

Chapter 1

Understanding Location-Based Services

In This Chapter

- ▶ Understanding what makes people check in
 - ▶ Tapping into other social networks to spread the word
 - ▶ Understanding the components of location-based networks
 - ▶ The importance of privacy when using LBS
-

If you're reading this book, there is at least a 50 percent chance that you've heard of a company called foursquare. If not, we're almost certain you've heard of a service called Yelp. No? Well, we know that you absolutely, positively have heard of a little company in Silicon Valley called Facebook. You have? Okay, good. You've come to the right place.

What do these three companies have in common? They all provide some form of a *location-based service* (LBS), a service that uses the geographical position of a mobile device. These services can be fun or for serious business (or both). In this book, we focus on the business side — how to use these location-based services for marketing your business.

According to comScore, 7.1 percent of all online U.S. adults accessed check-in services like Facebook Places and foursquare in March of 2011. This number has grown to 7.1 percent over the past year for a couple of major reasons: Facebook's leap into the LBS space with Places and an increased commitment by businesses to step up offers and value add. Something worth noting (as shown in Figure 1-1) is that over the last 18 months, the base of location-based services users has begun to skew slightly to female.

According to a number of sources, over the next couple of years, the adoption of smartphones is anticipated to grow more than 50 percent, resulting in dramatic increases of location-based services usage. As a result of the rich data, engagement, and loyalty that LBSs facilitate, more and more businesses are adopting these technologies.

The genesis of the location-based service

Some of the earlier LBS pioneering can be attributed to programs like the infrared Active Badge system (1989–1993), Microsoft's Wi-Fi-based indoor location system RADAR (2000), the MIT Cricket project using ultrasound location (2000), and the Intel Place Lab with wide-area location (2003). However, the first LBS to gain any kind of critical mass was Dodgeball (now

foursquare), founded by NYU students Dennis Crowley and Alex Rainert in 2000 and then later acquired by Google in 2005. Dodgeball was later spun off by Google and ultimately reincorporated as the current foursquare. Loopt was the next big LBS to come on the scene in 2005, followed by Brightkite in 2007.

Figure 1-1:
comScore's
demo-
graphics of
U.S. adult
mobile
users who
accessed
check-in
services
in March,
2011.

Demographic Profile of US Smartphone vs. Total Mobile Phone Users Who Are Check-In Service* Users, March 2011			
% of respondents	% of total mobile users	% of smartphone users	% of check-in service users
Gender			
Male	48.0%	53.9%	49.2%
Female	52.0%	46.1%	50.8%
Age			
13-17	7.1%	6.0%	8.3%
18-24	12.5%	17.5%	26.0%
25-34	17.6%	27.3%	32.5%
35-44	16.8%	21.8%	18.7%
45-54	17.8%	15.0%	9.7%
55-64	14.1%	7.8%	3.0%
65+	14.0%	4.7%	1.7%
Employment			
Full time	38.9%	53.3%	44.6%
Part time	10.5%	9.0%	10.2%
Not employed but not retired	15.1%	12.5%	13.5%
Full-time student	14.6%	16.7%	23.3%
Retired or other	20.9%	8.3%	6.3%

Note: numbers may not add up to 100% due to rounding; three-month average for period ending March 2011; *e.g., Facebook Places, foursquare and Gowalla
Source: comScore MobileLens as cited in press release, May 12, 2011
127842 www.eMarketer.com

Courtesy of eMarketer, Inc.

Defining a Check-in: The Ultimate Goal

Check-ins are at the center of location-based marketing. You get someone to check in to your location and give them a reason to spend money with you.

Similar to checking in to a hotel or flight, a *check-in* is a declaration that "I am here." Check-ins are interesting because they also give you a way track who is at your location at a given point in time.

There are two kinds of check-ins:

- ✓ **Active:** A person physically pushes a button on his phone or device to check in.
- ✓ **Passive:** A person's device or an action (such as swiping a loyalty card) checks him in without him having to do anything.

With the active check-in, which is more common in location-based services, you're asking your customers to use their valuable time to perform a small task, which we outline next. And then we tell you about the types of information you might collect from these check-ins.

Additional check-in definitions

We asked members of the senior teams of several leading location-based providers to define the term. Here are some check-in definitions from leaders in the space:

A check-in is a digital record that a person visited a specific named place in the real world at a specific time. It has a couple of very interesting properties. First, it's far more valuable than just location because it gives the context of "place" — is the person at the Outback Restaurant or the pharmacy next door? And place is subject to analysis: "people who go to place X also go to place Y," or "this person frequents this place or these kinds of places." From a business perspective, place enables the development of programs (loyalty/rewards, games) tied to specific businesses. Another key property is that check-ins happen in real time — they communicate "I'm here right now." That opens opportunities for social connection in the moment.

Jeff Holden, CEO of Peigo, Makers of Whrrl (now part of Groupon)

A check-in, broadly speaking, is a way to share your location — and more broadly what you're doing at that location — with your friends. In many ways, a check-in is a standardized greeting in a conversation about what's going on at a place. It provides a structured framework for the conversation, but the interesting part is the content that comes after the 'hello.'

Seth Priebatsch, Chief Ninja, SCVNGR

We think of a check-in as a way for users to opt-in and share their locations with friends or other applications and services. At foursquare, we also use check-in data to help surface interesting content, such as nearby friends' recommendations for things to do or places to visit, and special offers from retailers. We see the check-in as the atomic unit in creating technology that facilitates serendipity.

Dennis Crowley, cofounder and CEO of foursquare

Checking in is the match that lights the fire. It's the social declaration of "I'm here!" that opens the door to seeing the world around you through a new set of eyes: Who is here? What can I do nearby? What secrets are there to learn here? It's not the end. It's only the beginning.

Josh Williams, CEO of Gowalla

Check-in is a way to indicate your location at a particular place, and, if the check-in is public, share it with your friends. In its simplest form, it's a status update, indicating where someone is at a particular time.

Nataly Kogan, Vice President, Director of Consumer Experience for WHERE

Understanding check-in behavior

To be successful with location-based marketing, you have to understand what you’re asking customers to do when they check in. Here are the general steps participants go through to check in to your location:

1. Take out a phone when they enter your location.
2. Open an application from a location-based service.
3. Search through a list of places that are nearby the current location as defined by the phone’s GPS.
4. Select a place (or search if the place they’re at is not on the list).
5. Touch a Check-in button.
6. (Optional) Share the fact that they just checked in with other social networks.
7. (Optional) See what happens after they check in — maybe a friend is in the same location.
8. (Optional) Add tips, recommendations, photos, or additional content to the check-in.

Not a lot of people are going to want to do this much work or look as if they’re doing something strange. You have to be able to overcome that obstacle by making your location-based campaigns easy to use. People are willing to do almost anything if they see the value in it and it’s easy to do.



Make your check-ins as passive as possible. Technology exists that allows someone to check in to a service by merely walking into your store or scanning a barcode with a phone.

The anatomy of a check-in

So what does a check-in look like? Figure 1-2 shows what a typical check-in looks like on foursquare, one of the richest and most-used location-based services.

Each service is a bit different in what it provides and the features it offers. But in general, here’s what you find in a check-in:

- ✓ **The person who currently has the most check-ins:** See who the person is that checks in to the location you’re checking in to most frequently. That person probably knows a few tips and tricks about the business. (foursquare calls this person the mayor, as shown in Figure 1-2.)

- ✓ **Friends:** If any of your friends are checked in to the venue, their pictures will appear under the mayor.
- ✓ **Location:** The address appears under the venue name. At the bottom of the screen (not visible), click a link for additional information to see phone numbers, Twitter handles, and directions.
- ✓ **Tips:** If other users (or you) have added tips or comments about the venue, click a link to access all of them.
- ✓ **Photos:** Similar to tips, you can also see whether any photos have been uploaded to the venue you checked in to.

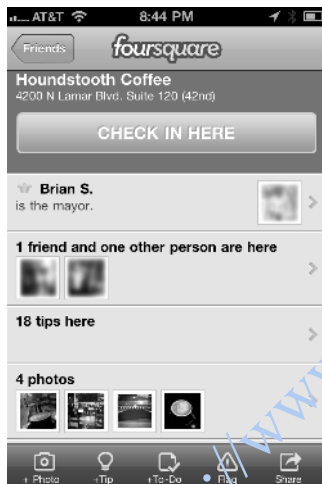


Figure 1-2:
A
foursquare
check-in.

— The current leader

— Friends who are in the same location

— Tips for the location

— Photos for the location

Understanding the Key Factors of LBS

When you start with location-based marketing, it's critical to understand two of the underlying forces driving its evolution and development. In particular, mobile technology and social networking play a critical role in shaping what's possible for location-based marketing.

Mobile technology

Mobile technology has played a tremendous role in the adoption of LBS. In particular, the FCC mandate that GPS technology has to be included with cell-phones unlocked the ability for geo-awareness. GPS combined with the mass adoption of *smartphones* (phones that have functionality beyond just making phone calls and sending text messages) is driving increased adoption of LBS, particularly among influential, affluent males.

Until a few years ago, there were primarily six different mobile operating systems:

- ✔ **Symbian:** Standard operating system for a large majority of the world’s smartphones (including Nokia).
- ✔ **BlackBerry:** The device and operating system of choice for most large enterprises, the BlackBerry OS from Research in Motion was one of the most popular operating system in the United States until a few years ago.
- ✔ **Windows Mobile:** Available on a variety of devices from a variety of wireless operators.
- ✔ **Palm OS:** Launched in 1996, the Palm OS platform has provided mobile devices with essential business tools as well as the capability to access the Internet.
- ✔ **Mobile Linux:** Linux is seen as a suitable option for higher-end phones with powerful processors and larger amounts of memory.
- ✔ **MXI:** A universal mobile operating system that allows existing full-fledged desktop and mobile applications written for Windows, Linux, Java, and Palm enabled immediately on mobile devices without any redevelopment.

Now add to this list the likes of iOS (Apple devices like iPhone and iPad), Android, Nokia’s Ovi, and Palm’s newer webOS, and you have a lot of different platforms to support. Fortunately, three of the operating systems — iOS, Android, and Symbian — make up the lion’s share of the market. In your case, it’s probably easier to think about types of devices and not worry as much about platform because there are three major categories of devices on the market today:

- ✔ **Smartphones:** These mainly comprise phones made by Nokia (including the C7 and 6303Xx), Apple (iPhone), HTC (Thunderbolt), Motorola (Droid), and Research In Motion (BlackBerry).
- ✔ **Tablets:** At this point, there are really too many to list, but Apple created this market with its iPad. Dell, HP, and a number of other PC manufacturers have created offerings in this category as well.
- ✔ **Laptops, notebooks, and netbooks:** This is a relatively new category and is pushing out an earlier category known as personal digital assistants (PDAs). Palm owned this market early on but ultimately lost this footrace to the likes of today’s smartphone giants Nokia, Apple, Samsung, RIM, and HTC.

To illustrate the point of how the user interface for a venue on a single LBS can change across different devices, Figure 1-3 shows how the same venue on

the same LBS (Yelp) looks on three different devices. At the top of Figure 1-3 is the web version of a local Starbucks's Yelp entry. The bottom-left image in Figure 1-3 shows the same venue in Yelp on an iPad, which shows a much different view. The bottom right of Figure 1-3 shows an even more scaled-down view of the entry, as it appears on an iPhone.

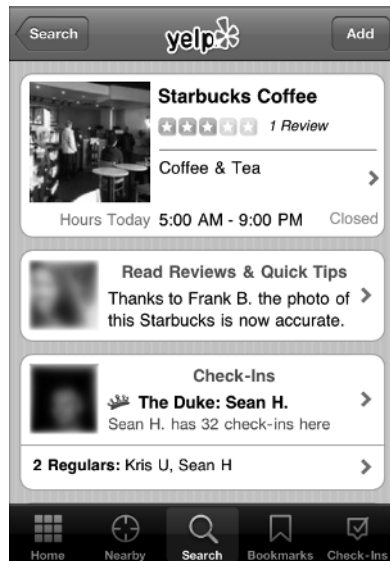


Figure 1-3:
An LBS page on a MacBook Pro, iPad, and iPhone, respectively.



All your customers will experience your venue differently across their various mobile devices. This does not mean that you have to go out and buy one of every device on the market, but it doesn't hurt to at least have an idea of what your venue(s) look like on PC versus Mac versus smartphone versus tablet.

One last point: If you have a tech-savvy customer base that's spread across numerous mobile platforms and devices, this may play a role in your LBS platform decision.

Digital platforms and media

One of the things that will only become more prevalent over the next couple of years is *geotargeting* (or serving up messages and offers based on location) as a part of advertising. For example, adding location to services such as DART for Publishers (an online ad-serving system now owned by Google). One thing that you can start thinking about as you test location-based services is how you could use your LBS or recommendation engines like WHERE (or even Twitter) to start to serve more relevant ads to your customers.

What's really exciting about the promise of geotargeted advertising is that this comes with the advantage of *day-parting* (serving up time-sensitive ads, such as lunch ads around noon) and demographic targeting. Most important is that your customers, or prospective customers, will actually have a way to act on these targeted ads via an LBS.

Social networking

Another part of the equation that will continue to drive the adoption of LBS is the increased popularity of social networks such as Facebook and Twitter. With Facebook accounting for one out of every four page views on the web in the United States, people are spending a lot of time networking. Part of what makes social experiences richer with friends and family is not just knowing “what” they're doing but “where” they're doing it. Location-based services go a long way toward facilitating the “where.”

From a personal perspective, many people using location-based services today do so because of the gaming factor — earning badges and winning prizes. Others do so to gain social credibility by letting their friends know that they're at a concert, cool bar, or trendy restaurant.

Looking at the power of social networking from a business perspective, they're equally if not more so motivated to have their customers not only checking in to their physical locations, but also sharing these check-ins with their social networks.

The force that drives social networking is the social graph. A *social graph* consists of everyone that someone is connected to online: friends, family, former classmates, co-workers, and neighbors. Services like Facebook and Twitter keep this collection of connections centralized and accessible by other applications. When a user creates a social graph, other applications such as Gowalla or Yelp can grab that social graph, and that information can be easily shared across more networks.

Physical locations

The four walls and the space within them will start to become more important in the world of location-based marketing. Right now, a majority of LBS providers rely on GPS to allow customers to check in to a venue. Only shopkick — a company that powers LBS programs for the likes of Simon Malls, Sports Authority, Target, and Best Buy, among many others — requires retail stores to install physical hardware in their store that will passively check in customers if they have the shopkick application open on their smartphone.

In addition to passive check-ins relying on physical in-store hardware, you will also start to see more LBS and businesses using *geofencing*, which is isolating a particular location for privacy reasons. But as more companies adopt LBS and offer richer offers to incentivize customers to check in, concerns around “gaming the system” will grow. To combat this problem, geofencing allows tighter controls over ensuring that a customer is physically in your venue (or at least within a 20-yard perimeter).

As Wi-Fi, 3G and 4G, LTE, WiMax microwaves, and other forms of delivering connectivity to mobile devices become more pervasive with an ability to cover longer distances, this will create a need for LBS to create enough elasticity around its check-in rules. For example, someone can go from a Wi-Fi network (which can sometimes interfere with GPS) to a 3G or 4G network, and then pick up public Wi-Fi networks. Location-based providers have to understand these patterns and not penalize customers if a local coffee shop’s Wi-Fi connects to a router five miles away and thus makes it appear that the customer is not actually in the store but rather next to the building housing the router.



There is a fairly straightforward fix for a router that isn’t correctly broadcasting your store’s location. A service called Skyhook keeps a database of Wi-Fi spots and their locations. Many LBSs use Skyhook’s data to determine a Wi-Fi user’s location, so if your location is incorrect in that database, LBS users might have trouble checking in at your venue. You can update your location in the Skyhook database by following the steps at http://www.stationripper.com/iphone_foursquare_correcting_location.htm.

Digging into the Differences between Place and Location

As a marketer or business owner, you’ll find that as you get into using location-based services as part of your marketing mix, you will start to understand the nuances between what makes something a location versus a place. In fact, understanding the difference between the two (think of the semantical differences between a *house* and a *home*) is key to creating a great LBS experience for your customers.

Location is a fixed coordinate, a point on the planet, and although its attributes may change over time, the location never does. An easier way to look at a location is to translate it into longitude and latitude — the way any location in the world is precisely mapped by map makers and government agencies. To that end, location by itself is not interesting for marketing purposes.

When you take a location and make it into place, then you can start marketing. The attributes help answer questions and tell you how to craft your message.

If you take a location like that of the Russian River Brewery and present it in terms of longitude and latitude — 33.441775, -122.71162 — it means very little unless you are a cartographer. However, try adding some additional metadata like that provided on the business’s foursquare page shown in Figure 1-4, and you have a location.

Figure 1-4: Russian River Brewery’s foursquare page exhibits many of the key traits of a place.

The screenshot shows the Foursquare interface for the Russian River Brewing Company. At the top, the Foursquare logo is on the left, and the user 'schneidermike' is logged in from Newton, MA. Below the navigation bar, there are tabs for 'Me', 'History', 'Badges', 'Stats', and 'Friends', along with a search bar. The main content area features the venue name 'Russian River Brewing Company' with an 'ADD TO MY TO-DO LIST' button. The address is listed as '725 4th St. at E St, Santa Rosa, CA 95404 (707) 545-2337'. A map shows the location in Santa Rosa, CA. To the right, a 'Claim here' button is visible. Below that, a statistics table shows 'YOUR CHECK-INS: 2', 'TOTAL PEOPLE: 966', and 'TOTAL CHECK-INS: 1789'. The 'Mayor' section identifies 'Michael @' as the mayor with '20 check-ins' in the 'Last 60 Days'.

YOUR CHECK-INS	TOTAL PEOPLE	TOTAL CHECK-INS
2	966	1789

Mayor	Last 60 Days
Michael @ 20 check-ins	

Adding points of interest to location and place

Here is why the distinction between location, place, and point of interest are important. It is easy to understand location. It is a set of latitudes and longitudes on a map. Place brings context to a location. It allows you to have a conversation about the place Austin in the larger place Texas instead of having a conversation about all of the points of latitude and longitude on the map that define the borders of Texas and then the points that define the

borders of Austin. Places are agreed upon and defined, and they give you a way to talk about a location. Points of interest are defined but are not necessarily agreed upon. For example, you could find a gorgeous flower patch in a location. You might mark it with a pin on the map. This now becomes a point of interest for you, but it may not be agreed upon by the community at large. Still, you gave it context, and that matters for anyone who understands your context.

A *place*, in terms of location-based marketing, has attributes like these:

- ✓ Series of coordinates, locations
- ✓ Name
- ✓ Street name and address
- ✓ Cross-street
- ✓ City
- ✓ State
- ✓ Category
- ✓ Multiple tags to describe the place
- ✓ A check-in leader
- ✓ Check-ins

Dealing with Privacy Concerns

One of the biggest obstacles preventing location-based services from really catching fire is privacy. Consumers are rightly anxious when it comes to broadcasting where they are, in any particular moment. You need to be clear in your answers to the following questions:

- ✓ When participants check in, who exactly is seeing their whereabouts?
- ✓ How do you target groups of people?
- ✓ Are participants putting others at risk if people know their exact whereabouts?

Sharing a location, as with sharing anything online, can cause problems. Customers need to be comfortable with people seeing their data. You’re asking them to become in essence public figures. Make it clear in your terms and agreements what customers will be divulging in terms of what data is shared and in what application.

Here are a couple ways you can encourage people to check in a little more privately:



- ✓ **Off-grid check-ins:** The platforms are making attempts to address privacy. Some allow customers to check in and share information with the platform, but not with the public. In foursquare, this is called an *off-grid* check-in.

A check-in may not stay off the grid. If a friend mentions someone in his check-in, the previous off-grid check-in is suddenly public.

- ✓ **Private groups:** Whrrl (now part of Groupon) used a model that allowed someone to name two groups of people who can see check-ins: friends and trusted friends. It gave users another level of privacy. Although Whrrl no longer exists in its current state, other LBSs may provide this type of functionality in the future.
- ✓ **Geofencing:** Geofencing is a passive check-in where someone merely walks into a predetermined area. A *geofence* is a series of locations that forms an area. Users can set them up to make sure that onlookers cannot see their whereabouts when they are inside the geofence.
- ✓ **Microsharing:** Applications like Glympse allow customers to give an exact location to a series of people for a specified period of time.

Treating others as you wish to be treated is a good start, but here are a few other things to remember:

- ✓ **Be transparent.**

Make sure users know exactly what you want to collect from them and how it will be used.

- ✓ **Keep your requests simple.**

Do not ask for too much from your users. Make the requests easy to understand and don’t try to do too many things. If you confuse them, they will be leery of trusting your campaign. Make sure they see the link to the data you are requesting and the reward they are receiving. The reward should be commensurate with the amount of data they are providing.

- ✓ **Protect their identity.**

Do not sell participants’ data or expose their identities without their permission. See rule #1.