White Paper

How to Implement a Successful Common Short Code (CSC)

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Executive Summary

Mobile marketing has become a key channel for businesses looking to communicate with consumers directly and effectively. It offers unprecedented reach with much easier access to end users. Common Short Codes (CSCs) represent a fast-growing channel that offers direct communication with consumers, anytime and anywhere through a common medium – Short Message Service (SMS) commonly referred to as just "texting." This paper provides a primer on CSCs for the marketer looking to use this fast-growing phenomenon to reach customers. This paper will:

- Review the CSC life cycle
- Describe the CSC value chain
- Discuss CSC applications and challenges
- Outline important ways organizations can reliably monitor the use of the CSC channel.

Table of Contents

1. **How to Implement a Successful Common Short Code** 3
2. **Opportunities with Common Short Code** 4
3. **The CSC Value Chain** 5
   - 3.1. Wireless Service Providers or Carriers 6
   - 3.2. Aggregators 6
   - 3.3. Application and Content Provider 6
4. **CSC Lifecycle** 7
5. **Measuring Quality of Service** 8
   - 5.1. Performance 8
   - 5.2. Availability 8
   - 5.3. Application Requirements 8
   - 5.4. Quality of Service Varies 9
6. **Poor Performance and Availability Implications: The Need for Monitoring** 10
   - 6.1. Revenue Loss 10
   - 6.2. Brand Image 10
   - 6.3. Litigation and Attendant Woes 11
   - 6.4. Identifying the Bottleneck 11
   - 6.5. Role of SLAs 12
7. **Best Practices for Monitoring** 13

Conclusion 13

Appendix: Getting Help Selecting Your CSC Partner 14

1. How to Implement a Successful Common Short Code

Mobile phones are the preferred mode of digital communication. There are more than 3.3 billion mobile phone subscribers in the world, more than the number of landline subscribers. Over the past decade, the mobile phone has morphed from a simple communication device into a potent marketing tool. "Mobile marketing" has become a new discipline consisting of a unique and complex mix of technologies, business skills, and marketing expertise. This burgeoning market is driven by consumer receptiveness, carrier openness, and technological advances.

Today, more than 92.5 million consumers actively text message in the United States, providing a fairly accurate estimate of potential audience size for a given messaging campaign. – M:Metrics, "Common Short Code: Cracking the Mobile *Code*

Mobile marketing makes use of multimedia messaging (MMS), text messaging (SMS), and its related cousin Common Short Codes, to deliver advertisements and downloadable content (games, videos, podcasts, ringtones, wallpapers) to the mobile phone. The MMS, SMS, and CSC alphabet soup provides marketers with a way to pull eyeballs to the mobile Web to connect brands with consumers.

Arguable, SMS, with more than 350 billion text messages exchanged across the world's mobile networks every month, is the most dominant marketing tool. According to the Yankee Group, more than 15% of these messages are classified as commercial or marketing messages.

Common Short Codes, also known as just *short codes*, are SMS messages that are exchanged between a person and an application. CSCs are the preferred channel in the United States for brands to connect with mobile users. For any brand or enterprise, a CSC translates into one common address, one call-to-action that reaches more than 235 million mobile customers[i].

CSCs are easy to obtain and use and are becoming more and more popular in advertisements, in TV shows, and on consumer goods.

CSCs have many advantages:

- Easily reaching millions of prospects and customers;
- Ensuring higher response due to the ease of responding;
- Riding the phenomenal popularity of text messaging;
- Leveraging a popular and ubiquitous platform for new technologies and applications;
- Enabling new marketing messages (e.g., ringtones, wallpapers, etc.); and
- Utilizing a channel where the cost of communications is already bundled into the monthly phone service contract.

Given their ease of use, CSC-based campaigns increase consumer response to advertising and marketing promotions significantly. CSCs simplify the data entry process and the ability to participate in campaigns. For example, *GQ* magazine realized the power of the mobile platform by using short codes to reach its readership. According to *GQ*, 100% of their readership owns cell phones and 93% use their phones for text messaging. One campaign *GQ* launched was a text-to-win promotion using its short code 47624 (which

translated to GQMAG, a vanity CSC), which consumers could use for a chance to win a Kid Rock CD. According to Scott Carlis, *GQ*'s executive marketing director, 64% of contestants entered within the first day of the campaign launch.[ii]

CSCs have also be used for voting or polling, "text2win" sweepstakes, coupon redemption, gaming, and more recently for commerce and banking – some of these applications, though by no means all, are time sensitive. Dropped messages or delivery delays can cause major problems for the provider in addition to inconveniencing consumers. Continuous monitoring is the most important stage in the CSC life cycle. Slow delivery or low availability impacts revenue across the entire ecosystem. All parties in the ecosystem need to proactively monitor their services to stay alive in this competitive business.

2. Opportunities with Common Short Codes

In early 2006, a leading convenience store ran a successful in-store promotion using SMS. The retailer, which owns and operates approximately 500 convenience stores in the greater mid-Atlantic area of the United States, is known as a concept leader and technology innovator. After running the program for six months in control stores, the retailer realized a 3% increase in sales as a direct result of the campaign—even during a period of rapidly escalating gas prices, which caused sales to decline in noncontrol stores. Only 4.8% of recipients opted out of the program after opting in, and the company realized a 30% overall redemption rate on all SMS mobile coupons. While not all CSC campaigns may be as successful, the potential for CSC is huge.

About 50 million subscribers used short codes in October 2007; the table below lists the top applications in the U.S. for that month.[iii]

SMS Ads: Offer Type Received	Users	As % of Total
Contest	8,548,239	17.2%
Coupon or discount	7,401,207	14.9%
Info about product/service/brand	20,614,307	41.5%
Donation to charity/nonprofit	1,293,609	2.6%
Other/unknown	11,773,684	23.7%

CSCs are useful in a number of ways. The table below lists a few of the application categories that are enabled through CSCs. New applications are being created every day.

Category	Description
Entertainment	Premium rate messages, subscription service for TV and radio polling, games, chat, dating, quizzes
Marketing	Premium billed contests, subscription services and promotional dollars for reminders, group functions, incentives and promotions.
Advertising	Drive purchases to targeted markets, create affinity groups and ongoing communications for new products using broadcast (TV, radio), print (online, newspaper, magazine)
Commerce	Transaction fees for the redemption of coupons, point-of-sale purchases and micropayments; subscriber rate plans
Customer service	As a self-service option for logging customer issues as well as responding to simple requests
Information services	Premium messages for opt-in alerts (weather, horoscopes, jokes), transaction fees for mobile search services

3. The CSC Value Chain

The CSC channel value chain is the path by which the actual communication and interaction takes place between the marketer and mobile consumers. The CSC ecosystem comprises four interconnecting entities:

- Wireless service providers. This is the mobile carrier connecting to the mobile subscriber.
- Aggregators. They connect to multiple service providers to ensure delivery of CSC messages across multiple wireless service providers.
- Content providers. These are the companies to whom the CSC is registered and that own the content desired by consumers (e.g., ringtones, games).
- Application providers. These companies enable content for mobile and specialize in running mobile campaigns.

Another important element is the consumer demand creation for products, services, events, and content programs, which occurs outside this ecosystem through traditional media and retail channels.

The flow of information is two-way. The subscriber sends a message using the short code, which makes its way from the service provider to the aggregator and onward to the application provider or content provider. In turn, the application or content provider responds with either an acknowledgment or the actual content ordered (e.g., a ringtone, wallpaper, or game). This then flows back through the aggregator and service provider to the subscriber.

3.1 Wireless Service Providers or Carriers

Wireless service providers, or mobile carriers, as they are commonly referred to, own the infrastructure that receives and delivers messages from and to the subscriber. Since SMSs are not free, carriers also serve as collection agents for the entire value change. Usually they are not visible in the campaign except for the charges that show up on subscribers' monthly bills. Practically every campaign traverses multiple wireless services providers or carriers.

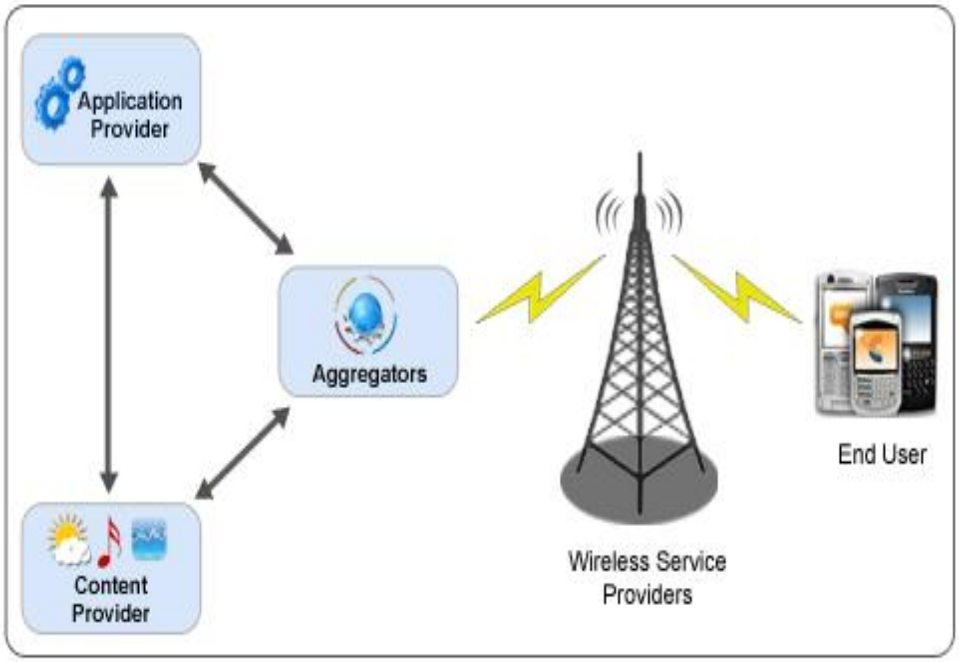
3.2 Aggregators

Aggregators work with multiple service providers to reach wider audiences. Due to strong relationships with service providers aggregators ensure delivery of CSC messages across different mobile networks and geographies. Most aggregators install their own equipment on the service provider's premises and create a secure path to transfer SMS messages for every CSC service.

It is important for the marketer to choose the right aggregator, since aggregators have different reach capabilities, costs, and ultimately levels of assured quality.

3.3 Application and Content Provider

The aggregator diverts all the short code traffic to the application provider or content provider as needed. The application or content provider respond to short code messages by delivering what is requested by the mobile phone user (e.g., a ringtone). As a marketer, you probably work for an application or content provider, and your interest is in engaging in a dialog with mobile subscribers.



Revenue Model of the CSC Ecosystem

The CSC channel is not free. Most subscribers pay a fee per SMS or for an SMS bundle, such as 500 per month. CSC messages are no exception. For normal SMSs, these charges range from 5 to 10 cents per message (some service plans may offer cheaper rates). However, premium-rate short code services can charge as high as a few dollars per short code message. This amount shows up on the subscriber's monthly bill and is collected by the service provider (i.e., the mobile carrier). The service provider keeps its share of the revenues and distributes the remaining between the aggregator and content and application providers.

4. CSC Lifecycle

Implementing a CSC campaign is a multistep process. We've outlined these steps here, though of course there is more to say about each, and we encourage serious marketers to explore the subject further.

1. Select and register a short code.
Common Short Codes are phone numbers, usually four to six digits, that mobile phone users use to send Short Message Service (SMS) messages in order to receive information, sports scores, and weather alerts, or to participate in contests and receive electronic coupons. CSCs make it fast and convenient for mobile users to send and receive information. Companies can select and register their CSCs through Common Short Code Administration.

2. Choose an application provider.
Each message addressed to an active CSC is eventually routed to an application. Although an application may be developed and/or hosted by the content provider, a number of application providers specialize in software development and hosting for mobile messaging applications.

3. Choose an aggregator.
In order to utilize an active CSC, application providers and/or content providers must obtain connectivity to participating wireless service providers' networks so that messages addressed to their CSC can be routed from the wireless network to their application. Aggregators have relationships with the service provider and usually install equipment within multiple service provider premises to route CSC traffic from end users to the application provider. Choosing the right aggregator is critical to the success of the campaign.

4. Launch your CSC campaign.
Launch your campaign through traditional channels, such as print, online, or TV. Use the CSC to enable customers to vote, buy, rate, or participate. Most aggregators and application providers will give access to a Web-based console to access campaign performance data in real time.

5. Verify Quality of Service.
All through the campaign, event, promotion, or service life cycle, it is important that the CSC service be available and respond within acceptable time windows. For high-profile events, this window can be as small as 30 seconds; other services may need reliability more than timeliness. In the next section we review the need to measure quality

from an end-user perspective. We also discuss the metrics that give an accurate representation of quality. Suffice to say, you need to monitor that your short codes are working in all geographies of relevance at the time of the campaign to ensure that responses are provided within an acceptable timeframe for most users.

5. Measuring Quality of Service

The use of CSCs, the number of CSC applications, and the number of subscribers using CSCs are all increasing with each day. According to the wireless industry association CTIA, there were more than 2,000 CSC programs in process in March 2007.[iv] America's favorite TV program, *American Idol,* was getting more than 40 million CSC votes a week toward the end of the 2007 season. For every successful CSC promotion, campaign, or service, it is important to ensure a satisfactory end-user experience. The two dimensions of user satisfaction are performance and availability. At a minimum, each CSC message needs to successfully complete the round trip between the user and application within a "reasonable" amount of time. And application requirements vary, so QoS must always be calibrated according to the object of the specific application or service.

5.1 Performance

Performance is measured as the end-to-end elapsed time for the round-trip delivery of the CSC message between the user and application.

5.2 Availability

Availability is a percentage measure of the number of successful round-trip deliveries of the CSC message between the user and application. Unsuccessful messages include incorrect messages, messages that were never sent, and messages that are not acknowledged within a predefined time window.

5.3 Application Requirements

Each application has different requirements for performance and availability. For example, a commerce application needs to guarantee a response to every sender, while a banking application needs to ensure a quick response.

The table below describes the importance of these requirements for various applications.

Application	Description	Availability	Performance
Banking	Online banking transactions and account information	Very critical	Very Critical
Mobile Commerce	Mobile payments or retail commerce, e.g. eBay	Very Critical	Critical
Content (games, ringtones, wallpapers, music)	Purchased content like ringtones, wallpapers, music	Very Critical	Important
Information services	Mobile search or real-time alerts	Important	Critical
Voting	Interactive TV voting	Important	Important
Sweepstakes	Text2win campaigns	Important	Critical
Social networking	Dating, chatting, and social networking applications	Important	Critical

5.4 Quality of Service Varies

Performance and availability vary significantly across carriers, aggregators, times of day, application and content providers, and campaigns. For example, the two graphs below show performance and availability for the same short code campaign across five different aggregators on the same North American wireless service provider.

The performance chart below shows significant variation in performance among all five aggregators as measured in seconds. Aggregator E consistently fairs the worst. The second chart below it measures availability in percent (with 100% being the desired outcome) and shows an early dip for aggregator C and then multiple dips for Aggregator D, indicating problems that would affect campaign performance.

As a marketer, you are trying to show maximum return for your campaign. Poor CSC performance and availability can sink your campaign. You have to work with your mobile operations team to pick an aggregator that has a consistently good track record.

Performance and availability of aggregators over same carrier

Ranking over AT&T
1. Aggregator A
2. Aggregator B
3. Aggregator C
4. Aggregator D
5. Aggregator E

6. Poor Performance and Availability Implications: The Need for Monitoring

Given the variability in performance and availability, every marketer should track campaign performance and availability. Poor performance and poor availability can have severe business implications, ranging from loss of revenue and impact on brand image to threats of litigation – especially where commerce is involved. Given the complex nature of the value chain, it can be hard to locate the root cause of the problem. Even though there are service-level agreements (SLAs) governing each section of the value chain, just having an SLA is not enough to guarantee performance.

6.1 Revenue Loss

CSC is a paid channel where the subscriber picks up the tab. Low availability will impact revenue for the entire ecosystem. To take the American Idol example, each of the 40 million SMSs typically costs about 10 cents, so even 99% availability (i.e., 1% of these messages are lost) represents a loss of $40,000 per week! With premium short codes (where charges could be a few dollars per SMS) the losses can be higher. Since the entire chain shares the revenues, poor availability will mean lower revenues for all the players – service provider, aggregator, application provider, and marketer.

Coca-Cola runs promotions where consumers redeem cap codes from 20-oz. bottles via SMS-enabled mobile phones. They simply use their phones to dial the CSC 2653 (which spells out COKE), then visit a Web site to enter in contests for prizes. Even if 1% of these messages were lost (a conservative number based on some of the research conducted by Keynote) – Coca-Cola's image would be severely impacted.[5]

6.2 Brand Image

Strong brand-driven companies – including those like Coca-Cola and Google – leverage the CSC channel in different ways.v Similarly, Starbucks offers a store locator service through CSCs.vi However, even though commerce may not be involved in their applications, poor performance or availability carries the risk of causing severe damage to their brand. For

example, if you sent a query to Google (short code 466453) asking for an address and you didn't get a response – you would think twice about using the service next time around. Bad news travels at the speed of light, and even a small group of people having a bad experience can be a disaster for brand-sensitive companies. Note that both performance and availability are critical for these companies.

6.3 Litigation and Attendant Woes

While a lost short code message represents a loss in revenue or an irate user, the bigger threat is sending the response to the wrong user – especially if that ends up involving litigation. In 2007, there was a rash of complaints from users claiming that their cancel orders for ringtones were never recorded. This prompted an investigation by the FCC that resulted in service providers returning millions of dollars to customers.[vii]

Given the huge reach of the CSC channel (potentially any mobile phone subscriber), all parties are susceptible to significant litigation risk. Cell phone complaint sites are full of messages from irate customers who sent a short code to end a paid service that was not stopped even after multiple messages.[viii]

In addition, the FCC is considering laws to manage CSC usage and support by carriers. In certain cases, wireless providers have barred certain campaigns or organizations on their channels. In certain other cases, carriers selectively deprioritize some traffic – leading to poor availability and poor performance.

6.4 Identifying the Bottlenecks

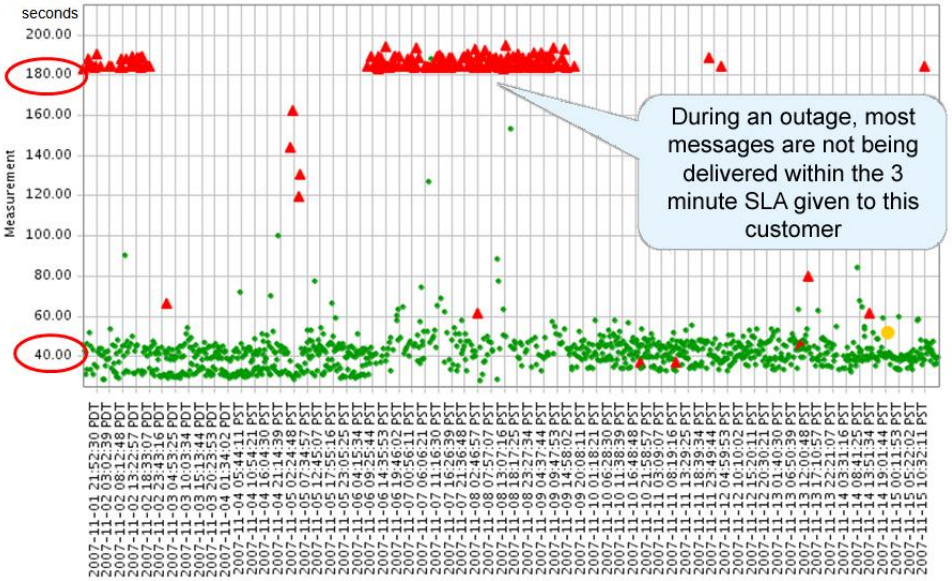
The mobile marketing delivery chain comprises four interconnected entities – content providers, applications providers, aggregators, and service providers. Each of these entities handles messages on different hardware platforms that interact in both directions. Consequently, there are many potential points of failure.

CSC delivery involves multiple carriers since campaigns are rarely carrier or geography specific. However, as the chart in the last section shows, performance across aggregators on the same carrier varies significantly. The reasons for these variations range from the performance guarantees or revenue sharing agreements or even the hardware that the aggregator is using.

While the possibility of hardware failure exists at every connection point, it is more likely that a service provider may experience a large traffic burst, or an aggregator may be prioritizing higher-value traffic over lower priority messages. It is hard to pinpoint where the choke points occur without detailed monitoring across the entire value chain.

The diagram below indicates a three day outage for the short code which resulted in drop in availability across all 4 carrier networks.

Short Code Availibility (timeout)



6.5 Role of SLAs

Most service providers, aggregators, and application providers usually sign service-level agreements with the client. Even though each participant in the CSC value chain signs an SLA guaranteeing 99.99% uptime, there is a strong need for independent monitoring to ensure that the SLAs are being met and performance is not slipping at the interfaces between the various players.

The plot below tracks the performance of a short code that was monitored by Keynote Systems[ix]. During an outage marked with the red cluster, most messages were not being delivered within the three minute SLA given to the customer; thus breaking the SLA and effecting the end user.

The potential for revenue loss, negative impact on brand image, and the threat of litigation combined with the need to monitor a complex value chain for enforcing SLAs all point to the need for independent monitoring from an unbiased, trusted entity that can quickly identify a problem, pinpoint its exact origin, and provide guidance on how to fix it.

In the next section we identify the best practices for such a monitoring solution.

7. Best Practices for Monitoring

Clearly, there is a strong need to monitor CSC campaigns from an end-user perspective. This section lists the best practices for thorough and useful monitoring.

1. Continuously measure real user experience.
A best-in-class solution should continuously monitor the CSC campaign from the subscriber's perspective over live carrier networks. The solution should be able to measure end-to-end real-user test cases.

2. Get real time insights.
The solution should work in real time. It should provide real-time alerts when service quality dips or messages are not delivered. There should

be foolproof, end-to-end verification for all the servers and notifications around the clock.

3. Consistent and regular reporting.
The monitoring solution needs to generate automatic, customized reports to measure every aspect of message delivery. Custom reporting should provide details of all transactions.

4. Measure both performance and availability:
The solution should measure both the performance and the availability of CSC messages across mobile services, applications, and infrastructure. It should also provide insights sufficient to carry out a root cause analysis of poor performance or availability.

5. Global monitoring for a global marketplace.
The monitoring needs to happen on multiple carriers from multiple locations throughout the globe so that all geographical locations or carrier-specific issues are identified and isolated.

6. Your customers use a plethora of phones; you need compatibility over multiple handsets.
The solution needs to check for content compatibility across different mobile handsets. This is especially important for content services (e.g., games) that may or may not be supported on different handsets.

7. Benchmark against best-in-class.
The monitoring must be able to baseline performance and benchmark it against the best- performing CSC campaign.

Conclusion

CSCs represent a new marketing channel that is fast gaining traction because of its simplicity and reach. *American Idol* alone in 2007 was receiving over 40 million short code messages per week. Delivery of a CSC campaign involves multiple players – wireless service providers, aggregators, content providers, and application providers. It is fairly straightforward to sign up for a short code program. However, given the complex nature of the value chain, CSC campaigns run the risks of lost revenue and poor brand experience, and are exposed to the threat of

litigation due to poor performance. All of these risks require real-time monitoring of SLA agreements and visibility into real-time performance across the delivery chain to identify the actual failure points. An independent monitoring solution ensures that the campaign is meeting availability and performance goals and provides insight into every player's performance, thus allowing marketers to choose the right partners.

Appendix: Getting Help Selecting Your CSC Partner

Keynote provides on-demand solutions for end-user performance monitoring for mobile applications, services, and content. Keynote's global test and measurement network can measure performance and availability across multiple locations and carriers. Measurements can be made using real devices or by emulating devices over live carrier networks.

The Keynote solution can also help you answer questions for many more of you mobile applications, content and services:

- **Messaging (SMS, CSC, MMS)** - Did your user receive the message quickly and accurately? How is your SMS aggregator performing?
- **Wireless Application Protocol Performance** - Are your users able to download and navigate through your mobile site quickly? Are there broken links or missing images?
- **Content -** Is your content available everywhere all the time?
- **Client Applications -** Did your application crash during download?
- **Email -** Does your email service have outages? What is the delivery time for your messages?
- **Streaming -** How long does it take to play the video clip after the user selects it? Is there buffering?
- **Wireless LANs -** Are your subscribers getting fast download speeds?

i See http://mmaglobal.com/modules/article/view.article.php/448.

ii IDC, "Common Short Codes: The Time Is Now for Mobile Marketing and Outreach," January, 2007

iii See http://www.usshortcodes.com/mmetrics_whitepapers.html.

iv See http://www.ctia.org/media/press/body.cfm/prid/1677.

v See http://www.mblox.com/_files/mBloxWhitePaper_SMSandtheEnterprise.pdf.

vi The Web page http://www.starbucks.com//retail/mobile.asp shows Starbucks' store locator service.

vii See http://www.cbsnews.com/stories/2008/02/22/eveningnews/main3867197.shtml.

viii For example, see http://classactionconnect.com/cell_phone_issues/2007/08/30/thumbplay-inc-48000-71073-66075-40443/#comment-2781.

ix See http://www.keynote.com