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Map the Mobile Opportunity

For many people in the world today, a mobile device will provide their first digital experience. For them, their mobile device is the Web. By eMarketer estimates, 3.9 billion—yes, billion—people will own a mobile phone in 2012, so the mobile opportunity is clearly significant. The best way to get started in mobile marketing is by understanding the current landscape, which dictates whom you can reach now and how to do so effectively. In this chapter, we'll walk you through the key market data and landscape insights you'll need to understand in order to successfully capitalize on this mobile opportunity.

Chapter Contents

Market Size and Growth Potential

When leaving the house, most of us carry a few basic essentials: wallet, keys, and a mobile phone. In time, as the mobile phone becomes more sophisticated and enables you to unlock your home and car and pay for essentials through the magic of *near-field communications (NFC)*, it may end up being the *only* thing you need when you leave the house.

Before long, average consumers will be connected 24/7, sending and receiving a constant stream of data from all the objects that surround them, from sales tags in stores to the refrigerators in their kitchens. The future this heralds is the "internet of things," or as *The Economist* termed it in an article, "the internet of everything" (December 9, 2010). For now, mobile phones are the one connected device most people carry with them at all times, which makes them both highly personal and ubiquitous.

Being more connected has changed the ways consumers use their mobile devices. The fact that mobile phones can make calls is increasingly less relevant. Instead, consumers now expect to network, share experiences, browse, and shop via a wide range of platforms, from *smartphones* to *tablets* to new and increasingly complex-connected devices of all kinds. From home appliances to utility meters to Internet-enabled cars, the growing proliferation—and sophistication—of smart devices that can communicate with each other (commonly referred to as *machine-to-machine* or *M2M communications*) will only accelerate this trend.

As mobile phones have become more universal, their appeal as a marketing vehicle has grown commensurately. Simply put: if your audience is mobile (and we guarantee you that it is), your marketing has to be, too. Yet it is a diverse audience, and we've found that that diversity—often referred to as *fragmentation*—is the number-one reason that most marketers have shied away from using mobile. So, helping you make sense of the mobile user base is our first goal.

In this chapter, we'll share our own expertise as well as what we learned from talking with the following experts:

- Joy Liuzzo, former vice president of mobile at market research and data analytics provider InsightExpress (`www.insightexpress.com`)
- Greg Sterling, founding principal of Sterling Market Intelligence and contributing editor for the online publication *Search Engine Land* (`www.searchengineland.com`)

You'll hear from Joy and Greg throughout this chapter.

The easiest way to make sense of the mobile user base is to illustrate the landscape in relation to ownership of the key device type (smartphones) and the key activity (mobile web usage) as we've done in the pyramid in Figure 1.1. At the base are all mobile users, which includes anyone who owns any kind of mobile phone.

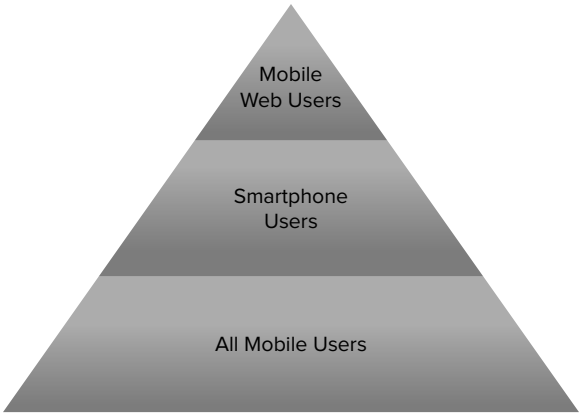

Figure 1.1 Mobile usage can be viewed as a pyramid.

You will often hear older or less-sophisticated mobile devices referred to as *feature phones*, although the definition of a feature phone is somewhat loose. It's generally accepted that the feature phone category includes everything from early devices that were capable of nothing but voice and text all the way up to today's more advanced models that support primitive mobile applications and rudimentary browsers; some, including the so-called quick-messaging phones, even have full QWERTY keyboards and touchscreen displays. The smartphone category is also diverse, including earlier devices with full browsers but no touchscreen or rich-media capabilities, as well as the more recent (and more sophisticated) multitouch handsets on the market, exemplified by the iPhone.

Although some feature phones are equipped with browsers and some feature phone owners do surf the Web, their numbers are dwindling, and with the current rate of handset replacement and the falling cost of smartphones, less-sophisticated devices are fast becoming a thing of the past in developed markets. Feature phones will not disappear overnight, of course, particularly in developing economies. According to eMarketer projections, the share of the U.S. market will be cut in half between 2012 and 2016, falling from 52 percent to 26 percent of the mobile user base.

All smartphones are capable of accessing the mobile web, and most (but not all) smartphone users do so. This makes smartphone users a subset of all mobile users, and mobile web users are a further subset. And while not all mobile web users own smartphones, in the most-developed markets like the United States and Western Europe, where a significant portion of the user population owns a smartphone, most mobile web users own smartphones.

Let's start with the base of the pyramid. As you might expect, the user demographics of mobile are eye-popping: according to eMarketer, 3.9 billion—well over half the world's population—will own a mobile phone in 2012. But it's worth noting that these users are far from evenly distributed. As listed in Table 1.1, over half can

be found in the Asia-Pacific region, nearly one-third in EMEA (Europe, Middle East, and Africa) and the remainder in the Americas. The five largest single markets from a mobile-user perspective are, in descending order, China, India, the United States, Brazil, and Russia.

▶ **Table 1.1** Asia-Pacific is home to more than half of the world's mobile users. (2012)

Region	Users (Millions)
Asia-Pacific	2,152.5
Europe	640.3
Middle East and Africa	484.9
Latin America	389.9
North America	265.6
Worldwide	3,933.3

Source: eMarketer, April 2012

Big Numbers: Subscribers versus Users

Any data related to mobile is inevitably going to lead to some big numbers, so when you're looking at mobile population bases, it's important to distinguish in particular between mobile subscribers and mobile users. The two terms are sometimes used interchangeably, but they actually represent different groups.

The number of mobile *subscribers* is the number of active mobile subscriptions, and that tends to be the bigger number simply because a single person can have more than one phone (one for home and one for work, for example), meaning that one person gets counted as two subscribers. This explains why mobile subscriber penetration in many countries can exceed 100 percent, even when it is obvious that not every person has a mobile subscription.

Mobile *users*, on the other hand, signify one user/one phone. As a result, the number of mobile users tends to be significantly smaller—and a generally more accurate measure of mobile penetration—than that of mobile subscribers or subscriptions.

The size of the mobile user population is important, but you need to look past sheer numbers and consider the percentage of the total population that owns a mobile phone. That is a key metric for assessing a market's overall development. See Table 1.2 for a quick reference guide to mobile user penetration rates. They are in the 75 to 85 percent range in North America, across much of Western Europe, and in Japan and South Korea, making these markets the world's most developed.

▶ **Table 1.2** Mobile user penetration varies widely by region and country (2012).

Country or Region	Mobile User Penetration
South Korea	85.0%
Japan	84.0%
United Kingdom	82.8%
Germany	80.7%
Western Europe	79.6%
Australia	79.5%
Italy	79.0%
Argentina	79.0%
Spain	77.9%
United States	76.8%
France	76.5%
North America	75.8%
Russia	74.0%
Eastern Europe	73.2%
Canada	66.6%
China	65.5%
Latin America	65.1%
Indonesia	60.0%
Brazil	58.0%
Worldwide	56.0%
Asia-Pacific	55.1%
Mexico	55.0%
Middle East/Africa	36.5%

Source: eMarketer, April 2012

High penetration rates also indicate that these markets have either reached or are approaching saturation, so growth in new users has slowed to a trickle. The real action in these countries is coming from users upgrading their devices and engaging in higher-value activities. We'll get to that in a bit.

Of course, the sheer scale of China and India's populations make for massive mobile user bases. See Figure 1.2 for details. China's estimated 880.4 million *mobile* users exceed the total populations of the United States and Western Europe combined! India is not far behind, and other populous Asia-Pacific countries like Indonesia, Pakistan, and the Philippines also boast sizable and growing mobile user populations.

In all, eMarketer estimates 75 percent of the world's mobile users reside in the emerging markets of Latin America, Africa and the Middle East, and the Asia-Pacific region.

Mobile Phone Users Worldwide, by Region and Country, 2010-2016
millions

	2010	2011	2012	2013	2014	2015	2016
Asia-Pacific	**1,750.5**	**1,948.2**	**2,152.5**	**2,345.6**	**2,519.6**	**2,690.8**	**2,833.3**
—China*	671.1	780.6	880.4	975.4	1,051.2	1,122.4	1,187.5
—India	387.1	416.2	470.0	524.9	581.1	638.4	684.1
—Indonesia	106.9	130.2	148.9	160.5	169.7	179.0	185.9
—Japan	104.6	105.8	107.0	108.2	109.3	110.4	110.9
—South Korea	40.9	41.2	41.5	41.9	42.2	42.5	42.8
—Australia	15.6	16.6	17.5	18.2	18.9	19.4	19.8
—Other	424.3	457.7	487.2	516.5	547.3	578.6	602.3
Middle East & Africa	**402.7**	**445.1**	**484.9**	**524.8**	**556.6**	**593.8**	**629.6**
Latin America	**347.8**	**369.2**	**389.9**	**409.3**	**427.4**	**444.5**	**461.7**
—Brazil	100.6	109.9	119.3	128.9	137.7	146.5	155.5
—Mexico	55.1	59.1	63.2	67.4	71.7	75.4	79.1
—Argentina	31.0	32.2	33.3	34.5	35.3	36.0	36.8
—Other	161.1	168.1	174.0	178.5	182.8	186.5	190.2
Western Europe	**314.5**	**322.6**	**329.4**	**336.0**	**342.4**	**347.4**	**351.7**
—Germany	62.7	64.3	65.6	66.8	68.0	69.1	69.8
—UK	51.1	51.7	52.2	52.7	53.2	53.4	53.7
—France	47.3	48.8	50.0	51.3	52.4	53.4	54.3
—Italy	45.3	47.0	48.4	49.8	51.2	52.0	52.7
—Spain	34.9	35.8	36.6	37.5	38.3	39.1	39.9
—Other	73.3	75.0	76.6	78.0	79.4	80.4	81.3
Eastern Europe	**293.3**	**302.1**	**310.9**	**319.7**	**328.4**	**337.0**	**345.0**
—Russia	97.6	99.9	102.2	104.4	106.6	108.8	110.9
—Other	195.7	202.2	208.7	215.2	221.7	228.2	234.1
North America	**252.8**	**259.4**	**265.6**	**271.3**	**276.9**	**282.0**	**286.2**
—US	232.2	237.7	242.8	247.5	252.1	256.2	259.6
—Canada	20.6	21.8	22.8	23.8	24.8	25.7	26.5
Worldwide	**3,361.6**	**3,646.8**	**3,933.3**	**4,206.7**	**4,451.4**	**4,695.4**	**4,907.4**

*Note: mobile phone users are individuals of any age who own at least one mobile phone and use the phone(s) at least once per month; *excludes Hong Kong*
Source: eMarketer, April 2012

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Figure 1.2 The scale of emerging market mobile usage is immense.

Emerging markets such as Brazil, China, India, Indonesia, Nigeria, the Philippines, Russia, and South Africa may have large user bases, but overall mobile penetration is lower than in North America and Western Europe, indicating room for growth. In these markets, with their vast geographies and populations, mobile is a more cost-effective means of connecting consumers to communications, media, and commerce than building out and maintaining capital-intensive fixed-line networks.

Not All Emerging Markets Are Created Equal

It's easy to get sidetracked by the massive user numbers in emerging markets, particularly in countries like China and India, because they suggest such a tantalizing opportunity. But they merit a closer look because there is significant variation in terms of spending power and the sophistication of consumers and their devices not only across regions but also within individual markets. So, for example, the mobile opportunity in South Africa will differ from the rest of sub-Saharan Africa, just as the opportunity for reaching urban consumers in Shanghai or São Paulo will differ from the prospects of targeting their rural counterparts. In other words, the global opportunity remains large, but you have to look below the surface to gauge just how large.

Clearly, many factors are working in mobile's favor, but it's about more than the numbers: it's about getting and staying connected, wherever, whenever. That is where the transformative potential of mobile technology lies—in bringing information to people who need it.

One great example is Nokia Life Tools, which distributes vital crop data such as weather forecasts and commodity pricing trends to rural farmers via text messages. The program started in India in 2009 and has since spread to China, Indonesia, and Nigeria. Nokia did extensive anthropological research among rural Indian communities before developing Life Tools, but it's easy to see that the tools effectively met a need of rural farmers, and how connecting them to crucial data for a modest cost could make a big difference in their lives. The bottom line: mobile functions well as a delivery mechanism for media and entertainment, but it serves other purposes with equal effectiveness.

The Global Rise of Smart Devices

Having lots of connected consumers is important, but how they connect and the devices they use are key factors in determining the extent of the mobile opportunity for a particular market. Put simply: The more sophisticated the device, the more sophisticated the activities it enables, and the more occasions and venues marketers will have to engage with consumers. So, let's look at the second level of the pyramid.

Smartphones

Android, BlackBerry, iPhone, Windows Phone … All of these devices may come to mind when you're thinking about smartphones, but for a moment, don't focus on the individual platforms. Instead, look at the shared capabilities they facilitate. Smartphones, when you think about it, are nothing less than sophisticated portable computers with roughly 4-inch screens. In fact, it's often said that the average smartphone sold today has more computing power than the systems NASA used to put the first men on the moon.

Surveys vary on the extent of smartphone adoption, but most agree it is fast approaching the magical 50 percent mark among the U.S. mobile user population. As shown in Figure 1.3, eMarketer estimates it will reach 48 percent in 2012 and then accelerate to 74 percent by 2016.

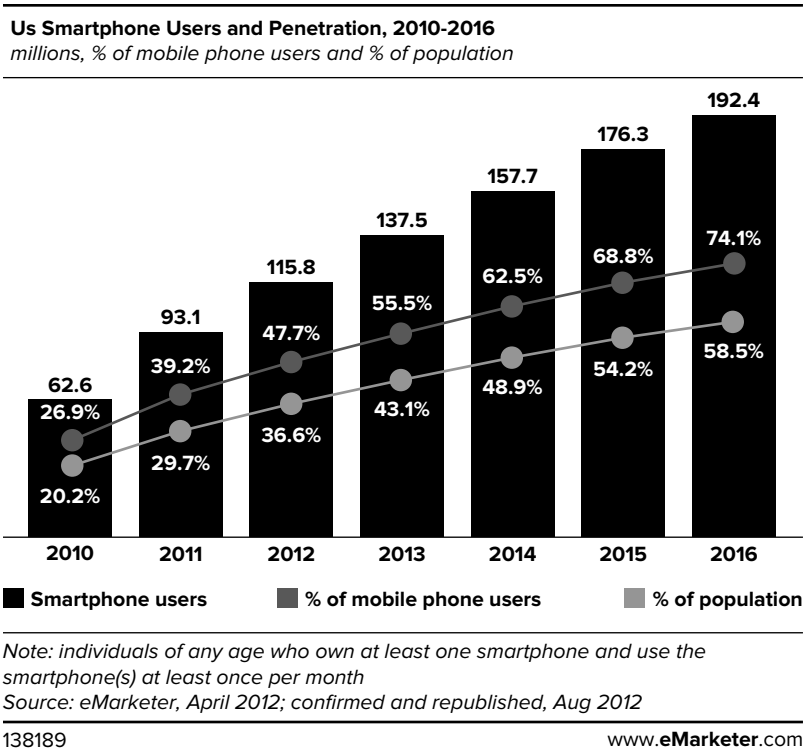


Figure 1.3 Smartphone adoption is rising at a rapid clip in the United States.

What Makes a Smartphone So Smart Anyway?

The range of smartphones available on the market today is dizzyingly vast and expanding with seemingly no end in sight. Specs vary considerably by manufacturer and platform, but common smartphone characteristics include:

- High-density, high-resolution color display measuring two or more inches (four seems to be around the industry average, although hybrid smartphone-tablet devices such as Samsung's Galaxy Note, which has a 5.3-inch screen, are pushing the envelope)
- Touchscreen interface
- Advanced, purpose-built operating system (such as Apple's *iOS,* Google's *Android,* etc.)
- Ability to send and receive email
- Full-featured web browser that can render standard web pages except those elements built with Flash (although Android does support Flash, at least through version 4.0 of the OS)
- Access to and the capacity to run applications (*apps*)
- A camera that can capture still images and high-definition video
- *GPS* capabilities
- Ability to access both Wi-Fi and high-speed mobile broadband networks

While we're approaching the tipping point on a percentage basis, we've arguably blown past it from another perspective. If you're a marketer, chances are you're already focusing some, if not most, of your efforts on reaching the smartphone audience. And if you haven't started thinking about it, stop what you're doing and reconsider the emphasis of your campaigns. The smartphone user represents nothing less than the future of marketing—not just mobile marketing but all of marketing.

That may sound hyperbolic, but consider the anecdotal evidence. Aren't most of the smartphone owners you know glued to their devices—at all times? A Google-sponsored study even asked people whether they look at their smartphones in the bathroom. Guess what? The majority answered yes! Other research has found people consulting their smartphones during sex, or, in the case of a Telenav study, more inclined to forego sex altogether for a week than be without their phone. (Okay, it was only 33 percent of Americans, but you get the idea.)

Now, consider the data in Table 1.3. Look at what it says about smartphone users: market research and data analytics provider InsightExpress (`www.insighexpress.com`) found that smartphone owners were more likely than all mobile users (which includes everyone with a smartphone and a non-smartphone) to perform every activity, sometimes by a factor of two or three. Given that smartphone owners represent less than half of the survey sample (43 percent to be precise), these findings show the significant impact smartphones have on overall usage numbers.

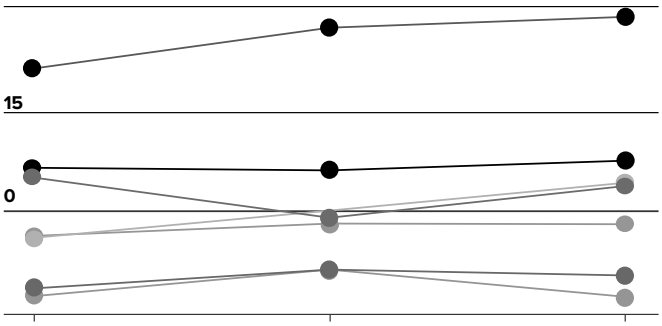
▶ **Table 1.3** Activities of mobile phone owners and smartphone owners, January 2012 (respondents who use the device at least once a week)

Activities	All Mobile Owners	Smartphone Owners
Send/receive text messages	57.2%	74.4%
Use the Internet to visit websites	30.6%	61.6%
Take pictures with the camera in your phone	31.8%	51.8%
Use mobile applications—for example, maps	21.2%	45.8%
Use an app store on your phone	17.0%	38.2%
Play mobile games	25.2%	48.7%
Manage your calendar/schedule on mobile phone	22.9%	40.9%
Listen to streaming music (e.g., Pandora, Spotify)	15.2%	32.7%
Listen to music purchased on phone (e.g., iTunes, Amazon)	12.5%	27.3%
Listen to music burned from a CD	8.7%	17.8%
Watch videos on your mobile phone	15.3%	32.4%
Send/receive email	32.2%	64.9%
Send a picture to someone from your mobile phone	22.5%	39.8%
Check in using something like foursquare, Gowalla, or Loopt	4.5%	10.2%
Update a social networking site such as Facebook or Twitter	23.5%	46.2%
Redeem or download a coupon	4.0%	9.1%
Read an e-book	5.5%	12.7%
Take videos on your phone	12.4%	24.4%
Check the weather	28.5%	57.1%
Scan a 2D or QR code	4.9%	11.3%
Scan a regular barcode (UPC/product barcode)	5.4%	12.4%
Use an Augmented Reality application	2.5%	5.8%
Pay for something at a store using your mobile phone (e.g., waving your phone over a payment system)	3.4%	7.6%
Make a purchase of something that you can have shipped to you or pick up in a store	4.5%	10.2%
Monitor your health (e.g., keep track of your weight/diet, blood sugar, blood pressure, or other health related things)	3.8%	8.4%
Search for information on a product or company in which you're interested	12.0%	25.3%
Search for deals or special offers located near you	9.2%	20.0%
Do a price comparison	7.6%	17.3%
Use a bookmarking/content reader (e.g., Instapaper)	3.7%	8.0%
	N=1046	N=450

Source: InsightExpress, January 2012

Consumers may spend more time overall on a daily basis sitting in front of the TV, but the smartphone captures more of their attention. In fact, most of them are probably using their smartphones (and tablets) while watching television. They're glued to updates and the constant stream of new information coming from the Web or services such as Facebook and Twitter. Sure, you can access that on a connected TV, but people are creatures of habit, and they're already trained in the ease with which they can get that information on their smartphones. When it comes to the amount of time people spend with different media, print is stagnating and TV is flatlining, but mobile is growing at a faster pace than even the desktop, and smartphones are a big reason why (see Figure 1.4). Put it this way, people may spend more time watching TV, but there's no other screen in front of people's faces as many times throughout the day as the mobile phone.

Growth of Average Time Spent per Day with Major Media by US Adults, 2009-2011
% change



	2009	2010	2011
Mobile	21.9%	28.2%	30.0%
Internet	6.6%	6.2%	7.7%
TV and video	5.1%	-1.1%	3.8%
Radio	-3.9%	-2.0%	-2.1%
Magazines	-12.0%	-9.1%	-10.0%
Newspapers	-13.2%	-9.1%	-13.3%
Other	-4.2%	-	4.3%

Note: growth for total was 2.4% in 2009, 1.5% in 2010 and 5.0% in 2011; time spent with each medium includes all time spent with that medium, regardless of multitasking; for example, 1 hour of multitasking on the internet and watching TV is counted as 1 hour for TV and 1 hour for internet
Source: eMarketer, Dec 2011

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Figure 1.4 The amount of time spent with mobile is rising faster than all other media.

Tablets

And then there are tablets, the moribund category Apple almost singlehandedly succeeded in revitalizing with the launch of the iPad in March 2010. Not solely a mobile device nor a computing device, tablets draw on elements of both. Through the end of June 2012, Apple had sold 84.1 million iPads, staking the company to a sizable lead in the tablet market.

No single tablet due out in the next couple of years is likely to outsell the iPad. As with smartphones, the more relevant question is whether, collectively, the growing roster of Android tablets can catch up to the iPad. Most researchers predict that will happen early in the second half of the decade (see Figure 1.5 for an outlook on Apple's gradually eroding market share). That means tablets will see a version of the same two-horse race taking place in the smartphone market.

Tablet Sales Worldwide, by OS, 2011-2016
thousands of units

	2011	2012	2013	2016
iOS	39,998	72,988	99,553	169,652
Android	17,292	37,878	61,684	137,657
Microsoft	0	4,863	14,547	43,648
QNX	807	2,643	6,036	17,836
Other	1,919	510	637	464
Total market	60,017	118,883	182,457	369,258

Note: sales to end users; numbers may not add up to total due to rounding
Source: Gartner, "Forecast: Media Tablets by Operating System, Worldwide, 2010-2016, 1Q12 Update" as cited in press release, April 10, 2012

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Figure 1.5 Global tablet sales seen tripling in next four years.

Tablet: Mobile Device or Computing Device?

The second most frequent question we get after "Is it the year of mobile?" is "Are tablets mobile devices?" When it was first introduced in 2010, many experts derided the iPad as nothing more than a "big iPod touch." Nearly three years later, and after over 84 million units sold, it's clear the iPad is much more than that. But exactly what it is remains in dispute. Is it a mobile device or a computer?

Actually, it's a little of both. The iPad shares an operating system and apps with its smaller screen cousin, the iPhone (Android tablets have a similar relationship to Android-equipped smartphones). At the same time, it has engendered user behaviors such as shopping and buying that are much closer to the desktop than to smartphones. Of course, it is important to distinguish between the iPad (and other large-format tablets), which

have found widespread audiences in both the home and the workplace, and smaller so-called "media tablets" such as Amazon's Kindle Fire that are designed primarily for personal media consumption. However, we are still at the early stages of a fast-moving market, so while it is important to be mindful of these distinctions today, you do need to pay attention to the way the category evolves, as these differences may erode over time.

The impact of tablets' success will continue to reverberate across the computing category. Rather than the desktop trickling down to mobile devices, the reverse is taking place, as apps and other user interface features "trickle up" to the desktop. Witness the latest generation of Apple's OS X desktop software, which Apple itself bills as "inspired by iPad," or Microsoft Windows 8, which adapts the tile-based Metro interface from the Windows Phone 7 OS for simultaneous use on both tablets and PCs. Ultimately, the capacity to split the difference between smartphone and PC is possibly the most revolutionary quality of the tablet.

Tablet (and especially iPad) sales have soared since the launch of the first iPad. At the inauguration of the iPad 2 in March 2011, Steve Jobs honed in on the implications, proclaiming the iPad represented the dawn of the "post-PC" era. Depending on how you look at it, Jobs' proclamation was either a bold or precarious position for a computer manufacturer to take because it says the future lies in portable computing and hybrid devices like the tablet—part computer, part mobile—that will effectively change our notion of both categories. Appropriately, Apple is now the leader in the revolution it declared: its mobile devices now outsell its computers. In time, other consumer electronics manufacturers may follow in Apple's path.

Jobs called it post-PC, but we see it as a broader movement toward a post-device world. Here's why: The forces pushing consumers away from PCs to portable computing devices like smartphones and tablets are ushering in a phase in which activities such as accessing the Web and social networking and platforms like Facebook that consumers use to undertake these activities will take precedence over the devices they use to do so.

The ascension of smart devices does not mean the imminent death knell of the PC as we know it, but it is a recognition of the changing nature of communication—not just the devices we use to communicate, but also the ways in which we use them. There is now a growing expectation that we should be able to communicate, message, network, browse, and shop from a range of devices, both portable and stationary, not limited to the phone and not limited to what might be regarded as traditional telephony. The fact that phones can be used to make calls is increasingly irrelevant.

These changing patterns are opening new doors for marketers. Your job is to figure out how to walk through them and reach the engagement that lies on the other side. Just remember: it's about the people using the devices, not the devices themselves.

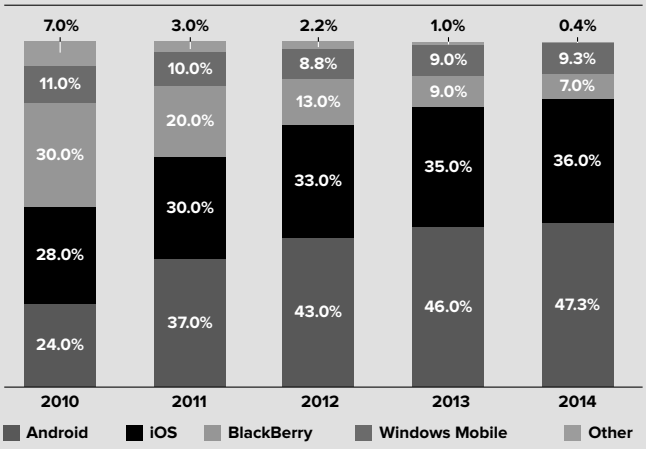
Beware Platform Fragmentation

Each smart device platform is built on a unique operating system (OS). For example, iPhones and iPads, which are built exclusively by Apple, run the company's proprietary iOS. BlackBerry functions according to a similar model of vertical integration, building its own devices and designing its own software. Android devices, by contrast, are built by multiple manufacturers and run one of the many versions of the Android OS, which is an open source platform controlled by Google. Microsoft splits the difference between Apple and Android, licensing the Windows Phone software to multiple hardware manufacturers but maintaining tight control over the software. Unlike Google, Microsoft does not allow manufacturers or carriers to customize its software interface.

If that sounds like a complex situation, it is. All of these platforms share the same basic browser standards, meaning that you don't need to design your site differently for each one. However, they all have different *app stores* and app platforms, which means to reach the widest possible audience when building an app, you do need to at least consider the top two platforms, which can mean more development time and resources on your part.

Fortunately, the market seems to be consolidating. Increasingly, we believe, smartphone users will be concentrated on two platforms: Google's Android OS and Apple's iOS, with Microsoft and BlackBerry the also-rans in the smartphone race. See the following graphic for a more detailed breakdown of the smartphone market over the next two years. In the tablet segment, Apple enjoys the upper hand for now and for the foreseeable future, although Android will slowly chip away at Apple's dominance.

US Smartphone User Share, by OS, 2010–2014
% of total



Note: individuals of any age who own at least one smartphone and use the smartphone(s) at least once per month
Source: eMarketer, Aug 2012

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The emergence of a two-horse race, at least in the United States, will ease some of the burden on marketers, but it won't necessarily resolve the problem of intra-platform fragmentation. This isn't really a problem for Apple because of the limited number of iPhone models in circulation, the generally highly structured schedule of software updates, and high upgrade rates. Apple does not disclose data about iOS upgrade patterns, but independent analysis by developers using app download data shows adoption rates of some version of iOS 5 (Apple's last major update prior to the release of iOS 6 in September 2012) in the 75 to 80 percent range.

Android is a different story. There are currently eight versions of Android in existence, in order of origin: Cupcake (1.5), Donut (1.6), Éclair (2.1), Froyo (2.2), Gingerbread (2.3), Honeycomb (3.0), Ice Cream Sandwich (4.0), and Jelly Bean (4.1). Newer devices usually—but not always—get the latest version of the OS, and older models are sometimes upgraded to the newest version, but the decision to do so and the timing for it are determined by the phone manufacturer, not by Google. So, even if Google releases an upgrade, it may take weeks and even months for all the Android smartphones to receive it, if at all. According to the Android Developers website (`developer.android.com`), as of September 2012, 72 percent of Android phones were still running Gingerbread and Froyo, while fewer than 2 percent were running the latest version, Jelly Bean.

What's Driving the Growth in Smart Devices?

A number of factors are contributing to the growth in smartphones and tablets, but the market forces play out a little differently with each.

Price

Lower-cost devices are emerging. Although the newest smartphones come at a premium, even with generous carrier subsidies, older, lower-end smartphones can even be obtained for "free," provided the user signs up for a two-year contract. For example, Apple's iPhone 3GS, introduced in 2009, continues to be a strong seller despite the fact it is three years old. Of course, the fact the phone is "free" to the end user doesn't really make it free. The U.S. carriers that offer the iPhone (which is considered to have the highest subsidies in the business) underwrite an estimated $440 of the phone's approximate $660 average selling price, a figure that is calculated by averaging the costs of all models across the iPhone range, from the low-end 3GS to the highest-end 64GB 4S.

Outside of the United States, where carrier subsidies factor less into the cost of a phone, manufacturers are taking seriously the mandate to produce cheap smartphones that can hook people up to the Web without breaking the bank. Everyone recognizes

that data, not voice, is the future of mobile, and that makes it imperative for carriers, device manufacturers, and marketers alike to incentivize easier and cheaper web access from mobile devices.

Subsidies also are less of a factor when it comes to tablet pricing, but here too, lower-cost options are emerging, provided that you don't feel the burning need to own the latest iPad. A number of Android tablets are available at the sub-$300 level, and we expect prices to continue dropping as the market expands and competition heats up.

Faster Mobile Networks and More Ubiquitous Wi-Fi

Smart device owners consume a lot of bandwidth accessing the Web and apps. This puts a heavy load on mobile carriers and often overburdens their networks, particularly in densely populated urban areas with a high concentration of smart device users. Smartphone owners are the primary culprits, because they rely on carrier networks, while the majority of tablets sold depend on Wi-Fi connectivity to access the Web. Wi-Fi networks are becoming progressively more ubiquitous, and even if they're not always free, they're generally available, which can help offload some of the traffic from clogged mobile networks.

Meanwhile, carriers are busy upgrading their networks to *fourth-generation (4G)* specs, which promise far greater speeds and more efficient handling of data. It will take time, likely several years, before all devices are equipped for the faster networks and before the networks reach every point-of-presence covered by current networks. Check out Figure 1.6 for an outlook on global 4G adoption rates.

LTE 4G Mobile Subscriptions Worldwide, by Region, 2011-2016
thousands

	2011	2012	2013	2014	2015	2016
North America	6,039	31,623	60,145	93,836	139,248	197,446
Asia-Pacific	1,815	9,846	32,656	79,140	165,539	309,111
Western Europe	1,368	4,816	15,668	45,547	86,405	140,233
Central & Eastern Europe	46	1,547	3,600	11,592	24,286	35,977
Middle East & Africa	126	883	3,420	12,530	32,266	69,190
Latin America	0	769	3,271	11,517	34,770	69,190
Worldwide	**9,393**	**49,484**	**118,759**	**254,161**	**482,513**	**830,968**

Source: IDATE, "DigiWorld" as cited in press release, Feb 21, 2012

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Figure 1.6 4G subscriber base forecast to grow more than fifteenfold by 2016.

Expect to pay more for more speed when the faster devices and networks do arrive, but in return, you'll be able to do virtually everything you do on a smartphone or tablet that you're accustomed to doing on your home PC and broadband connection.

Note: Marketers seeking scale still need to think beyond a single device class or OS platform.

Part of what is driving the rapid increase in the amount of time people spend on their mobile devices—and arguably the key part—is the ability to access the Web. That capability, either using a browser or a *native mobile app* that retrieves browser-based content, gives you many more options in terms of reaching consumers, and it means more sophistication on the part of your audience. That's why mobile web access constitutes the pinnacle of the user pyramid.

Greater Sophistication Means Higher Receptivity to Advertising

InsightExpress looks at a lot of data around user behavior and receptivity to advertising. We asked Joy Liuzzo, former vice president of mobile, what all of that data said about mobile users. She offered the following thoughts: "The advertising industry has a myth that the more sophisticated users are, the less likely they will be open to advertising. What we've found in the mobile consumer space is that smartphone owners, especially those that are heavy users of their device on a daily basis, are more open to advertising than those that are less frequent users of their devices. In short, the more someone uses their smartphone each day, the more open they are to advertising in general." The bottom line: These findings signal a shift in overall advertising and marketing strategies.

The Web Becomes Truly Mobile

For a long time, we distinguished between the Web and the mobile web, almost as if they were two distinct, albeit distantly related, entities. But that is starting to change—quickly—thanks to the rapid pace of smart device adoption. We're now seeing an acceleration in the unification of mobile and web. Check out the data in Table 1.4. In January 2010, mobile phones and tablets accounted for less than 2 percent of global Internet traffic. By January 2011, it more than doubled; and by January 2012, it more than doubled again. At the current pace, within three years, nearly two-thirds of total global Internet traffic will come from mobile phones and tablets.

▶ **Table 1.4** Mobile's share of total Internet traffic worldwide

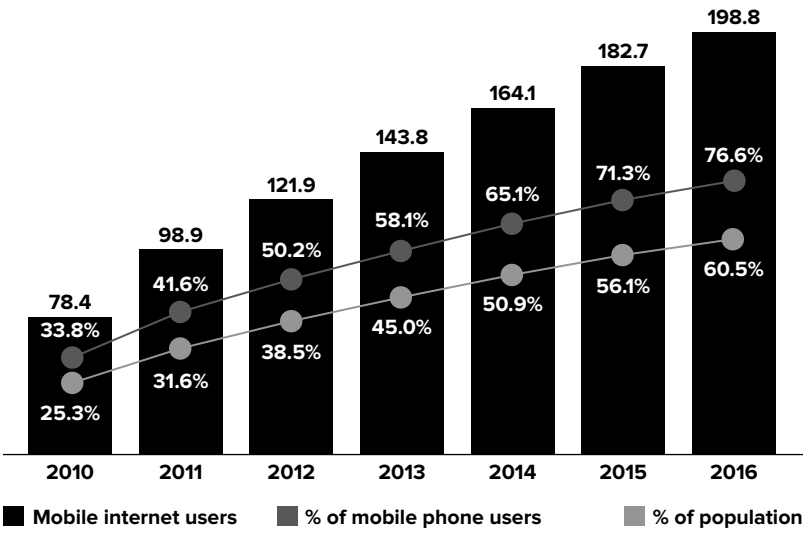
January 2010	January 2011	January 2012
1.6%	3.8%	8.8%

Source: Net Marketshare, March 2012

We could write a whole book on the competition between Apple and Android or the disparity between smartphones and feature phones, but ultimately, what matters more than which platform will win is the overall impact of having more connected devices in the hands of consumers.

Simply put, this trend will continue to drive more consumers to access the Internet from their mobile devices. In Figure 1.7, you'll see that nearly 122 million U.S. mobile users, representing nearly 40 percent of the total U.S. population, will access the Internet from their phones in 2012; by 2016, nearly 200 million will do so.

US Mobile Internet Users and Penetration, 2010-2016
millions, % of mobile phone users and % of population



Note: CAGR (2011–2016) = 15.0%; Mobile phone users of any age who access the internet from a mobile browser or an installed application at least once per month; use of SMS/MMS is not considered mobile internet access
Source: eMarketer, April 2012; confirmed and republished, Aug 2012

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Figure 1.7 Mobile Internet access is moving mainstream.

Those are big numbers, any way you look at it. But again, we'd encourage you to go beyond the totals and focus on who these mobile Internet users are. One figure that leaps out is that 95 percent of them are smartphone owners, and this number is only going to increase. In the United States, where smartphones and the accompanying data plans are relatively affordable (and increasingly seen as a personal necessity), Internet access from feature phones is practically irrelevant. That's not the case in emerging markets, at least not yet; but in advanced economies, figure on most of your mobile Internet users having smartphones.

Also, look at the demographics of these users. By eMarketer's estimates, today, as shown in Figure 1.8, nearly 60 percent of mobile Internet users are between 18 and 44 years old, again corresponding to the bulk of smartphone users. But over time, as Boomers—those between 45 and 64—adopt smartphones in greater numbers, they will become the single biggest group accessing the Web from their mobile devices. It's tempting to ascribe leading-edge behaviors to Millennials, but remember that while a higher percentage of younger mobile users access the Internet, overall, more older folks are going online from their mobile devices.

US Mobile Internet User Share, by Age, 2011-2016
% of total

	2010	2011	2012	2013	2014	2015	2016
0-11	1.0%	1.1%	1.1%	1.2%	1.3%	1.3%	1.4%
12-17	8.4%	8.1%	7.9%	8.0%	8.2%	8.6%	8.9%
18-24	20.6%	18.2%	16.3%	15.2%	14.6%	14.3%	13.9%
25-34	28.4%	25.5%	23.3%	22.3%	21.6%	21.1%	20.7%
35-44	19.2%	19.6%	19.5%	19.6%	19.6%	19.0%	18.7%
45-64	19.0%	22.7%	26.5%	28.3%	29.2%	30.2%	30.7%
65+	3.4%	4.9%	5.3%	5.3%	5.4%	5.5%	5.7%

Note: mobile phone users who access the internet from a mobile browser or an installed application at least once per month; use of SMS/MMS is not considered mobile internet access; numbers may not add up to 100% due to rounding
Source: eMarketer, April 2012; confirmed and republished, Aug 2012

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Figure 1.8 Age matters when it comes to mobile Internet usage.

The bottom line: More mobile users accessing the Internet means more opportunities to reach those users by building effective mobile websites, which we'll tackle in Chapter 4, "Week 3: Maximize Reach with Mobile Websites," and by promoting your message with mobile advertising, which we'll examine in Chapter 6, "Week 5: Promote Your Message with Mobile Advertising."

Mobile Users' App-etite Is Growing

Browsers and apps are the two primary mechanisms for mobile users to access the Web. Data from audience measurement firm comScore (`www.comscore.com`), as indicated in Figure 1.9, suggest that browser and app usage are roughly equivalent. Both have increased significantly over the past two years as smartphone adoption has climbed, but they have remained in relative lockstep.

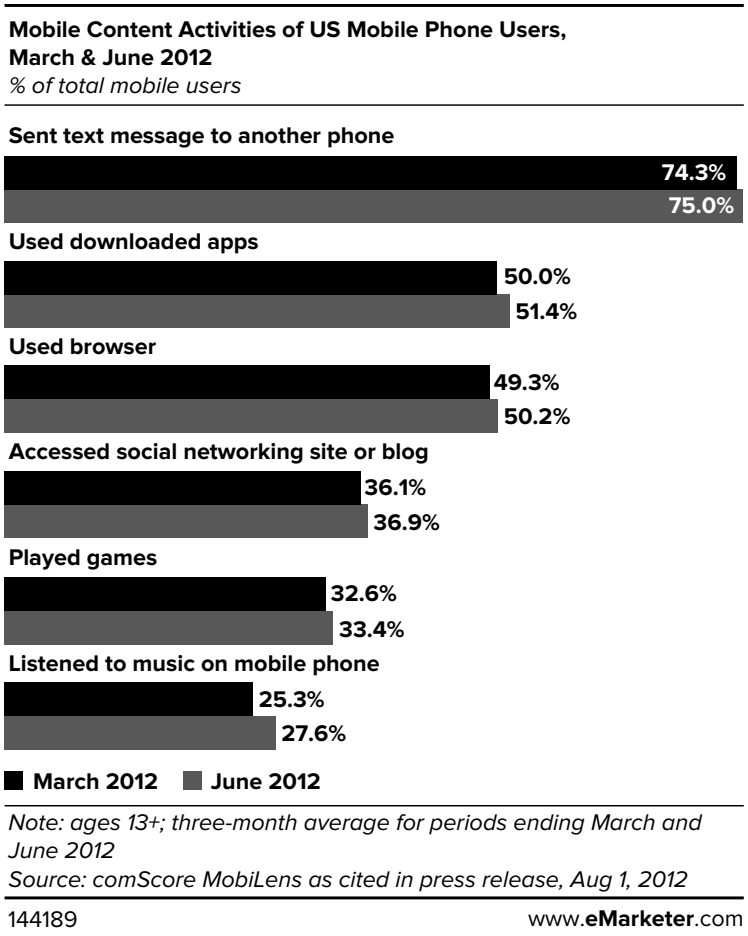

Figure 1.9 Overall mobile browser and app usage are nearly equivalent.

Other research supports this view. Jumptap (www.jumptap.com), a mobile ad network, conducted a study of ad requests served over the course of 2011, finding that the mobile web enjoyed a modest lead over apps. However, it also determined that ads served to both the Web and mobile apps are growing at a similar rate. Of course, not everyone agrees. A study by Yahoo! and global market research firm Ipsos (www.ipsos.com), for example, found that the preference for browser versus apps depends on activity (see Figure 1.10).

You may be aware that as adoption of smartphones and tablets has increased, a vigorous either/or debate about whether apps or browsers will win has emerged.

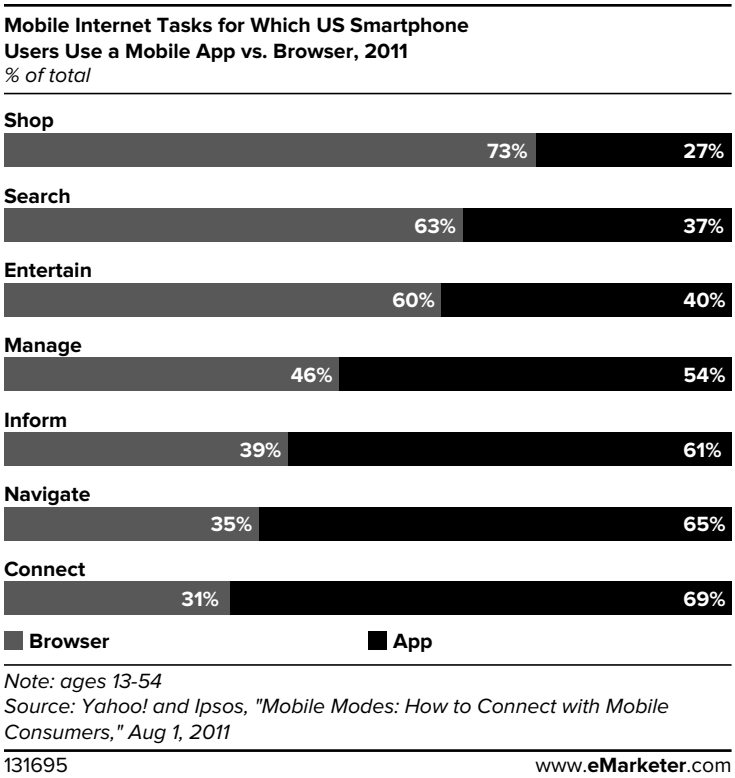

Figure 1.10 Activities determine mobile channel preference.

Understandably, you may be anxious about possible outcomes because you need to know how to most effectively apportion your mobile marketing budget. Rest assured, the outcome is unlikely to be either/or, and here's why: From a user-experience perspective, apps and browsers both bring something to the table. Apps are particularly effective at providing mobile users with an encapsulated experience that filters out the variables of browsing the Web. However, the cross-platform fragmentation we mentioned earlier and the need to ensure a consistent experience across each platform mean apps bring challenges as well as opportunities.

Browsers, on the other hand, are universal; every smartphone and tablet has one. The browsers found on iOS and Android devices are based on the same WebKit open source core, meaning they render web pages in a similar way. In addition, the mobile web allows more control over the user experience in that you are not subject to the guidelines imposed by app stores. So, rather than cancel each other out, apps and browsers will continue to coexist.

Moreover, thanks to the increasingly widespread implementation of *HTML5*, the mobile browsing experience is beginning to more closely resemble that of the desktop. This development may also help browsing the mobile web become more "app-like" in terms of user experience, especially given the noticeable trend toward designing mobile websites to look more like apps. So perhaps the more interesting trend is the effect the rise of apps will have on browsers and the increasing convergence between the two.

Ultimately, most research indicates that smartphone owners are equally active in using the Web and apps. Tablet owners tend to be somewhat more web-intensive, a by-product of the larger screen, which affords a better browsing experience. Correspondingly, they have a reduced need for the type of encapsulated experience that makes apps so vital on smartphones. We'll look at the steps you need to take to maximize engagement with mobile apps in Chapter 5, "Week 4: Maximize Engagement with Mobile Apps."

Future Forward: Ambient Connectivity

As mobile devices become widespread and physical objects become increasingly connected to the Web, marketers need to open themselves up to thinking "outside the browser." NFC chips are expected to become standard in smartphones and tablets in the next several years, enabling not only fast and easy processing of payments via mobile devices, but also enabling consumers to send digital information to and receive it from a wide variety of objects, from sales tags to dressing room mirrors.

But it's not just NFC—numerous mobile technologies that are just catching on now with the general populace will become status quo for marketers over the course of the next two to three years. Image recognition tools such as Google Goggles, mobile barcode readers, *augmented reality* browsers, motion-sensitive, large-format surface technologies, and in-car information systems are just a few of the opportunities that are limited in use now but will become increasingly commonplace in the near future. For marketers, now is the opportune time to become educated about the possibilities and to test and learn. However, given the relative newness of these technologies, understanding how any or all will apply to your business and customers is challenging. In the next chapter, we'll discuss how developing a solid strategic framework can help put these burgeoning opportunities into perspective and match them up to your goals and your customers' needs.

Key Mobile Activities

You've seen how accessing the Web is a key activity among smartphone users. As background for the chapters that lie ahead, we thought it was important to touch on a few other activities that will come into play as you try to market to your mobile audience.

Text Messaging

If there's one activity that nearly universal among mobile users, regardless of the kind of device they use, it is texting. As you can see in Table 1.3, InsightExpress found that 57.2 percent of all U.S. mobile users text at least once a week; among smartphone users, the rate is 74.4 percent (other studies show even higher figures when activity is measured on a monthly basis). For both feature phone and smartphone owners, texting is the number one activity. In fact, according to the semiannual survey by the U.S.-based international trade body CTIA–The Wireless Association (`www.ctia.org`), the number of text messages sent surpassed minutes of use (MOUs), a standard industry metric for talk time, on an annualized basis for the first time in 2011, officially making texting the primary mobile communication mechanism. We can expect the divide between MOUs and text messages sent to grow as talking continues to decline in importance in favor of texting and other post-device communication activities.

SMS Quick Facts

Some of the data around SMS is truly astounding. For example:

- The International Telecommunication Union (ITU) (`www.itu.int`), the United Nations body responsible for information and communication technology, found that worldwide, 192,192 text messages were sent *every second* in 2010, leading to a global total of 6.1 trillion texts (ITU, "The World in 2010").
- CTIA–The Wireless Association, the U.S.-based international trade body for the wireless industry, found that U.S. mobile users sent just over 2.3 trillion messages in 2011 (CTIA, "Semi-Annual Wireless Industry Survey," April 2012).
- Teens are by far the biggest texters, according to global market research firm Nielsen (`www.nielsen.com`). The following graphic shows that 13- to 17-year-olds send and receive well more than 10 times as many texts in a given month than mobile users over the age of 55.

Number of Text Messages Sent/Received Among US Mobile Users, by Age, Q3 2009-Q3 2011			
	Q3 2009	Q3 2010	Q3 2011
13-17	3,211	3,729	3,417
18-34	1,848	2,518	2,842
35-55	647	954	1,143
55+	99	173	231

Note: in the past 30 days; per mobile user
Source: Nielsen, "State of the Media: The Mobile Media Report," Dec 15, 2011

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Clearly, texting is an integral way that mobile users communicate, both in the United States and around the world. So, whether it's for advertising or customer support and loyalty, SMS should find a place in your marketing campaigns. It's not glamorous, but it is efficient and effective; and it continues to engage consumers. Think of it as a basic support mechanism for your other mobile efforts. We'll delve more into the basics of SMS in Chapter 3, "Week 2: Start Simple—SMS."

Social Networking

When it comes to communication on mobile devices, social networks are fast emerging as a vital platform, not only for peer-to-peer communication but for communication between consumers and brands as well. According to comScore, 36.9 percent of all mobile users (that includes those with feature phones as well as smartphones) accessed social networking sites in the three months culminating in June 2012. That figure has been steadily rising. eMarketer's estimates in Table 1.5 indicate that the number of mobile social network users will more than double in 2012 relative to 2010, and then increase by a further 43 percent by 2014, with the majority of the activity again coming from smartphone owners.

▶ **Table 1.5: U.S. mobile social network users, 2010–2014**

	2010	2011	2012	2013	2014
Mobile social network users (millions)	39.0	58.4	81.8	99.0	116.8
Smartphone social network users (millions)	32.5	55.9	78.1	94.9	112.6
—% of smartphone users	52.0%	60.0%	67.5%	69.0%	71.4%

Source: eMarketer, August 2012

Among tablet owners, social networking rivals web surfing and email as a leading activity, which suggests that larger-format screens are more conducive to a richer experience in this as in other mobile pursuits. See Figure 1.11.

Mobile Content Activities of Tablet Owners* in the US and Worldwide, Nov 2011
% of respondents

	US	Worldwide
Personal email	93%	87%
Surfing the internet for personal use	90%	90%
Social networking	66%	55%
Watching videos	63%	59%
Reading ebooks and emagazines	62%	58%
Listening to music	54%	54%
Gaming	51%	51%
Work email	43%	41%
Surfing the internet for work use	32%	38%
Create/edit files for personal use	30%	33%
Videoconferencing for personal use	29%	30%
Create/edit files for work use	26%	24%
Use other software for work purposes	15%	16%
Videoconferencing for work use	7%	11%

*Note: *internet users who have purchased electronic or print versions of books, magazines or newspapers in the past month*
Source: Boston Consulting Group (BCG), "Tablet and E-Reader Survey," Jan 23, 2012

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Figure 1.11 Tablets offer a richer experience for many activities.

As by far the world's largest social network, Facebook (www.facebook.com) absorbs the majority of mobile social networking time. But Twitter (www.twitter.com), which was modeled on the 140-character limit of text messaging, also generates a lot of traffic from mobile users. Twitter is heavily integrated into Android, iOS, and Windows Phone, which enables users to easily tweet from a variety of functions on these smartphones. Facebook enjoys a similar integration on these three platforms.

The key takeaway here lies in the changing nature of communication. As mobile users increasingly rely on platforms such as Facebook and Twitter to exchange messages, it has made communication on connected devices both more social and more public. The migration away from closed-loop voice calling to these more visible, web-based platforms gives marketers entrée to consumer interests and preferences in a way that one-to-one conversations could never permit.

Location is often closely tied to social networking because services such as Facebook and foursquare (www.foursquare.com) enable users to "check in" to places and share where they are with select contacts or broadcast it to everyone. You may recall that the emergence of foursquare at the beginning of 2010 sparked something of a

land rush in the geo-location space. Suddenly, everyone had check-in fever, it seemed. In fact, although basic mobile social networking—messaging, status updates, and the like—and use of location apps such as maps and directions are widespread and growing, use of geo-social services is still a niche activity. The data from the non-profit Pew Research Center's Internet & American Life Project (www.pewinternet.org) in Figure 1.12 makes this disparity pretty clear. Witness also the difference in scale between Facebook (955 million monthly active users [MAUs] as of the end of June 2012, including 543 million MAUs on mobile) and foursquare (just 20 million users as of April 2012, although growing at a rapid pace).

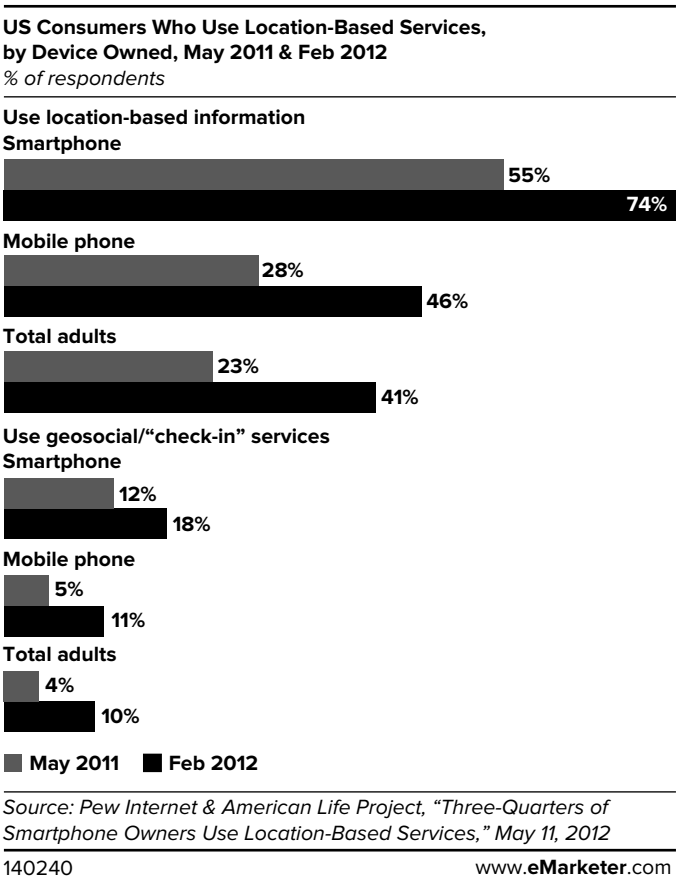


Figure 1.12 Use of geo-social services is still a niche activity.

Even though too many competing check-in services with too little in the way of consumer rewards inevitably resulted in check-in fatigue, marketers and consumers still find some value in services that use location parameters. However, the emphasis here has shifted from gaming dynamics to commerce, and you now see an increasing

emphasis on using location to drive actual business. In other words, there is more of a focus on the checkout, rather than the check-in.

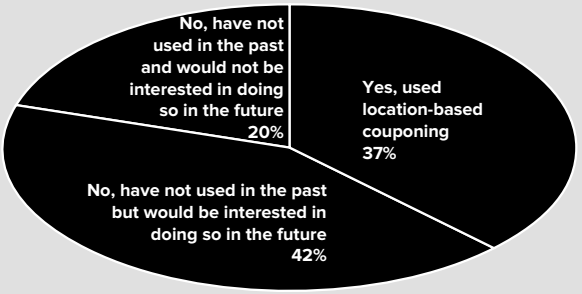
Says industry expert Greg Sterling, founding principal of Sterling Market Intelligence: "There are some unique opportunities coalescing around mobile, rewards, loyalty, and payments that are going to be very potent for marketers. It's going to be very interesting to watch." The data derived from location will be an important component in this mix.

Location is undeniably a vital characteristic for ads and promotions targeted at shoppers deep in the purchase funnel. The closer they are to purchase, the more important location becomes. Your best bet is to couple location with timing and context—that's the key to increasing your relevancy. We'll dig deeper into the nexus of social, mobile, and location in Chapter 7, "Week 6: Leverage the SoLoMo Nexus."

Tap into the Power of Location; Tread Carefully Around the Pitfalls of Privacy and Security

Mobile coupons, as we'll talk about in Chapter 8, "Week 7: Check Out M-Commerce," can play a key role in pushing shoppers down the purchase funnel and closer to checkout. Mobile offers allow you to deliver on the promise of timing, content, and location. As you can see in the following graphic, consumer interest in and usage of location-based coupons is high.

US Smartphone Users Who Have Used Location-Based Coupons, Sep 2011
% of total



Note: numbers may not add up to 100% due to rounding
Source: comScore Inc., "Handheld Shopping: How Mobile is Changing the Retail Environment," Dec 7, 2011

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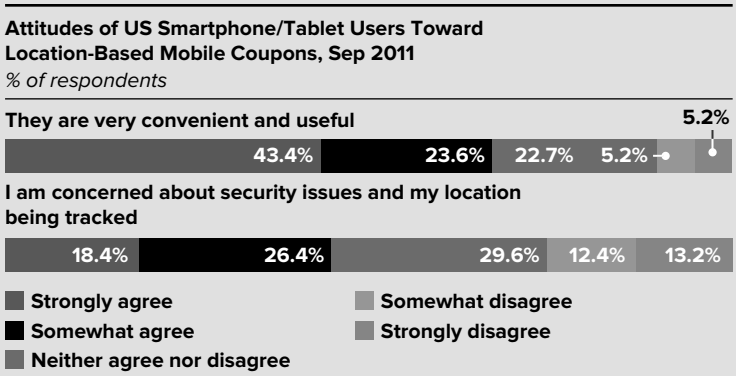
But consumers are also conflicted in their attitude toward mobile coupons with a location-based element (see following graphic). Mobile privacy and security are hot-button issues for consumers, who realize they carry a significant amount of sensitive information on their mobile devices.



On the one hand, the value proposition for mobile location-based coupons is clear to consumers. But at the same time, marketers and their technology partners must work to assuage fears that location tracking is too much of a trade-off for such convenience.

Search

So much of what we do on our mobile devices starts with a search. As on the desktop, mobile search is a key discovery mechanism for information about brands, products, and commerce opportunities. In Figure 1.10, note that mobile searchers prefer to use browsers rather than apps. That finding is borne out by a comScore survey showing mobile search to rank as the most popular type of site visited by smartphone users (see Figure 1.13). The same study found that 19.2 percent of smartphone users accessed search services using apps, ranking them a distant fifth behind weather, social networking, maps, and news.

Google is the dominant force in mobile search, more dominant even than on the desktop. Since StatCounter (`http://gs.statcounter.com/`) began tracking mobile search referrals, Google has consistently garnered over 90 percent of the total (sometimes as high as 98 percent). According to eMarketer estimates, Google garnered 95.4 percent of a total $1.3 billion in U.S. mobile search ad spending in 2012. Markets do shift, but a longtime near-monopoly is hard to beat, especially when Android's growing dominance in the smartphone space continues to fill Google's coffers.

A new wrinkle in the search field comes from the rise of voice assistants such as Apple's Siri, unveiled with the iPhone 4S in October 2011. Siri allows users to search the Web in addition to searching and activating a limited array of phone apps, such as

Types of Sites/Services Accessed via Mobile Browser Among US Smartphone Users, Dec 2011	
% of smartphone users	
Search	45.8%
Social networking	36.0%
News	34.3%
Weather	25.9%
Movie information	18.7%
Maps	18.2%
Restaurant information	16.6%
Online retail	15.7%
Shopping guides	11.5%
Credit cards	11.3%
Traffic reports	10.4%
Health information	10.0%
Kids and family entertainment	8.1%
Beauty/fashion/style	7.9%
Travel service	7.1%
Automotive services	5.0%
Insurance services	4.3%

Note: 3-month average
Source: comScore Inc., "The State of Consumer Online Travel," March 5, 2012

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Figure 1.13 As on the desktop, many mobile browsing sessions start with search.

reading and responding to text messages or reading a day's calendar schedule. (Google and Microsoft are said to be readying competing versions for future upgrades to their operating systems.) Siri uses the iPhone's default search engine to assemble results, but in so doing, it often bypasses the search results pages (SERPs), which could have implications for how you optimize for mobile search for maximum visibility. We'll get into the search engine optimization (SEO) and media buying steps you need to take to make your site visible in search results in Chapter 4.

Shopping

Consumers have been using the Web for a long time now to conduct research that leads to in-store, offline sales. In the desktop scenario, these activities typically take place sequentially and can often be separated by days or even weeks (see Figure 1.14).

The major change wrought by the growing ubiquity of smartphones is that research and shopping can now take place simultaneously (see Figure 1.15). Mobile consumers are often in the act of shopping, typically trying to satisfy an urgent product need. Thus, the connection between research and purchase is much closer.

Figure 1.14 Desktop Research-to-Purchase Path

Many smartphone owners preshop on their devices to determine whether a trip to a retail location is worth their time. The calculus changes again once consumers are closer to the point of sale, with mobile in-store shoppers often researching while standing in front of a product they're considering, thereby presenting marketers with the opportunity to influence a person who is ready to buy.

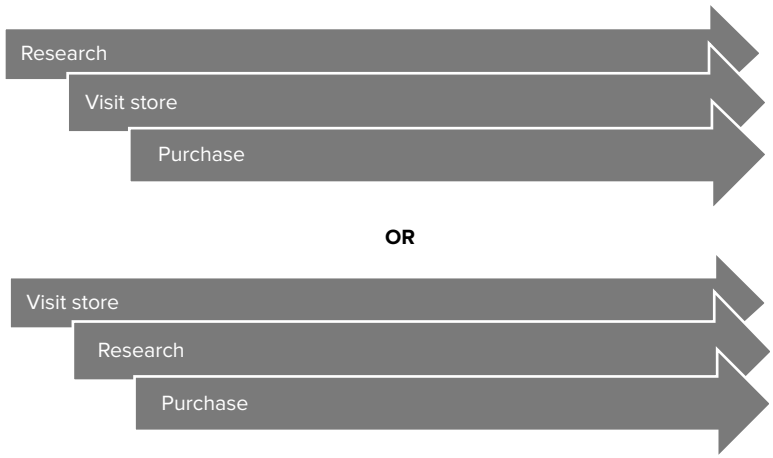


Figure 1.15 Mobile In-Store Research-to-Purchase Path

Gathering information that will help determine a purchase drives much of mobile shoppers' activity. Search engines are the gateway to critical data that can influence purchase decisions, such as store locations, product reviews, in-store product

availability, local deals, and, above all, price comparisons. And as you've no doubt gathered, social media plays a supporting role in this process, not only by linking location to commerce but also in obtaining feedback and opinions about a brand or product from one's social graph.

Of course, all this information gathering places new pressure on merchants and brings the term *showrooming* (the practice of researching a product in a store, then buying it elsewhere—online, by phone, or from another brick-and-mortar business) into the retail lexicon. In the face of better-informed, more price-conscious shoppers, retailers are understandably nervous. But some are coming up with creative solutions to incentivize shoppers to stay put. Nordstrom, for example, has tried perks such as free shipping on in-store purchases, while Target has explored offering more items made exclusively for the retailer, which would make comparison shopping more difficult.

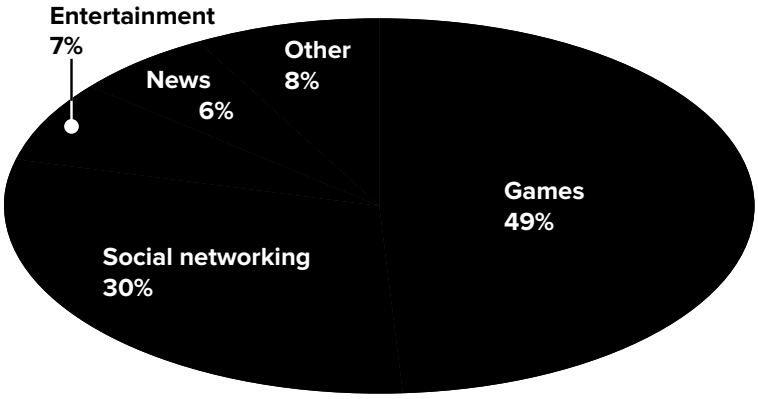
"The landscape is a lot more complicated from a marketing and consumer-retention standpoint," observes Greg. Now you have to engage the consumer at multiple touchpoints, including mobile, and that mobile engagement may even take place in the store." He adds, "You also have the real-world problem of how to confront consumers who have all this information and who are disposed to buy from Amazon right in your store."

The bottom line is that we are part of a new generation of data-driven shoppers. So, remember that in-store shoppers have heightened information needs, which gives the data—and service—you provide a higher value and makes it more actionable. A survey of U.S. smartphone owners by digital marketing agency White Horse (`www.whitehorse.com`), for example, asked respondents to rank, on a scale of 1 to 5, the usefulness of different information in helping make them an in-store purchase decision. Price comparison scored the highest, at 4.32, demonstrating that the ability to save money can actually help consumers spend it.

Entertainment

Beyond surfing, searching, socializing, and shopping, media consumption and entertainment rank high among mobile users' preferred activities. Playing games, listening to music, and, increasingly, watching videos occupy a lot of mobile users' time and attention. In fact, data from mobile app analytics platform Flurry (`www.flurry.com`) (see Figure 1.16) suggests that nearly one-half of smartphone users' app time goes to gaming.

Time Spent with Mobile Apps in the US, by Category, Dec 2011
% of total



Source: Flurry Analytics as cited in company blog, Jan 9, 2012

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Figure 1.16 Game apps are a big draw for smartphone users.

If you refer back to Table 1.3, you'll see that about one-quarter of all mobile users play games at least weekly, while smartphone owners are more active, consuming games at roughly twice the rate. Listening to music and watching video yield a similar ratio, although neither activity is as popular as gaming. All of these media consumption activities are more prevalent among iPhone owners, according to InsightExpress (see Table 1.6).

▶ **Table 1.6** Activities of smartphone owners, by platform, January 2012 (Respondents who use the device at least once a week)

Device	Android	BlackBerry	iPhone
Send/receive text messages	77.7%	80.3%	80.9%
Use the Internet to visit websites	65.2%	65.6%	71.8%
Take pictures with the camera in your phone	51.3%	55.7%	60.0%
Use mobile applications—for example, maps	46.9%	54.1%	53.6%
Use an app store on your phone	39.3%	42.6%	47.3%
Play mobile games	51.8%	44.3%	57.3%
Manage your calendar/schedule on mobile phone	40.2%	55.7%	44.5%
Listen to streaming music (e.g., Pandora, Spotify)	33.5%	27.9%	43.6%
Listen to music purchased on your phone (e.g., iTunes, Amazon)	20.5%	36.1%	46.4%

Listen to music burned from a CD	15.6%	26.2%	22.7%
Watch videos on your mobile phone	32.1%	31.1%	39.1%
Send/receive email	67.4%	70.5%	71.8%
Send a picture to someone from your mobile phone	38.4%	47.5%	49.1%
Check in using something like foursquare, Gowalla, or Loopt	8.5%	16.4%	13.6%
Update a social networking site like Facebook or Twitter	51.8%	45.9%	50.0%
Redeem or download a coupon	8.9%	14.8%	10.9%
Read an e-book	12.9%	19.7%	10.9%
Take videos on your phone	26.8%	31.1%	22.7%
Check the weather	58.5%	72.1%	64.5%
Scan a 2D or QR code	12.9%	13.1%	10.9%
Scan a regular barcode (UPC/product barcode)	10.7%	9.8%	19.1%
Use an augmented reality application	5.8%	4.9%	7.3%
Pay for something at a store using your mobile phone (e.g., waving your phone over a payment system)	6.7%	13.1%	7.3%
Make a purchase of something that you can have shipped to you or pick up in a store	9.8%	21.3%	7.3%
Monitor your health (e.g., keep track of your weight/diet, blood sugar, blood pressure, or other health-related things)	6.3%	16.4%	11.8%
Search for information on a product or company in which you're interested	24.1%	37.7%	28.2%
Search for deals or special offers located near you	19.6%	21.3%	26.4%
Do a price comparison	17.4%	23.0%	17.3%
Use a bookmarking/content reader (e.g., Instapaper)	8.0%	13.1%	7.3%
	N=224	N=61	N=110

Source: InsightExpress, January 2012

Among tablet owners, media consumption is even more commonplace, which is not surprising given that tablets are purpose-built for these activities (see Figure 1.11). Cisco Systems (www.cisco.com), which manufactures much of the infrastructure that routes Internet data, predicts a massive, tenfold explosion in mobile video traffic in the next five years, as shown in Figure 1.17. The combination of smarter devices (especially media tablets), faster mobile networks, and greater content availability will drive this growth.

Monthly Mobile Data Traffic Worldwide, by Application, 2011-2016
terabytes

	2011	2012	2013	2014	2015	2016
Video	307,869	736,792	1,545,713	2,917,659	4,882,198	7,615,443
Data	174,942	329,841	549,559	864,122	1,349,825	2,165,174
File sharing	76,764	114,503	154,601	204,617	261,235	361,559
M2M	23,009	47,144	92,150	172,719	302,279	508,022
Gaming	6,957	13,831	24,388	40,644	77,568	118,330
VoIP	7,724	10,327	12,491	15,485	22,976	35,792
Total	**597,266**	**1,252,438**	**2,378,903**	**4,215,246**	**6,896,080**	**10,804,321**

Source: Cisco Systems, "Cisco Visual Networking Index (VNI): Global Mobile Data Traffic Forecast Update, 2011-2016," Feb 14, 2012

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Figure 1.17 Mobile data consumption is exploding.

By this point, you should be familiar with the implications: More consumers who own more smart devices and consume more media ultimately yield more potential touchpoints. As more content migrates to digital and mobile platforms, marketing opportunities are expanding not only as the audience grows, but also as more publishers diversify their funding from paid to ad-supported content in response. This affects the type of apps you build, as we'll discuss in Chapter 5, as well as where you place your mobile ads, as we'll talk about in Chapter 6.

As Joy put it: "It's back to the age-old issue of breaking through the clutter and niche marketing. With more content, more apps, and more distractions, it will become increasingly difficult to have a simple, flat strategy that works for all executions. You can call it targeting moments or something else, but it won't just be about media plans anymore."

How Mobile Is Changing the Face of . . . Everything

Now you have a sense of the mobile landscape. From here, it's easy to envision how radically mobile is changing the way we do business. The implications are significant. Says Greg: "The most apparent change is marketers now must face a multiscreen reality, including tablets, and confront people using and moving between devices. I don't want to call it the Wild West, but there's a lot of uncertainty." Greg is right, but it's also the case that one company's uncertainty is another's opportunity.

Retail and Consumer Packaged Goods

For a look at how mobile is changing retail and consumer packaged goods (CPG), look no farther than Apple itself. The company's phenomenally successful chain of retail

stores has done away with the traditional checkout experience by enabling shoppers to buy their products anywhere in the store. Apple associates circulate with specially equipped iPhones that incorporate a credit card reader. More recently, Apple updated its own Apple Store app for the iPhone, giving visitors the ability to scan barcodes on their own and pay using the credit card information stored in their iTunes account. Think about it: No more waiting in line, no unnecessary floor space devoted to expensive cash registers, a totally fluid—well, totally mobile—shopping experience.

As advanced devices become more readily available and marketers and real-life objects become increasingly digitized, the possibilities expand exponentially. Today, you might scan a *quick response (QR) code* to unlock enhanced product information or tap into competitive pricing. Tomorrow, you may simply swipe your NFC-enabled handset over a product on the shelf to see useful data such as customer reviews. Think about the possibilities inherent in scanning a price tag on an item of clothing to see if it's in stock in your size or another color. Imagine standing in front of a digitally connected, floor-to-ceiling fitting room mirror and dressing yourself virtually, swiping to "try on" new outfits and tapping to share a look with your social networks. It may sound like science fiction, but it's all soon going to be part of our reality.

Automotive

Automotive brands were some of the earliest adaptors of mobile technology, including on the marketing side. Many were among the first to develop touch-enabled, smartphone-friendly websites and were early investors in mobile advertising to capture shoppers across the purchase process. Thanks to their future-forward approach, your experience buying, driving, and owning a new car in the years to come will be very different indeed.

The average new car shopper will arrive on the lot well-armed with tools that will help her narrow down her options and customize the vehicle of her choice, before even speaking to a sales representative. Checking availability, adding options, and securing financing will all be easily done via smartphone or tablet, leaving the consumer able to shop at her own pace and freeing up dealership staff to concentrate on finalizing sales.

Rolling off the lot in one's new car will also be a new experience, with owner's manuals delivered via tablet app, and service reminders delivered via SMS. At the end of 2010, Hyundai showed the way by shipping its new flagship sedan, the Equus, with an iPad containing the owner's manual and an app for scheduling service appointments, concierge-style. Hyundai dealers collect the car at the owner's convenience, with no visit to the dealership required.

But *driving* is the experience that will change most of all. The evolution of the connected car is just beginning, with all major automotive brands planning for or already including some form of digital connectivity into their vehicles. Web-enabled

dashboards providing GPS and the ability to synch your mobile device to your car's stereo system via *Bluetooth* are just the beginning. Voice-enabled search, contextual advertising/offers, and open developer platforms for in-car apps are just around the corner; and more sophisticated options like augmented reality windows are not far behind.

Expect this vertical to move faster than the rest. In the not-so-distant future, looking at your portable GPS unit or manufacturer-installed navigation system on a family road trip may seem the old-school equivalent of consulting the road atlas today. You'll be more likely to follow visual directions projected transparently onto your windshield while your passengers view facts and stories about passing landmarks.

Financial Services

Financial institutions have long positioned mobile banking as an extension of their online services, emphasizing the anywhere, anytime convenience of checking account balances, paying bills, and transferring funds using the one device customers take with them everywhere. Banks have found mobile customers to be some of their best customers: they tend to use more banking products, keep more money in their accounts, and display deeper loyalty to their institution of choice. Plus, because mobile transactions cost less than those that take place in a branch or via call centers, mobile customers save banks money to boot.

But paying a utility bill or moving money from a savings to a checking account seems rather staid in comparison to what lies on the near-term horizon for the financial services sector. Consider that we're currently able to research products, reach out to friends and family on Facebook or Twitter to get advice on a prospective purchase, retrieve coupons by scanning a barcode in-store, and redeem that coupon at the point of sale—all using our mobile devices. So it seems logical that we should be able to finish the process on our mobile devices as well by using them to pay for our purchases. Instead of trying to pull out your wallet or rummaging through your purse to find it, wouldn't it be cool if your phone *were* your wallet? If a host of technology companies and financial institutions have their way, that's where we're headed. The mobile wallet emerged in 2011 as one of the hottest and most closely contested areas of innovation in the financial services sector, with banks, credit card companies, payment processors, retail chains, and mobile carriers all rushing to bring competing services to market.

And certainly, the potential here is huge. In 2009 in the United States alone, consumers spent over $3 trillion on some 60 billion credit and debit card transactions, according to the Federal Reserve. Even if a small percentage of these transactions moved from plastic to mobile, it would be an unprecedented financial and marketing opportunity for whichever companies facilitate those transactions. Worldwide, the totals would be commensurately larger. In fact, outside of the United States, particularly in less-developed countries with significant mobile penetration but large unbanked populations, mobile payments have already seen significant adoption. In Kenya, for example,

Safaricom's M-PESA mobile money transfer service is widely credited for creating a banking infrastructure for the country's large unbanked population. Other services across the developing world have sprung up in the wake of M-PESA's success.

In other ways, your smartphone is also poised to be become your bank. In 2009, United Services Automobile Association (USAA, an insurance, banking, and investment institution that has one physical branch, in San Antonio, Texas) has long relied on self-service channels. USAA pioneered remote deposit capture (RDC), which allows customers to deposit a check by capturing an image and sending it to the bank. Chase and others soon followed suit. RDC alone may only serve a niche market, but in conjunction with other mobile banking and payment trends, it heralds a future of largely branchless banking. Down the road, we may no longer be asked, "What's in your wallet?" Instead, the question will be: "What *is* your wallet?"

Travel and Hospitality

Consumer reliance on mobile has sparked a profound change in the way brands relate to their customers. Now there's tremendous pressure to quickly adapt to a world where marketing must be far more personal and contextual to achieve success. Nowhere is this more evident than in the travel and hospitality sector. Travelers, and business travelers in particular, are highly dependent on their mobile phones and tablets, and adroit travel and hospitality (T&H) brands are using these devices to provide better service and forge deeper relationships with their customers. A smartphone-enabled website with basic booking functionality and loyalty program management are now table stakes for any hotel, resort, airline, or car rental brand. Being unusable for—or worse, inaccessible to—potential customers on their device of choice is unthinkable in a world where many booking decisions happen on the fly.

Many brands are also upping the ante with additional tools and content that enhance the customer experience. Expect to see the basic look-and-book functionality of the average hotel website expand to accommodate actually managing your stay and enabling you to customize everything from the contents of your minibar to the temperature of your room when you arrive, all via mobile. Similarly, expect the contents of sites and apps to morph on the fly according to where you are at any given time, offering you the best of what your current location has to offer.

Most of all, expect the experience of navigating—e.g., to a hotel or an airport—itself to change drastically, with apps and surface screens designed to help you find your way, plan meetings and activities, network with other guests, pay for incidentals, and even lock and unlock your room or rental car—all via your personal device. By decreasing the need for human interaction, these technical advances will actually enable T&H brands to engage more effectively with guests. Decreased reliance on people for these minutiae will support cost avoidance through self-service and create myriad opportunities for upselling, cross-selling, and building loyalty. Staff will be

freed up to provide the elements of customer service that are more personal and pressing, requiring a human touch. The opportunity these mobile technologies present for return on investment (ROI) based on retention may well equal the ROI of acquisition. Brands that learn to utilize them now are making a sound investment in the future.

Pharma and Healthcare

If there's any industry that needs to be on the cutting edge of information delivery, it's the medical establishment. Yet big pharmaceutical companies and hospitals haven't always been the most adventurous adaptors of digital media. Mobile appears to be changing all of that, and rather quickly. It's now common to see your family physician enter the exam room with your medical history neatly recorded on tablet—something that would have been unthinkable until very recently. As fears about the security of digital information have eroded, not only doctors but nurses, administrators, and pharmaceutical reps increasingly rely on mobile devices as they juggle ever-growing amounts of data. Expect big pharma to add mobile devices, apps, and service delivery to their roster of offerings in response to the burgeoning opportunities in the newly dynamic mobile health (often referred to as mhealth) sector.

For consumers, tablets and smartphones now play a key role in managing and improving their own health with apps like charting diet, tracking pregnancy, managing chronic conditions, and improving physical performance. This area is of special interest to watch as mobile connectivity integrates with wearable technology like the Fitbit (`www.fitbit.com`) and Nike+ FuelBand (`http://nikeplus.nike.com/plus/products/fuelband`) and, eventually, migrates from tablets and smartphones altogether into self-contained, digitally enabled clothing and accessories.

Publishing and Entertainment

As we referenced at the beginning of this chapter, in many areas of the world, a mobile device will provide most people with their first—and only—connection to the Web. But the impact of the mobile-first experience goes far deeper. In highly wired societies like the United States and Western Europe, entire generations are growing up thinking the world is a touchscreen surface. Toddlers are learning their ABCs via iPad, and it's not uncommon to see the average three-year-old flummoxed when the family TV doesn't respond when swiped by hand.

In coming years, students' backpacks will be that much lighter as textbooks migrate to e-readers and tablet apps, a trend that is drastically shaking up the way print industry giants look at their business. For the current and future wave of kids growing up mobile—the pinch and zoom generations—a monthly print publication is likely to be as quaint, albeit collectible, as a vinyl record. The rapid experimentation we now see with newspapers, magazines, and books moving to mobile is just the beginning. As with most media revolutions, the publishers are migrating their content to

these new platforms as is, but it won't be long before the platform begins to influence the content itself. It's arguable that the idea of what a page is may become something very different when we're no longer confined to a static piece of paper.

Likewise, we're already seeing the drastic waves of change mobile has wrought in the entertainment world. We're surfing and shopping via tablet as we watch TV, not to mention tweeting with other viewers and checking in to our favorite shows. A QR code and/or text opt-in has become a de facto feature of your average coming-attraction poster, and it's a given that TV channels and upcoming film releases have smartphone sites and videos viewable via mobile.

Moreover—and more complicated—is the fact that many of us are turning away from traditional TV and movie screens altogether and getting our entertainment content from the Web via our smart devices. This is especially true in mobile-first developing markets, where services like Vuclip (`www.vuclip.com`) index and optimize web-based video content for efficient replay on mobile devices. Much of that content isn't even coming from studios and big media providers but *from other consumers*. A case in point: YouTube mobile has consistently ranked among the most popular mobile websites since its launch in 2007. However, even YouTube is moving more in the direction of professional content, following the lead of many over-the-top (OTT) players, such as Netflix and Hulu+, which use a home broadband connection to stream video content to the TV but bypass traditional pay-TV subscriptions—and professional content almost always involves a fee.

What's interesting is that, as consumers, we are warming to the notion that content isn't always free and that giving something in exchange, whether money or data, is more acceptable than we thought. Witness the success of Apple's iTunes and subsequently its App Store and the myriad imitators they have wrought. There is value in professionally produced content; the trick is finding the right balance of free and fee.

In Conclusion

What more can we say but that mobile is changing media and it's changing us—how we work, play, shop, bank, and share—in essence, how we live life. The playing field is no longer the same, and it's still changing almost every day. Although we can't see around the corner, we can help you capitalize on what's happening now and prepare you to be as nimble as possible to take advantage of mobile as it evolves.

Woody Allen famously said, "90 percent of life is showing up." We believe that the same holds true for succeeding in mobile—provided you're well prepared. In the next chapter, we'll discuss how to develop a strategic framework and an approach that will enable you to be ready to get the most from the rapidly changing mobile landscape.