] more smartphones in the U.S. market than feature phones."[18]

One study found that the top 10 mobile devices used for "news and information access" were either smartphones or high-end feature phones.[19] This is in part because accessing news websites and applications is far easier on smartphones.

Significantly, low-income earners, African-Americans, and Hispanics had high cell phone use.[20] Although it is difficult to generalize, data from 2008 and 2011 indicate that these populations have relatively *high* rates of mobile Internet usage and local information consumption via mobile devices,[21] even though they consume print news and news through desktop computers at lower rates than white Americans.[22]

According to the Pew Internet & American Life Project study, *Mobile Access 2010*, an estimated 54 percent of African-Americans and 53 percent of English-speaking Hispanics access the Internet on a handheld device.[23] And while 18 percent of African-Americans and 16 percent of English-speaking Hispanics gain access to the Internet only through wireless mobile, only 10 percent of white Americans do.[24] The study also found that mobile data application usage is higher among African-Americans and Latinos than whites.[25] Hispanics use wireless mobile devices for news with special frequency. Among those who go online using a handheld device, 55 percent of English-speaking Hispanics do so several times a day.[26] The study observed that "minority Americans lead the way when it comes to mobile access…using handheld devices"—a trend that the Pew Internet & American Life Project "first identified in 2009" in its *Wireless Internet Use* report.[27]

Fifty-six percent of all mobile device users, and 47 percent of the population, now use such devices to get local news via the Internet.

In addition, it appears that smartphone usage is spreading within the African-American and English-speaking Hispanic communities faster than in white communities in the U.S.[28] Daily mobile Internet access by African-Americans increased by 141 percent, from 12 percent at the end of 2007 to 29 percent at the beginning of 2009, roughly double the rate of increase among the general population.[29] In addition, in Pew's *Mobile Access 2010* report, only 19 percent of white cell phone owners said they "use a social networking site" on their device, while 33 percent of African American respondents and 36 percent of English-speaking Hispanic respondents said they did.[30]

It is too early to tell the implications of the high usage of phones for news among African-Americans and Latinos. For instance, will heavy minority use of mobile devices lead to more news apps or services targeted at, or run by, members of those groups? At a minimum, since new technologies sometimes get to minorities late in the game, it is at least heartening that the uptake of this new technology among minorities is robust.

Different Types of Mobile News Platforms

Google's former CEO Eric Schmidt predicts that "in five or 10 years, most news will be consumed on an electronic device of some sort. Something that is mobile and personal, with a nice color screen."[31] He envisions a mobile news platform that "is smart enough to show you stories that are incremental to a story it showed you yesterday, rather than just repetitive"; a platform intertwined with social networking, that "knows who your friends are and what they're reading and think is hot"; and one that is conscious of locale, that "has a GPS and a radio network and knows what is going on around you."[32] Schmidt expects this future to be realized financially through a business model "involving both subscriptions and ads."[33]

"Minority Americans lead the way when it comes to mobile Internet access using handheld devices."

 Electronics giants are already developing flexible and folding monitors that can be used with mobile devices[34] so that accessing the Internet over a mobile phone will not always necessitate reading from a small screen. Some industry experts predict that with more powerful central processing units (CPUs) in the works for smartphones—which will allow the basic mobile unit to be supplemented with a "docking station" that includes a keyboard, full-size display, and camera[35]—mobile devices may well replace PCs.[36] The mobile advertising industry, meanwhile, to further enhance revenue potential, is developing new software to make it easier for local businesses to geo-target advertisements in order to reach consumers based on where they, and their phones, stand at any given moment.[37]

The market for smartphones, tablet computers, laptops, PCs, and TVs is evolving rapidly, as the distinctions between these devices become increasingly blurred. Right now, wireless mobile devices offer a few different ways for consumers to access news.

Mobile News Sites vs. Applications

Users can visit news sites by using a web browser on their phone, just as they might on their personal computer. Or, they can use special mobile applications, designed specifically for use on a phone. Despite all the buzz about "apps," Americans so far still rely more on Internet browsers to access news websites, even when they are using a phone. In June 2010, comScore reported that over a three-month period ending in April 2010, an average of 26 million people consumed news content via browser access each month, while an average of approximately 9.3 million accessed news content via mobile applications.[38]

However, use of news mobile applications is growing rapidly: that 9.3 million represented a 124 percent increase from a year before.[39] Data from the Associated Press (AP) suggests that what mobile applications lack in audience share they may make up for in total usage time. For example, users of the AP mobile website spent an average of just 2.7 minutes per month on the site, while users of the AP BlackBerry application spent 16.6 minutes per month on it.[40]

Many news organizations offer mobile-specific Internet content, including versions of their websites optimized for mobile devices' smaller screens and mouseless navigation. Generally, a mobile user who navigates to a standard website on a mobile Internet browser is routed automatically to a simplified, faster-loading mobile website if one exists.

Building mobile websites can be a costly and complex process, particularly if the mobile website features multimedia elements. Building multiple websites for different mobile devices and operating systems is even more expensive. While the cost of building a rudimentary mobile website might run under $10,000, corporations frequently spend over $25,000 building more sophisticated ones.[41]

Virtually every major news organization in print, television, and radio operates a mobile website.[42] A recent survey of newspaper publishers revealed that in mid-2010, the majority of newspapers surveyed were formatting their

websites for mobile devices[43]—among them, 58 percent of newspapers with circulations under 25,000.[44]

"Mobile applications" are generally defined as software programs designed to run on a mobile device. They provide a user-friendly window into website content, real-time alerts, and a dizzying array of other features, and they are typically designed to be used with one or more of the mobile operating systems, including: Apple's iOS, Google's Android, RIM's BlackBerry OS, Nokia's Symbian OS, Microsoft's Windows Mobile, and Palm's OS. Some apps may be native to, or "pre-loaded" on, a device; others can be "side-loaded" from a personal computer. Many apps do *not* require that a mobile device be connected to a wireless network or the Internet when used. News-related apps can be used without an Internet connection, but, in such instances, do not contain the latest updated information. It is expensive to develop professional-quality mobile apps. In 2009, the technology research firm Forrester Research Inc. estimated that building a professional-quality mobile app "without frills" would cost at least $20,000.[45]

Mobile apps are available—some for free, some for a fee—through the application stores of the smartphone operating systems with which given apps are compatible. The level of control exerted over developers by Microsoft, RIM, Apple, Nokia, Google, and other firms owning mobile operating systems varies.[46]

The number of apps specifically devoted to news is relatively small. According to Morgan Stanley, in December 2009, news applications accounted for approximately 2 percent (or about 2,700 applications) out of a total of more than 118,000 apps available for Apple iPhone and iTouch devices.[47] News ranked 14th in a tally of the number of applications offered by category.[48] A scan of the BlackBerry App World catalog reveals a similar percentage of news applications—1057 news applications out of 30,962 applications total, or approximately 3.4 percent—which makes news 6th out of 20 categories.[49] (The news category includes "soft" news topics such as Hollywood gossip, fashion trends, sports, and automobiles.)

News—with the exception of weather—rarely makes the top-10, top-50, or top-100 lists of most-downloaded apps. According to a survey conducted in January 2011 by the Pew Research Center's Project for Excellence in Journalism, while nearly five in 10 adults consume local news on a mobile device, only one in 10 have downloaded an app to do so.[50] Furthermore, only 10 percent of adults who use mobile apps to connect to local news and information use apps that require a fee.[51] This amounts to just one percent of the total U.S. adult population.[52] In an August 2010 survey, however, Nielsen found that 36 percent of smartphone users, and 24 percent of feature phone users, had used news apps in the previous 30 days.[53]

Nearly every major print, television, and radio news organization offers at least one mobile application. Some news organizations also offer separate mobile applications for popular shows and supplements from their print product.

Increasingly, smaller and more locally oriented news organizations are offering mobile applications, as well. For example, LSN Mobile has created a free app that offers local breaking news, video clips, weather, sports scores, movie show times, and school-closing notices from a network of more than 250 local media outlets.[54] Application developer DoApp reports that it has developed applications for 120-plus local media organizations, and a total of 185 local media outlets have signed up to build them.[55] Alternative weeklies, such as *L.A. Weekly*, *Philadelphia Weekly*, *Charleston City Paper*, and the *Village Voice*, offer apps, as well.[56] A number of local radio stations have created apps that facilitate consumption of radio news content, even by those using mobile devices that do not feature tuners.[57]

Some of the most innovative news-related mobile apps aggregate news produced by multiple sources. For example, Newsy's app[58] compiles video coverage of a given story produced by many different news organizations and offers viewers "all sides and sources of each story," in the words of one reviewer.[59] The Zen News app uses what is known as "tag cloud navigation."[60] Such navigation "takes the most prevalent topics or keywords and organizes them by size, with the larger words being more important."[61]

The popularity of social-media services like Twitter and Facebook on smartphones presents another important way of disseminating news, each serving, in effect, as a customized news service that relies on the judgment of the consumer's network of friends or followers.

Users of the AP mobile website spent an average of just 2.7 minutes per month on the website, while users of the AP BlackBerry application spent 16.6 minutes per month.

Are Americans more likely to consume different types of news content on a mobile device than they would via traditional media (newspapers, TV, radio) or on a desktop computer? Particular technologies can lend themselves more to certain types of content: For instance, the moving image on a TV makes it more conducive to capturing emotion and drama than print is. Mobile phones would seem particularly good at short-and-fast. Mobile's ability to push content through a phone (as opposed to waiting for someone to seek out a website) makes it ideal for news bulletins and emergency notices.

Does this mean that, along with the remarkable increase in mobile news consumption taking place, ushering in what for the moment appears to be a move "[f]rom 17-inch displays to 3-inch displays,"[62] we should expect a corresponding decline in the actual quantity and depth of news content consumed by Americans? The available data is inconclusive. One 2010 study asked university students, "What percentage of a news article do you typically read on your smartphone?" The results: 9 percent said "headline only," 47 percent read "only three paragraphs," 31 percent read "25 to 50 percent," and 13 percent read "100 percent of the article."[63] The Digital Media Test Kitchen at the University of Colorado, which conducted the study, also observed that "the small screen of a smartphone is not ideally suited for lengthy reading sessions, and the majority of mobile users tend not to view much of long videos or listen to long sessions of audio."[64] The organization resists the conclusion that the results of its study establish "that smartphones…are not a good medium for news presentation beyond short articles and brief snippets of video and audio," suggesting that news consumption off of larger desktop screens fares no better.[65]

Advertisers spent $202 million on display ads for mobile devices in 2010, up 122 percent from a year before.

An important dataset concerning *desktop* consumption of news, dating from 2007, challenges this. The Poynter Institute's extensive 2007 research using eyeball tracking reached the rather surprising conclusion that people "read *further* into stories online than in print" and found that this was "true for stories of all lengths."[66] In the Poynter study, "[o]nline participants read an average of 77 percent of story text they chose to read," in contrast to those reading from non-tabloid print newspapers, who "read an average of 62 percent of stories they selected."[67]

Common sense tells us that consumers may end up using some devices for shorter bursts of content and others for longer pieces or clips. The Pew Internet Project's studies indicate that mobile news consumers use a greater number of news platforms than other adults:[68] 55 percent of mobile news consumers use at least four different news platforms on a daily basis, and they are 50 percent more likely than other adults to read a print version of a national newspaper.[69] That is why the Digital Media Test Kitchen envisions news consumers reading the same content over time on both their smartphone and on devices with larger screens, depending on whether they are in transit, at the office, or at home:

> "Especially for in-depth and enterprise packages, news providers can expect a portion of their audience to go back and forth between devices. The bus commuter might begin a compelling enterprise news package on a smartphone during the ride, then pick it up again later on an office PC, home laptop, or iPad tablet, for example…. Portability of content across various systems and interfaces increasingly will be critical for news providers seeking to reach the largest audience possible."[70]

Software facilitating cross-device bookmarking has already been developed for some devices.[71]

A number of state and federal government entities offer mobile-specific Internet content, including versions of their websites optimized for mobile devices' smaller screens, and mobile apps. For example, in 2010, the state of Rhode Island launched a free iPhone app that provides quick access to Rhode Island government news and resources, including photos and maps, and allows users to search for online government services.[72] The Arkansas Game and Fish Commission's free Game Check iPhone app allows hunters to report hunted game to the Arkansas Game and Fish Commission through their smartphones.[73] Usage of the app rose 330 percent during 2010's hunting season, compared with the 2009 season.[74] The federal government offers optimized websites and mobile apps that allow people to, for example, search for a federal job,[75] check for product recalls,[76] search the Smithsonian's collection,[77] run the FCC's mobile broadband speed and quality test,[78] and view the FBI's most-wanted lists on the FBI's Most Wanted app.[79]

Accessing News Content via Tablets and e-Readers

Many print news organizations sell electronic versions of their content that can be downloaded wirelessly and read on a tablet or an e-Reader.[80] For example, the Amazon Kindle Store offers monthly subscriptions to more than 70 U.S. newspapers.[81] Of the 25 largest-circulation newspapers in the United States, at least 20 are available on the Kindle, including more than 40 of the 100 most popular.[82] Several smaller-market papers—including the *Lewiston (ID) Tribune*, the *Charlottesville (VA) Daily Progress*, and the *Manistee (MI) News Advocate*—are available, as well.[83] So are subscriptions to many of the most popular blogs and U.S. newsmagazines.[84]

Publishers are particularly optimistic about the potential impact of the iPad. In a May 2010 ChangeWave survey, 50 percent of iPad owners said that they read newspapers on the device (versus 14 percent of respondents using e-Readers other than the iPad), and 38 percent of iPad owners said that they read magazines on it (versus 11 percent on other e-Readers).[85] In a December 2010 Reynolds Journalism Institute survey of iPad owners, 84.4 percent said that the most popular use of their iPad is to follow breaking news and stay updated on current events.[86] One 2010 study confirms that iPad owners are using the device to access desktop-oriented websites, rather than or in addition to mobile websites.[87]

How will tablets alter mobile news economics? Among the questions that are already arising: Are consumers more likely to pay a subscription fee for a publication on a tablet than on a phone? Will advertisements perform better (i.e., get noticed by consumers more) and therefore enable publishers to charge higher rates? Further discussions about the impact of tablets and e-Readers are below, in the "Revenue Models" and "Track Records" sections.

Local TV News Experiments with Hyperlocal Mobile

Mobile platforms are providing local television stations with new opportunities. In 2009, TV stations made $29 million from mobile, about 12 percent of the year's total local mobile advertising expenditure.[88] While others are not quite as bullish, one analyst states: "I expect that figure to skyrocket into the billions within two years as the transition from desktops and laptops to hand-held devices takes off."[89]

Local television stations are seeking to develop "hyperlocalized" mobile news platforms that focus on the concerns of individual neighborhoods and even more narrowly defined communities. For example, LIN TV Corporation, owner of 28 local TV stations,[90] is partnering with News Over Wireless "to bring local text and video updates to mobile phones," and local NBC affiliates are partnering with "the neighborhood site Outside.In to provide information about local news, events and other things."[91] More than 230 iPhone apps were offered by local TV stations in 2010.[92]

> **In contrast to the general experience with mobile display advertising, prominent publishers are expressing optimism about the iPad.**

While the most common way of watching local TV news video is through apps or web browsers making use of the Internet, broadcasters have also been promoting a different technology—one that beams a traditional broadcast signal directly into the phone rather than over the Internet pathway. In November 2010, the Mobile Content Venture (MCV) announced its plans to "upgrade TV stations in New York, Los Angeles, Chicago, San Francisco, and 16 other markets to a standards-based digital TV system," which will allow viewers to watch locally based programming on their mobile devices.[93] Currently, there are more than 50 mobile DTV stations on-air, according to the Harris Corporation, which supplies equipment required for mobile DTV broadcasting.[94] A recent test of the devices found that one of the most common ways mobile TV is being used is for news access. (See Chapter 3, TV.)

Equipment for mobile DTV broadcasting typically costs a local station in excess of $100,000.[95] It is not entirely clear whether consumers will tune in to live local broadcast news on their phone when they can access so many other news sources via the Internet, also on their phone. The business model has not yet been decided either. "Broadcasters are still grappling with whether to offer free, ad-supported television or a subscription model, and the number of U.S. TV stations streaming a mobile digital signal has increased slowly," the *Wall Street Journal* reported in October 2010.[96] Consumers must use specialized devices to view mobile DTV.[97] These devices include mobile phones with mobile DTV reception capability, accessory USB dongles, netbooks, portable DTV players, and in-car displays.[98]

Mobile Radio

There are several ways that consumers can access audio online. One in three Americans say they listen to online radio—and this figure does not include podcasts, which are an increasingly popular way for consumers to get audio programs.[99] Consumers essentially use the Internet as if it's a radio tuner, listening live to audio from around the web. Advertising and subscription revenues associated with mobile radio could reach into the hundreds of millions within the next five years.[100] Already the Public Radio Player—a free application, developed by Public Radio Exchange for iPhone and Android devices, that plays shows and stories broadcast over public radio—has had over 3 million unique downloads for iPhone since its December 2008 launch.[101] The player has been the number-one free app in iTunes, and it has largely remained among the top-25 free music apps.[102]

Podcasts are audio or video files downloaded via an Internet connection and enjoyed directly from a PC or transferred to a mobile device and listened to on-the-go. Numerous news organizations, ranging from the largest TV and radio networks to small-town affiliates, provide news content in the form of podcasts.

Another technology that can be used to bring consumers news and information in an audio format is the FM chip—a small receiver placed in the phone that allows the headset to act as an antenna, so the phone can function as an FM radio. (See Chapter 29, Internet and Mobile.)

Text and SMS

Services utilizing SMS (short message service) text messaging provide another way for consumers to access news and information content on mobile devices. According to survey data from comScore, 32.4 million people—or more than half of the total number of mobile news and information consumers—used SMS to access news and information in January 2009.[103] Typically, a user can sign up for "mobile alerts" by texting a brief message to a specified "short code" (an abbreviated phone number created for easy use). According to Pew's Project on the Internet and American Life, "11% of cell phone owners have alerts sent to their phones via text or email."[104] Given the nature of SMS—messages are limited to roughly 160 characters—these alerts are limited to headlines.

"MOJO": Mobile Journalism by Citizens

Because smartphones can capture still images—and many can record digital video footage—they are becoming critical to the distillation of newsworthy events. Mobile phone videos, recorded by witnesses to the 2009 shooting of Oscar Grant in a Northern California subway station by a police officer, became a focal point of news coverage of the event and the later criminal trial. Major news organizations relied on mobile phone images during the early 2011 pro-democracy protests in Egypt, the January 2010 earthquake in Haiti, and the summer 2009 uprisings in Iran in their coverage of events for which conventional broadcast video was unavailable. Individuals posting social media "status updates," with text and images, also play a part in informing the world of events they have witnessed and disasters they have survived. During the earthquake in Haiti, the number of Facebook status updates rose to 1,500 per minute.[105]

"Mobile Voices" is an effort to allow immigrant workers in Los Angeles to "create stories about their lives and communities directly from cell phones."

There are numerous venues through which news content produced by smartphone-wielding nonprofessional journalists can be distributed. CitizenTube, YouTube's "news and politics blog," provides a feed of the latest breaking news videos on YouTube.[106] Individuals with a Twitter account who record news footage on their mobile device can "tweet" such footage, along with related text, to CitizenTube's Twitter address, @citizentube. CitizenTube then posts the material on its feed. News outlets are increasingly offering ways for citizens to share images directly with editors, as well, and some use Facebook to post the images that people share.[107]

Mobile phones can enable citizens to contribute to and receive news in lower-income areas that do not have widespread computer usage. *Grocott's Mail*, based in Grahamstown, South Africa, uses SMS technology to distribute news and gather community opinion, which is then published in the print edition of the newspaper. The paper sends SMS alerts and headlines to 500 low-income subscribers; it has trained 100 citizen journalists; and it published 188 citizen-journalist-authored stories on its website in 2010.[108] "The inspiration for the whole project is

trying to democratize news and information and put it into the hands of more people, give people more access to it, and create more participation—not just one-way, top-down communication," says professor Harry Dugmore of Rhodes University, director of the Knight Foundation–sponsored program called "Iindaba Ziyafika" (or "The news is coming!").[109]

Consumers in the United States are using mobile communications platforms to participate in civic life and foster community engagement. Pew Research Center's Project for Excellence in Journalism's January 2011 survey found that people who use their mobile phone or tablet to get local news are more enthusiastic in some respects about their community and the role they play in it.[110] A late 2009 survey found that 22 percent of all American adults had signed up to receive alerts about local issues—such as traffic, school events, weather warnings, and crime alerts—via email or text messaging.[111]

Among owners of all e-Readers (including the iPad) 18 percent were reading newspapers, and 14 percent were reading magazines.

Innovative efforts have sprouted throughout the country to empower citizens to use mobile phones to receive and help shape the news. Mobile Voices, a collaboration between the USC Annenberg School for Communication & Journalism and the Institute of Popular Education of Southern California, was designed to enable people with limited computer access to participate in digital media.[112] Immigrant workers in Los Angeles are invited to "create stories about their lives and communities directly from cell phones."[113] Some blog by sending photos with descriptive text messages to a Mobile Voices email address; users can also simply send text messages or call a local number to leave an audio message.[114]

VoteReport, another civic media project, used Twitter and eight volunteers to gather 17,000 user reports of conditions at U.S. polling places on election day 2008.[115] People could submit reports to Twitter by texting to a dedicated number through iPhone and Android apps, or by phoning a dedicated number.[116] Smartphone features like cameras and GPS have brought about new opportunities for civic engagement.[117] SeeClickFix creates and distributes mobile applications that empower citizens to report "non-emergency" events, problems, and issues in their community—for example, a pothole or fallen power line—to government entities and interested groups and neighbors.[118]

Revenue Models and Track Record

Advertising

Many news outlets have tried to monetize their content through mobile advertising, which can take several forms. Ads can be displayed on mobile websites ("display ads"), and they can be embedded in mobile applications as text, video, or a software instruction that sends the user to their Internet browser where they can see the ad ("in-app ads"). Advertisers spent $202 million on display ads for mobile devices in 2010, up 122 percent from a year before.[119] According to eMarketer, between 2009 and 2010, U.S. mobile ad spending was up 79 percent, from $416 million to $743 million.[120] It hit $1.1 billion in 2011 and is projected to reach $1.5 billion in 2012.[121]

However, despite the rapid rise in mobile ad spending, the Pew Project for Excellence in Journalism points out that "the dollars here are still small relative to other online advertising—browser-based search alone is around $12 billion."[122] And, on closer examination, this revenue increase appears to be due to the explosion of mobile sites on which ads appear more than to an increase in mobile advertising rates. Mobile ad rates are in the $10-to-$15 CPM (cost per 1,000 views) range[123]—but, factoring in all the mobile impressions that do not have ads on them would lower the average effective CPM dramatically.

Mobile content providers typically attract advertisers and advertising revenue through mobile advertising networks such as AdMob (purchased by Google in 2009), Quattro Wireless (purchased by Apple in 2010), Millennial Media, and Jumptap, which take between 15 and 50 percent of revenue.[124]

Prominent publishers are expressing more optimism about advertising via the iPad than through phones.[125] Gannett reports that it is currently charging Marriott a $50 CPM for Marriott ads embedded in its *USA Today* iPad application, more than five times the average CPM advertisers pay for ads placed on the *USA Today* website.[126] (Chapter 25, How Big is the Gap and Who Will Fill It?)

Local newspapers are attempting to reach residents through the iPad, too. A review of Apple's App Store in May 2011 found more than 200 iPad apps offering local U.S. news content.[127] Fifty-seven percent of newspaper publishers surveyed by the Audit Bureau of Circulations said that they "have plans to develop an iPad app in the next six months."[128] According to Pew's *State of the News Media 2011* report, local mobile advertising revenue is growing rapidly.[129] It is quite possible that as the market matures, the cost of developing iPad apps will drop, allowing a greater number of smaller media companies to get in the game.

Just how much media companies will benefit from these revenue streams depends in part on how big a share ends up going to the companies that control the phones. For example, according to the *Wall Street Journal*, Apple charges advertisers one penny every time a consumer views a banner ad in an iPhone app and two dollars every time a person clicks on the ad.[130] *PC World* reported that, after purchasing AdMob, Google shares 68 percent of its ad revenue.[131]

If aggregator apps that are not created by news organizations continue to grow in popularity, they too could have a significant impact on how news organizations fare. "Aggregator" apps pull news from a variety of sources, allowing users to customize how it is displayed on their device. Often, ads do not appear next to the content. Consumers can absorb much of the content without seeing an ad or clicking through to the site that created the content—which may make it a better experience for the user but makes it harder for media companies to monetize the experience. News aggregators and news readers appear in significant numbers on lists of the most-downloaded news-related apps (both paid and free) designed for the iPhone and Android devices.[132] In June 2010, Pulse, a relatively simple iPad app that displays RSS feeds (regularly updating news feeds) drawn from a variety of sources, was the number-one paid app sold on Apple's iTunes store when it was selling for $3.99 (it is now available for free).[133] Pulse allows users to see headlines, chunks of text, and in some cases the full text of articles—all without any advertising appearing alongside it. Typically developers/owners of news reader and aggregator apps earn revenue from the sale of the app and from in-app advertising— without passing on any portion to the digital news producers upon whose content their products rely. Because media organizations have control over

In the BlackBerry App World catalog, 238 of the 269 news applications were free. Approximately 62 percent of news apps for the iPhone were free.

what goes through RSS feeds, they can tailor, say, their Pulse RSS feeds to offer less content, making it somewhat more likely that a reader might click back to the original site for more information. The technology underpinning these news feeds makes it possible for publishers to insert ads to accompany their content, but so far most content producers have not done so. Some large news organizations have been able to strike special deals with aggregator app developers to get more financial value out of providing content.[134] Even more controversial are products such as Flipboard and Zite that do not rely on RSS feeds but rather "scrape" content from the publishers' websites, leaving content producers with little control over how the material is used.[135] One company, Readability, drew praise when it announced a program to charge for its content-reading app and then share the revenue with content creators, based on what content consumers read.[136]

Charging for Content

When smartphones started to grow in popularity, publishers began to express optimism that they would offer a new, better way to charge customers and reduce reliance on advertising. But, tellingly, so far most of the news apps for mobile phones are free. Among the news organizations offering free mobile applications are ABC news, Associated Press, CBS News, FOX News, MSNBC, NPR, Reuters, *Time*, *USA Today*, and the *The Wall Street Journal*.[137] In May, 2011, the BlackBerry App World catalog listed only 71 paid news applications out of a total of 1,079 news applications, which amounted to less than 7 percent.[138] A May, 2011, review of Apple's App Store revealed that approximately 71 percent of news apps for the iPhone were available for free.[139]

However, some news organizations have attempted to charge for their apps . . . with varying success. Major news producers such as CNN, *Newsweek*, *The Washington Post*, and the *L.A. Times* developed "premium" apps for which they charged relatively low prices (in these cases, $1.99). These producers' apps included special features not available on the related free mobile websites. For instance, in December, 2009, "[i]n an era where nearly everyone

has grown accustomed to reading news online for free, CNN made a bold move by deciding to charge $1.99 for its offering", which allowed purchasers to access news, weather and traffic reports for any location they chose, and its "iReport" feature invited and aggregated user-submitted content.[140] Then in December, 2010, with the launch of its free iPad app, CNN made its iPhone and iPod Touch applications free as well.[141] Similarly, when the *L.A. Times* launched its premium paid app in June, 2010, purchasers could save content (e.g., photos and articles) for later review and share stories on social-networking sites.[142] As of May, 2011, however, the application is available for free with the same features.[143] The *New York Times'* smartphone and tablet apps, however, allow purchasers to access the paper's "Top News" section, but other sections are only accessible if they have a digital or home-delivery subscription.[144]

Although it does not necessarily offer much promise of substantial funding to local news operations, this revenue model has led to at least one modest success story. Public Radio Exchange developed an app containing content from a highly popular program produced by Chicago Public Media: *This American Life*.[145] The $2.99 app allows users to search for and sample every episode of the program that has aired since 1995. It has earned revenue in the "low hundreds of thousands," which has helped offset production costs associated with the program, whose overall budget is about $2 million, according to Chicago Public Media.[146]

Moreover, of the 29 percent of paid news applications for the iPhone (2,719 out of 9,233), most offer little in the way of hard or breaking news and instead provide very soft "news"—auto news, entertainment news, and sometimes no news at all, just cartoons and entertainment.[147] Those that do charge split the revenue earned with the owners of the operating system. Apple, Google, RIM, and Nokia manage the app purchases on devices that use their operating system and usually retain approximately 30 percent.[148]

Gordon Crovitz, founder of Journalism Online, believes subscriptions, rather than one-time apps or pay walls, are the most promising revenue source.

On the iPad, too, most news apps are free: A February 2011 survey of Apple's iPad App Store revealed that only about 29 percent of apps were available for free[149]—yet nearly all of the *news* apps were free.[150] For instance, NPR, BBC, AP, and Reuters offer free iPad apps[151]—as does *USA Today* (its app ranked sixth in popularity in June 2010 among free iPad apps).[152] The 537 paid iPad apps designated by Apple as "news" apps are primarily news aggregator and news reader apps, foreign news apps, and apps focusing on soft news items like sports, entertainment, and cartoons—but they also include apps published by the *New York Post* and 60 Minutes.[153] And in our own May 2011 survey of Apple's App Store, we found a number of U.S. newspapers, radio stations, and TV stations offering iPad apps for free—more than 200 at present, including the *Oklahoman*, the *Virginian-Pilot*, and the Boston Pilot.[155]

However, publishers are constantly experimenting with new ways of making money from their apps. Several publishers are experimenting with a hybrid model that offers apps for free *if* consumers are paid subscribers to either the print or online editions of their publication. For example, the *Wall Street Journal* app, downloadable without charge, provides access to content for consumers who already have signed up for a $3.99 per week subscription.

Some premium magazines have developed, or are in the process of developing, paid apps for the iPad that include the content of a specific issue along with additional special content. Some simply put their print magazine into a digital format. For example, Conde Nast's *Vanity Fair* offers an iPad version of its current issue each month through Apple's iTunes store for $1.99 for a one-month subscription or $19.99 for the year.[156] *Time*, *Popular Science*, and *Wired* also have developed publication issue apps for the iPad.[157]

Pay Wall/Subscription Models

For content providers hoping to generate non-advertising revenue through mobile devices, the most promise seems to be in charging an ongoing monthly subscription fee—particularly with tablets and e-Readers (as opposed to phones).

In March 2010, prior to the iPad launch the following month, only one major newspaper, the *Wall Street Journal*, offered a digital subscription (as opposed to a paid app). Though consumers express antipathy to the idea of paying for content, Apple's Steve Jobs argues that consumers will be willing to pay for content that has "more value than just a webpage."[158] In March 2011, the *New York Times* switched to a metered pay system in which readers who are not home delivery subscribers get access to 20 free digital articles per month, but have to pay for a digital subscription

Several publishers are experimenting with a hybrid model that offers apps for free *if* consumers are paid subscribers to either the print or online editions of the publication.

to exceed that limit on their computers, smartphones, or tablets.[159] Within the first three weeks of launch, the *Times* had 100,000 paying subscribers, but it is not yet clear how lucrative this set-up will ultimately be.[160] Another closely watched experiment is News Corp.'s launch of *The Daily*, a newspaper available exclusively on the iPad with no print companion.[161] It will test whether newspaper economics can work better when they no longer have to carry the cost of trucks, ink, and paper.[162]

Some publications have been charging for monthly subscriptions through Kindle and nook e-Readers. Newspapers with e-Reader subscription plans include the *St. Petersburg Times* (at $9.49 per month); the *Orlando Sentinel* ($5.99); the *Atlanta Journal-Constitution* ($5.99); the *Charlottesville (VA) Daily Progress* ($4.49); the *Big Rapids Pioneer (MI)* ($6.75); the *Lewiston Tribune* (serving counties in Washington and Idaho, $3.99); the *Arizona Republic* ($9.99); the *San Jose Mercury News* ($5.99); the *Orange County Register* ($5.99); and the *Austin American-Statesman* ($5.99).[163] Gordon Crovitz, founder of Journalism Online, a venture to help publishers charge for content, says that in the past year he has become convinced that subscriptions, rather than one-time fees for apps or pay walls, show the most promise as a revenue source.[164]

Annual subscriptions for newspapers and magazines are beginning to be offered through iTunes. But some publishers have complained that because Apple is retaining all of the information about customers, their ability to fully monetize the subscriptions is limited. Google has entered the fray, offering a deal that it says is better for publishers.[165] According to press reports, issues being discussed in the negotiations include "who controls data about users and how to split subscription revenue,"[166] as well as how subscriptions will be priced.[167]

Donation Models and Mobile Technology

The devastating earthquake in Haiti in early 2010 provided an opportunity to demonstrate the particular effectiveness of mobile fundraising. Concerned people could offer a donation by texting a designated number; the American Red Cross earned $800,000 within 48 hours of the earthquake this way.[168] These fundraising efforts necessitated the participation of wireless service providers.[169] As new, low-cost payment methods designed specifically for mobile devices are developed, opportunities for conducting more technologically sophisticated forms of mobile fundraising will no doubt emerge. Given the ability mobile technology provides to reach a broad range of consumers, mobile fundraising has the potential to benefit not only charities but also nonprofit media, such as public radio, which rely on donations as their primary revenue source. As mobile fundraising methods evolve, the procedures and policies adopted by various entities in the mobile ecosystem—including service providers, phone makers, application store operators, and application developers—likely will have an impact on the effectiveness of mobile donations as a revenue source for nonprofit media.[170]

Mobile Industry Finances

Total annual service revenues for the mobile wireless industry reached approximately $159.9 billion in 2010, up 5 percent from $152.6 billion in 2009.[171] Earnings before interest, taxes, depreciation, and amortization (EBITDA) margins for the four nationwide mobile wireless service providers in 2010 (Q3) ranged from approximately 17 percent to 47 percent.[172]

Conclusions

With mobile wireless changing rapidly, predictions are difficult. Even the definition of "mobile" is evolving: when tablets get smaller and start to have phoning capability, will they be tablets or phones?

But here are several trends that can be identified:

First, mobile is becoming a major delivery mechanism for news. We see no reason that this will abate. The phone is a pocket-size way of getting bulletins quickly and so lends itself to news. Trends suggest that, increasingly, those news bursts will be personalized to individual users' interests and locales.

Mobile news distribution has the potential to make digital news and information more accessible to populations that previously lacked access to personal computers or were simply less likely to look for news and information online. Mobile Internet usage is disproportionately high among members of those populations, including minority and low-income consumers. (See Chapter 23, Diversity.)

So far, mobile devices have not proved to be a major source of revenue for news outlets, neither through advertising nor paid applications, but news organizations are still experimenting with different business models. While some news organizations are giving away their mobile apps for free, others (e.g. the *Wall Street Journal* and the *New York Times*) are requiring a digital or home delivery subscription for access to mobile applications. The mobile advertising market is also changing. Advertisers spent $202 million on display ads for mobile devices in 2010, up 122 percent from a year before.

It is too early to determine whether content published on e-Readers and tablets like the iPad will be more lucrative for publishers. Most news apps on the iPad are free. On the other hand, people are proving more likely to buy media subscriptions on e-Readers than they have been on phones or websites. E-media revenue for magazines is expected to grow by double digits next year. Annual subscriptions for newspapers and magazines via the iPad are beginning to be offered through the Apple Store. The launch of *The Daily*, a newspaper available exclusively on the iPad with no print companion, brings an opportunity to observe newspaper economics with the cost of trucks, ink, and paper removed from the equation.