



Going Mobile

Text Messaging Basics for Business
White Paper

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Going Mobile: Text Messaging Basics for Business

1.0 Overview

Text messaging, also known as “texting” or more formally as Short Message Service (SMS), is the process of sending simple text messages between mobile phones. Another form of mobile text messaging is Multimedia Messaging Service (MMS) which allows people to send photos, ring tones, and movies directly from one mobile phone to another without using the Internet. The focus of this white paper is on SMS since nearly all cell phone subscribers, throughout the world, own handsets which have the capability to send and receive SMS text messages.

1.1 Birth

Although the standard for SMS was first defined in 1985 it was not until December 3, 1992 when the first commercial SMS text message was sent. Originally, the standard was developed specifically for the Global System for Mobile communications (GSM) standard currently used on the AT&T and T-Mobile wireless networks. GSM mobile phones are easily identified since they require a Subscriber Identity Module (SIM) card, which is a type of smart card, that stores the actual phone number and other information such as an address book. Due to the popularity of SMS, support for texting has expanded to other common mobile phone standards such as Code Division Multiple Access (CDMA), used by Sprint and Verizon, and satellite networks.

1.2 Growth

SMS is available to virtually all 3.3 billion cell phone subscribers worldwide most of whom are active texters. In countries with recent turmoil, such as Kenya and Myanmar (Burma), SMS has been a key communications pipeline both domestically and internationally.

Although the market share of “smart phones” which enable e-mail and Web access has been increasing, so has the dominance of text messaging. Each of the past several years has set a new record for text message traffic.

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1.3 SMS Process

SMS uses a store and forward process which pushes a text message to a mobile handset, compared to e-mail, which requires a user's e-mail client software to routinely poll an Internet Service Provider's (ISP) mail server to pull e-mail messages. If the recipient of an SMS message is not readily available, the message delivery will typically be retried for a period of several days.

1.4 Message Length

A single SMS may contain up to 160 characters, although there are some technical limitations for sending other alphabets such as Japanese characters. Many newer handsets can now break up text messages longer than 160 characters into multiple parts and automatically merge the text messages on the receiving handset.

1.5 Consumer Costs

U.S. consumers typically either pay a flat rate to send and receive a specific (or unlimited) number of text messages as part of their monthly cell phone bill, or they pay between \$0.05 and \$0.25 per message. Because a recipient may be charged to receive a text message, wireless carriers have been active in keeping text message spamming to a minimum.

1.6 Usage

It is not uncommon for active texters in the U.S. to send and receive hundreds or thousands of text messages each month.

1.7 Reach

Text messages can be routed domestically or internationally and they typically can be sent and received within seconds throughout the world.

1.8 Predictive Texting

Since most mobile handsets do not have a QWERTY style keyboard, the messages must be written using only the 12 keys on the keypad through a method called *predictive texting* under the brand names iTap or T9. Each handset's manual usually

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has detailed instructions on how to compose a text message which, although the instructions may sound complex, only requires a small amount of practice in order to master the technique.

2.0 Examples of Business Usage

Although the most popular form of text messaging is person-to-person messaging, many companies have set up computer servers to bring mobile services to cell phones. One benefit of computer-to-person text messaging is that requests for information can be executed much faster when compared to visiting a website on a cell phone, submitting the form information, and waiting for the web page response to load.

Most companies offer their services for free, supported by advertisements, or for a small fee, typically \$1.99. Below are some examples of text message services offered by a variety of businesses.

2.1 Search

Both traditional search engine companies and new SMS companies are providing search via SMS text messaging. A typical restaurant search request might look like the following: `Search Pizza 92009` (the requester's ZIP code) or, in the case of a stock quote search, it might look like `Stock XYZ`. Recently, SMS short codes have been appearing in T.V. ads and on real estate signs as a means of requesting more marketing information.

2.2 Blogging

A popular new activity lets people blog via text messaging. Blog entries are typically very short, such as 100–160 characters with information such as, "At downtown Carlsbad coffee shop." These updates can then automatically be relayed to friends subscribing to either a specific person's updates or an update containing a specific word or phrase. Other companies allow people to post photos to websites, via MMS, directly from their cell phones.

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2.3 Q&A

Q&A companies charge users to answer a question which is researched and answered by a live person. A typical flat rate charge may be \$1.99 for answering a question such as, "What is the market share for Apple's iPhone in the U.S." Responses typically take about ten minutes.

2.4 Classified Advertisements

Some companies offer customers the ability to submit classified ads, which are posted online and in local newspapers. Customers can respond to ads posted in local newspapers via SMS without giving out their contact information.

2.5 Alerts and Updates

Some SMS companies may offer alert/update services. For example, a company may automatically send an update when a stock quote reaches a certain price; or, during a sports event, they may send sports scores at the end of each quarter and then the final score at the end of the game. Additionally, users can sign up to receive an alert when a specific job opening is posted in local classified ads.

3.0 Addressing Messages

Most countries have two formats to address a text message. The first format, in the case of a person-to-person text message, is to simply address the message to the recipient's ten digit phone number, sometimes referred to as a *long code*. The other format that is used when sending a text message to a computer system (i.e. voting during *American Idol*) uses a *short code*, more formally known as a common short code (CSC) in the U.S., which is usually a five or six phone digit number.

3.1 Person to person

In order to address a person-to-person text message, the "To" portion of the message only needs the recipient's phone number. In the U.S., the three digit area code plus seven digit phone number will suffice. To send a text message to an international number, simply include the recipient's international phone number, which is usually prefaced with the + symbol that means an international number follows. For example,

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+44 7781 488126 would route a text message to the U.K. (+44 is the U.K. country dialing code; the U.S. country dialing code is +1, hence the reason that dialing a long distance phone number in the U.S. begins with 1 followed by the area code and phone number).

3.2 Keywords

Keywords are generally used in all messages sent to short codes. For example, when requesting the local weather or a list of pizzerias, via SMS, the message sent to the a short code might look like one of the following:

`Weather 92009`

`Pizza 95010`

In these two examples, `Weather` and `Pizza` are keywords followed by the user's ZIP code.

4.0 CSC Procurement

Leasing a short code is roughly the equivalent of purchasing an Internet domain name. The key difference is that a domain name typically costs about \$10/year, whereas a short code will cost either \$500/month for a randomly assigned five-digit short code or \$1,000/month for a custom five- or six-digit short code. There is a small market for shared short codes which are similar to party phone lines from decades ago. In the case of shared short codes, incoming text messages may be routed to different companies based on the incoming message's keyword.

4.1 Short Code Registration

In the U.S., the only organization that handles short code registration is the Common Short Code Administration (CSCA: <http://usshortcodes.com>) which is operated by its parent organization, CTIA - The Wireless Association®. The CSCA registration authority is the equivalent of Network Solutions' domain name registrar status in the mid 1990s in that it is the only way to register a CSC.

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4.2 SMS Aggregators

Due to the large number of companies providing SMS services (also referred to as *content providers*) the wireless carriers refer all requests for connectivity to *SMS aggregators* who act as middlemen between a content provider's computer systems and the wireless carrier's networks. Not every SMS aggregator has a relationship with all wireless carriers.

4.3 Short Code Costs

Typical costs to host a short code with an SMS aggregator are about \$1000/month (in addition to the monthly CSC leasing cost of \$500 or \$1000 per month) plus a charge between \$0.025 to \$0.08 per text message sent or received.

Since typical short code set up and hosting can be a \$25,000 – \$30,000 per year investment, many corporations looking to get their feet wet in mobile/SMS will partner with companies offering the specific service that meets their needs, bringing monthly costs to well under \$100/month.

4.4 GSM Modem

An alternative method to send text messages from one computer system to another is through a GSM modem, which is basically a computer hooked up to a special cell phone designed to only send and receive SMS text messages. This method is ideal for systems that need to "report in" their status, such as a leased copying machine reporting in its monthly usage, a refrigeration unit reporting in its daily high/low/average temperatures, or a vehicle reporting in its mileage, tire pressure, etc. Unlike short codes, which can handle sending and receiving thousands of SMS text messages each minute, GSM modems and cell phones can only send or receive up to ten text messages per minute.

4.5 CSC Carrier Control

Unlike a regular ten digit phone number (long code), not all text messages can be sent to or received from short codes. Since SMS travels through the wireless carrier's closed network (unlike the open Internet), carriers can tightly monitor and control text

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messaging. This allows wireless carriers to minimize spam text messages sent to their customer's cell phones. The downside is that each carrier must specifically approve every aspect of a content provider's text messaging application. This approval process, which must be done on each wireless carrier's network, typically takes about eight weeks in order to get short code message traffic flowing on a network.

4.6 MO & MT

Text messages sent from a handset to a short code are referred to as *Mobile Originated* (MO) and text messages sent from a short code to a handset are referred to as *Mobile Terminated* (MT). Some SMS aggregators may only offer MO or MT services, which means that a content provider may only be able to send text messages to cell phones without the ability to receive responses from those mobile customers.

4.7 Premium SMS

Since wireless carriers tightly control their networks, they are able to provide services which would normally not be available on an open network such as directly billing a customer's phone for products and services delivered over the network. A key service is *premium SMS* (PSMS) which allows third parties to charge a mobile subscriber for services and products delivered over-the-air (OTA) to their handset. These charges either show up on their monthly bill or, in the case of a prepaid cell phone, their account balance is debited. The most common items sold through premium SMS are ring tones and games. Unlike credit card companies, which typically take about a 2%–2.5% cut of the sales revenue, the wireless carriers and SMS aggregators typically take a combined 40%–60% of each sale. In other words, selling a \$1.99 ring tone could result in the content provider (seller) collecting less than \$1 of the revenue.

4.8 Premium SMS Process

Premium SMS typically requires double opt-in. In other words, to purchase a \$1.99 ringtone, the buyer must send a keyword, for example U2, to a short code to purchase a ring tone from the U2 rock band. The seller's server would reply with a text message asking the buyer to confirm their intended purchase, for example, Reply OK to confirm your U2 ringtone purchase for \$1.99. Once the buyer replies OK,

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the ring tone download would begin and the customer's phone would be billed \$1.99 for the ring tone plus additional standard rate SMS charges for each message sent and received during the transaction

5.0 SMTP (E-mail) Gateway

Nearly all wireless carriers maintain an SMTP gateway, for personal use, which allows an e-mail to be converted to a text message and forwarded to the recipient's handset. The challenge with this method is that the sender must know the wireless carrier of the recipient (i.e. AT&T, Sprint, etc.) in order to send the message to the correct e-mail address.

5.1 Teleflip

An alternative method, especially when the recipient's cell phone carrier is not known, is to send an e-mail to the recipient's phone number followed by @teleflip.com (i.e. 2125551234@teleflip.com). Teleflip is able to provide this free service, for personal use, by subscribing to a database from Neustar Inc. which contains all U.S. wireless phone numbers and their respective carriers. This database accounts for cell phone number portability, so that an outgoing text message will be routed to the correct network even if the recipient's phone number was recently changed (ported) from one wireless carrier to another.

5.2 Charges

Wireless carriers which have SMTP gateways generally provide their services free on a limited basis to the sender, but normal text messaging charges apply to the recipient.

6.0 Conclusion

While text message traffic continues to grow domestically and internationally, the business expenses involved in terms of, time, money, and technical expertise can be expensive. Considering that short code setup and maintenance will cost more than \$20,000/year the key, for corporations whose core competency is not technology, is to partner with SMS services companies.

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About SMS Pal, Inc.

The Company

SMS Pal, Inc., founded in 2007, is a text message classified ad company based in Carlsbad, California.

Overview

SMS Pal gives newspapers and advertisers the ability to send and receive classified ads via text messaging.

Customers can place a classified ad via text message using SMS Pal and it will run automatically on our website (<http://www.smspal.com>). They will then have the option of running the classified ad in local, participating newspapers. Customers never need access to a computer, the Internet, or e-mail to place a classified ad or to contact the person who placed one since this can all be accomplished by SMS. Additionally, the customer does not need a credit card to place an ad on the SMS Pal website. SMS Pal charges 99¢ per classified ad, which will appear on the customer's next cell phone bill, or in the case of prepaid cell phones, it will be deducted from the phone's remaining balance. Customers placing classified ads only need a cell phone that can send and receive simple SMS text messages. More than 99% of the cell phones made in the last few years have the ability to send and receive SMS text messages.

Another exciting application for text message classifieds is SMS Pal's new "alert" system, where advertisers request to be notified by text message when a classified ad runs in a category that they are interested in, such as a particular model of car or a job opportunity. Newspapers can use this service to greatly enhance their classified ad program, increasing revenue for the newspapers and providing better results for advertisers.