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CRS Report for Congress

Text and Multimedia Messaging: Emerging Issues for Congress

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Prepared for Members and Committees of Congress

Text and Multimedia Messaging: Emerging Issues for Congress

Summary

The first text messages were sent during 1992 and 1993, although commercially, text messaging was not widely offered or used until 2000. Even then, messages could only be sent between users subscribed to the same wireless carrier, e.g., Sprint customers could only exchange messages with other Sprint customers. In November 2001, however, wireless service providers began to connect their networks for text messaging, allowing subscribers on different networks to exchange text messages. Since then, the number of text messages in the United States has grown to over 48 billion messages every month. Additionally, text messages are no longer only sent as "point-to-point" communications between two mobile device users. More specifically, messages are also commonly sent from Web-based applications within a Web browser (e.g., from an Internet e-mail address) and from instant messaging clients like AIM or MSN.

For Congressional policymakers, two major categories of issues have arisen: (1) "same problem, different platform" and (2) issues stemming from the difficulty in applying existing technical definitions to a new service, such as whether a text message is sent "phone-to-phone" or using the phone's associated email address. An example of the first category would be consumer fraud and children's accessing inappropriate content, which have existed previously in the "wired world," but have now found their way to the "wireless world." An example of the second category would be that spam sent between two phones or from one phone to many phones does not fall under the definition of spam in the CAN-SPAM Act of 2003 (Controlling the Assault of Non-Solicited Pornography and Marketing Act, P.L. 108-187); however, if that same message were to be sent from a phone or computer using the phone's associated e-mail address, it would.

The increasing use of text and multimedia messaging has raised several policy issues: applicability of CAN-SPAM Act to unwanted wireless messages; refusal of some carriers to allow users to disable text messaging; carrier blocking of Common Short Code messages; deceptive and misleading Common Short Code programs; protecting children from inappropriate content on wireless devices; mobile cyberbullying; and balancing user privacy with "Sunshine," Open Government, and Freedom of Information Laws.

One issue, cyberbullying, has been the topic of legislation in the 110th Congress: H.R. 3577, H.R. 6120, S. 3016, and H.R. 4134. Cyberbullying refers to the new, and growing, practice of using technology to harass, or bully, someone else. Each of these four bills would provide grants for education about cyberbullying. No action has been taken on the first three bills; H.R. 4134 was passed by the House on November 13, 2007, and referred to the Senate Committee on the Judiciary on November 14, 2007.

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Text and Multimedia Messaging: Emerging Issues for Congress

Introduction

The first text messages were sent during 1992 and 1993, although commercially, text messaging was not widely offered or used until 2000. Even then, messages could only be sent between users subscribed to the same wireless carrier, e.g., Sprint customers could only exchange messages with other Sprint customers. In November 2001, however, wireless service providers began to connect their networks for text messaging, allowing subscribers on different networks to exchange text messages. Since then, the number of text messages in the United States has grown to over 48 billion messages every month. Additionally, text messages are no longer only sent as "point-to-point" communications between two mobile device users. More specifically, messages are also commonly sent from Web-based applications within a Web browser and from instant messaging clients like AIM or MSN. **Table 1** tracks the historic growth of monthly text messaging between 2001 and 2007 from about 33 million to over 48 billion messages; **Table 2** tracks the historic and projected growth in the number of mobile customers using text messaging between 2003 and 2010 from about 32 million users to 100 million.

Number of Text Messages				
December 2007	48,100,000,000			
June 2007	28,800,000,000			
December 2006	18,660,000,000			
June 2006	12,040,000,000			
June 2005	7,250,000,000			
June 2004	2,860,000,000			
June 2003	1,220,000,000			
June 2002	930,000,000			
June 2001	33,500,000			

Table 1. Text Messaging Sent per Month in the United States

Source: Adapted from CellSigns "Mobile Statistics," available online at [http://www.cellsigns.com/ industry.shtml] and CTIA "Wireless Quick Facts," available online at [http://www.ctia.org/media/ industry_info/index.cfm/ AID/10323].

Number of Text Messaging Users				
2010	100,000,000			
2009	96,200,000			
2008	92,000,000			
2007	85,300,000			
2006	75,300,000			
2005	62,900,000			
2004	49,700,000			
2003	32,000,000			

Table 2. Actual and Projected Total U.S. Text Messaging Users

Source: Adapted from CellSigns "Mobile Statistics," available online at [http://www.cellsigns.com/ industry.shtml].

Definitions

Short Message Service

Short Message Service (SMS) is a method of communication that sends text between cell phones, or from a computer or handheld device to a cell phone. The "short" part refers to the maximum size of the text messages: 160 characters.¹ The term "SMS" is generally used interchangeably with the term "text message."

Even when not being used for a voice call, a mobile phone is constantly sending and receiving information. It is communicating to its cell phone tower over a control channel. The reason for this communication is so that the cell phone system knows which cell a phone is in, and so that the phone can change cells as the user moves around. Every so often, a phone and a tower will exchange a packet of data that lets both "know" that everything is working properly.

The control channel also provides the pathway for SMS messages. When someone sends an SMS message, the message flows through the SMS Center (SMSC), then to the cell tower, and the tower then sends the message to the recipient's phone as a packet of data on the control channel. **Figure 1** illustrates how a SMS message is processed.

¹ For some alphabets, such as Chinese, the maximum SMS size is 70 characters.

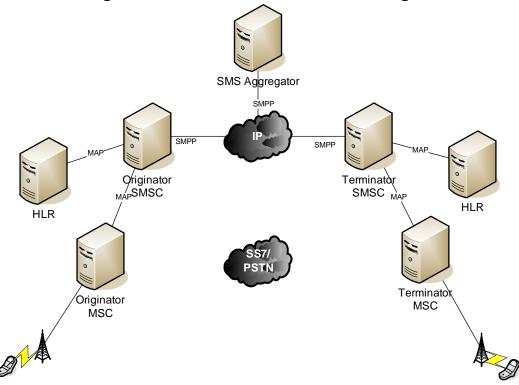


Figure 1. Path of Intercarrier SMS Messages

Source: Used with permission from Motorola. Definitions: The "Internet Protocol (IP) cloud" represents an Internet Protocol network used to carry data traffic; HLR = Home Location Register (the central database that contains details of each mobile phone subscriber); MAP = Mobile Application Part signaling protocol; MSC = Mobile Switching Center; the "Public Switched Telephone Network (PSTN) cloud" is included to demonstrate that SMS messages are not carried over it; SMS Aggregator = an intermediary between mobile service providers providing SMS service; SMSC = SMS Center; SMPP = Short Message Peer-to-Peer Protocol.

Enhanced and Multimedia Message Service. While SMS only allows plain text to be sent, two alternative messaging services allow for more elaborate types of messages. With Enhanced Messaging Service (EMS), formatted text, sound effects, small pictures, and icons can be sent. MMS (Multimedia Messaging Service) allows animations, audio, and video files in addition to text to be sent

E-mail-to-SMS Messaging. As noted above, SMS messages may be sent between a computer and a mobile phone. However, these messages are sent using the e-mail address associated with the mobile device, such as 2025551212@carrier.com. For that reason, these messages are classified as e-mail and therefore are subject to different and more stringent regulation under the CAN-SPAM Act.

Common Short Codes (CSCs)

Introduced in the U.S. market in October 2003, Common Short Codes (CSCs) are short numeric codes of five or six digits, compatible across carriers, to which text messages can be sent from a mobile phone. Wireless subscribers send text messages

to short codes to access a wide variety of mobile content, for example, to vote for contestants on American Idol. Many entities use CSCs to communicate with interested parties: television stations; individual television shows; radio stations; instant messaging services; political, advocacy, and other organizations; magazines, and sports teams — among others. Users send a message to the CSC to subscribe to alerts or other messages. Sometimes these messages are delivered for free by the originator, sometimes there is a fee. **Figure 2** illustrates how a CSC message is processed.

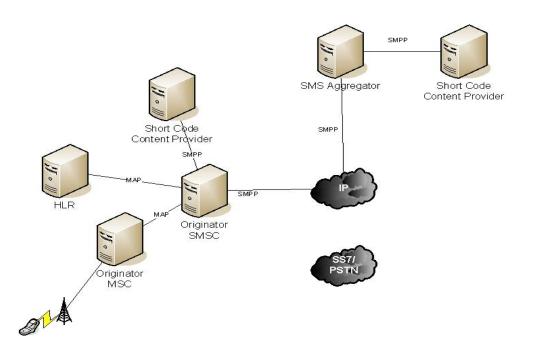


Figure 2. Path of Common Short Code Messages

Source: Used with permission from Motorola. See Figure 1 for acronym definitions.

"Vanity" CSCs are also available (for a higher price) — these CSCs use letters on a mobile device keypad to spell out words that are easy to remember and are chosen to reflect the service the short code is being used to access.² Furthermore, although CSCs can be "compatible" across all carriers, some CSCs are established as business partnerships between a specific carrier and another entity. For example, American Idol has an exclusive partnership with AT&T Wireless.³

² See [https://www.usshortcodes.com/csc/search/publicsearchCSC.do?method=showVanity & group=all] for examples of such codes.

³ See [http://www.americanidol.com/mobile/] for specific instructions.

Issues for Congress

For Congressional policymakers, the major issues that have arisen stem from what could be called "same problem, different platform." For example, issues such as consumer fraud and children's accessing inappropriate content, which have existed previously in the "wired world," have now found their way to the "wireless world."

Other issues stem from the difficulty in applying technical definitions to a given service, such as whether a text message is sent "phone-to-phone" or using the phone's associated e-mail address. For example, spam sent between two phones or from one phone to many phones does not fall under the definition of spam in the CAN-SPAM Act of 2003 (Controlling the Assault of Non-Solicited Pornography and Marketing Act, P.L. 108-187); but if that same message is sent from a phone or computer using the phone's associated e-mail address, it does.

Applicability of CAN-SPAM Act to Unwanted Wireless Messages

The CAN-SPAM Act was and is intended to curb the amount of spam that consumers receive in their e-mail accounts. At the time the Act was being considered in 2003, text messaging was in its infancy as a service. As discussed above, SMS messaging is not the same as messaging that uses a mobile phone's associated e-mail address (i.e., 2025551212@carrier.com). At this time, only the latter type of message is covered by CAN-SPAM; messages that are sent "phone-to-phone" through the SMSC are not.

There is no evident reason for messages that appear the same to a user and have the same effect on a user (generally, annoyance) to be treated differently under CAN-SPAM. Resolving this discrepancy in the treatment of these two types of messages would require a change to the statute.

Inability of Consumers to Disable Text Messaging

Some mobile service customers have expressed frustration to their Congressional representatives about unwanted text messages and the inability to selectively block or completely disable text messaging on their phones. While carriers generally offer a range of text messaging packages, for example, 500 messages for \$10, some customers do not use text messaging and, therefore, pay a small fee every time they receive a message. A number of user discussion sites contain posts from users who are frustrated with the extra charges they incur from unwanted messages.⁴ In December 2007, a class-action lawsuit was filed against T-Mobile in this matter.⁵

⁴ See, for example, Mobiledia Forum at [http://forums.mobiledia.com/ topic35359-0-asc-10.html].

⁵ RCR Wireless News, "Class Action Nails T-Mobile USA Over Texting Services," January 30, 2008, available online at [http://www.rcrnews.com/apps/pbcs.dll/article?AID=/

Most carriers offer some form of text blocking to their customers. A June 12, 2008, article by David Pogue in the New York Times⁶ outlined the various options being offered by different carriers. **Appendix 1** contains information from that article that may be helpful to consumers.

Given that carriers are beginning to offer various forms of text blocking to their customers, it may be advantageous to consumers to wait to see what options the different carriers develop. In that way, competition is given a chance to succeed in this area and carriers are offered the opportunity to assess what their competitors are doing and perhaps improve their own services. Eventually, however, Congress may wish to investigate whether customers are being offered the best possible options to assure that they are not receiving unwanted text messages.

Carrier Blocking of Common Short Code Messages

In September 2007, Verizon notified NARAL Pro-Choice America that it would not participate in its CSC program. NARAL does not charge for its messages and users may opt-in or opt-out as desired, but Verizon stated that it does not accept programs from any group "that seeks to promote an agenda or distribute content that, in its discretion, may be seen as controversial or unsavory to any of [its] users."⁷

This decision was immediately criticized by free-speech advocates, although communications scholars pointed out that the company most likely, from a legal standpoint, did have the right to refuse to participate in the program.⁸ Since text messages are not carried over the traditional telephone network, such messages are not protected under common carrier regulation. The next day, Verizon changed its decision and is now participating in NARAL's CSC program, saying in a statement that the decision had been "an incorrect interpretation of a dusty internal policy" that "was designed to ward against communications such as anonymous hate messaging and adult materials sent to children." The policy had been developed "before text messaging protections such as spam filters adequately protected customers from unwanted messages."⁹

⁵ (...continued)

^{20080130/}FREE/927035123/1005/rss01].

⁶ New York Times, "How to Block Cellphone Spam," by David Pogue, June 12, 2008, available online at [http://www.nytimes.com/2008/06/12/technology/personaltech/12pogue-email.html].

⁷ New York Times, "Verizon Blocks Messages of Abortion Rights Group," by Adam Liptak, September 27, 2007, available online at [http://www.nytimes.com/2007/09/27/us/27verizon.html].

⁸ New York Times, "Verizon Blocks Messages of Abortion Rights Group," by Adam Liptak, September 27, 2007, available online at [http://www.nytimes.com/2007/09/27/us/27verizon.html].

⁹ New York Times, "Verizon Reverses Itself on Abortion Messages," by Adam Liptak, September 28, 2007, available online at [http://www.nytimes.com/2007/09/28/business/28verizon.html].

This issue highlights the difficulty in applying the current regulatory structure to new services. While mobile providers appear to have the legal right to determine what information is available through their CSC programs, Congress may wish to consider whether and how political and other speech might be better protected in those programs.

Deceptive and Misleading Common Short Code Programs

Many third-party content providers use the CSC program and bill the usage through the mobile service provider. For example, content providers can allow mobile device users to download content (e.g., ringtones) or participate in SMS-based "chat." While most of these content providers are legitimate businesses, others use deceptive tactics to gain customers and run up unexpected charges.¹⁰

For example, as reported by CBS News in February 2008, some customers have subscribed to monthly services without reading the "fine print" and find that the charge is often difficult to remove because it is an independent third party rather than the customer's mobile service provider.¹¹

The Mobile Marketing Association has developed "Consumer Best Practices Guidelines"¹² that it expects its members to follow. This code includes limiting subscription periods to one month, after which consumers must re-subscribe, and providing alerts to customers when their chat-related charges reach \$25 increments. Although the best practices have not eliminated all misleading programs, over time the industry may bring its members into compliance. More clarity on industry efforts might allow policymakers an opportunity to assess the efficacy of those efforts.

Protecting Children from Inappropriate Content on Wireless Devices

As more mobile devices become equipped to access the World Wide Web and additional content services are made available via CSCs, the risk of children downloading inappropriate content will likely increase. While carriers may follow a set of voluntary guidelines¹³ to promote wireless safety for children, there is no way

¹⁰ See Class Action Connect online at [http://www.classactionconnect.com/ cell_phone_issues/category/complaints-in-the- news/] for examples of these types of complaints.

¹¹ CBS News, "Ringing Up Big Charges For 'Free' Tones," February 22, 2008, available online at [http://www.cbsnews.com/stories/2008/02/22/eveningnews/main3867197.shtml].

¹² This document is available online at [http://www.mmaglobal.com/bestpractices.pdf].

¹³ CTIA — The Wireless Association® has voluntary guidelines for wireless carriers to use in classifying content that they provide directly over wireless handsets. These voluntary guidelines apply only to content that you purchase from your wireless carrier, either on a one-time use or download basis, or as part of a package with a monthly fee such as ring tones, wallpaper, games, music, video clips, or TV shows. Content that is generated or owned by a wireless user, such as text messages, instant messages, e-mail (through chat (continued...)

to guarantee that children will not be able to access inappropriate content by circumventing carrier-implemented safeguards.

The following types of material can be downloaded on many wireless devices, and may include content inappropriate for children.

- Images, such as background "wallpaper" for the phone screen.
- Games, including some games that are also available for gaming systems.
- Music and songs, including ring tones, ringback tones, and downloads of full songs.
- Video, including certain television shows, movies, and music videos, as well as video programming specially made for, and only available on, wireless devices.¹⁴

The wireless industry is working to ensure that children do not access inappropriate information over their wireless devices, but there is no definitive research on the success of these efforts. Whether current efforts to protect children from inappropriate content over wireless devices may be an issue of interest to policymakers.

Mobile Cyberbullying

"Cyberbullying," harassing communications sent, for example, via e-mail or text messages or through social networking sites such as Facebook or MySpace, is a growing problem. The issue made national headlines in November 2007 after the suicide of Megan Meier, a 13-year-old Missouri girl. In that case, the mother of a former friend of Megan's set up a fake MySpace page, pretending to be a boy who had just moved to the area and was home-schooled. Within a few weeks of becoming "friends" with "Josh," on October 15, 2006, the tone of his messages changed drastically, with "Josh" saying he no longer wanted to be friends with

 $^{^{13}}$ (...continued)

rooms, message boards, etc.) and picture mail is not included in the wireless carrier's content classification system. Also, content that is accessed by surfing the Internet on a wireless handset is not currently included in the classification system. The guidelines urge carriers to provide separate Web filtering software for Web browsing services. Wireless carriers choosing to follow these voluntary guidelines agree to use at least two content ratings: (1) Generally Accessible or available to consumers of all ages; and (2) Restricted or accessible only to those age 18 and older or to those younger than 18 years old, when specifically authorized by a parent or guardian. The Restricted ratings system generally is based on or uses criteria under existing ratings systems for movies, television, music, and games. CTIA Guidelines are available online at [http://www.ctia.org/advocacy/policy_topics/topic.cfm/TID/36].

¹⁴ FCC Consumer Fact Sheet, "Protecting Children from Adult Content on Wireless Devices," available online at [http://www.fcc.gov/cgb/consumerfacts/protectingchildren.html].

Megan, because "he" had heard that she had been mean to some of her friends. On October 16, 2006, Megan hanged herself in her closet.

Although, as in the case described above, much cyberbullying takes place in the "wired" world, more recently, these sorts of messages are being sent from and to mobile devices. Since many mobile devices are capable of performing the same tasks as computers, these messages are now being sent via mobile instant messaging, the mobile websites of social networking sites, and text messaging.

The subsequent public outcry over the Megan Meier case led to four bills being introduced in the 110th Congress, three by Representative Linda Sanchez and one by Senator John Kerry; each contains language that would include the use of wireless devices in the definition of cyberbullying.

- H.R. 3577 was introduced on September 17, 2007, and referred to the House Committee on Energy and Commerce Subcommittee on Telecommunications and the Internet; no further action has been taken.
- H.R. 4134 was introduced on November 9, 2007; it was passed by the House on November 13, 2007, and referred to the Senate Committee on the Judiciary on November 14, 2007.
- H.R. 6120 was introduced on May 21, 2007, and referred to the House Committee on the Judiciary; no further action has been taken.
- S. 3016 was introduced on May 14, 2007, and referred to the Senate Committee on the Judiciary; no further action has been taken.

The bills are substantially similar. All would define cyberbullying to include "verbal, visual, or written psychological bullying or harassment by an individual or group, using an electronic device or devices including e-mail, instant messaging, text messages, blogs, telephones, pagers, and websites, to support deliberate, repeated, and hostile behavior that is intended to harm others." H.R. 3577, H.R. 4134, and S. 3016 would authorize \$5,000,000 for educational grants to carry out Internet crime prevention education programs from 2008 through 2012; H.R. 6120 would authorize \$10,000,000 for the time period 2009 through 2013.

Balancing User Privacy with "Sunshine," Open Government, and Freedom of Information Laws

Texas, Michigan, and New York have all begun exploring ways to apply open government laws to text messages. In Texas, a state judge ordered the city of Dallas to turn over e-mails and text messages sent by city officials as part of an ongoing investigation. Journalists in Detroit, MI, are awaiting a decision in a lawsuit against the city regarding text messages sent by elected officials in Detroit that indicate inappropriate conduct. In New York, legislators are working to revise the state's open records law to specifically add text messages to the list of documents covered.¹⁵

However, in one case, the courts have been applying a more stringent standard to allowing access to text messages by an employer. In *Quon v. Arch Wireless* (June 18, 2008),¹⁶ for example, employees sued their employer after they were fired for using their employer-provided mobile devices for personal communications. In that case, the court held that although a wireless device may be paid for by an employer, the employee still has a reasonable expectation of privacy and the service provider may not provide the content of messages to the employer without the consent of the employee. The defendants (in this case, the employer) have stated that they are likely to appeal the ruling.

Since lower courts have reached different conclusions about this topic in their decisions, further judicial action is likely over the next few years.

Using SMS to Support Law Enforcement and Emergency Response

In April 2008, the FCC adopted rules for delivering emergency text messages to the public during emergencies and natural disasters¹⁷ and recommended that the Federal Emergency Management Agency (FEMA) should be the program's aggregator. The program was mandated by the Warning, Alert and Response Network Act that was signed into law in 2006.¹⁸ Under this law, the FCC was required to develop plans for a commercial mobile-alert system through which wireless carriers would voluntarily transmit text messages sent out by the government. The FCC has divided the types of messages the government will send out to mobile-phone users into three broad categories:¹⁹

¹⁵ "Battle Over Public Information Expands," by Ledyard King, Federal Times, March 24, 2008, p. 14.

¹⁶ Quon v. Arch Wireless, Ninth Circuit Court of Appeals, No. 07-55282, June 18, 2008. The opinion is online at [http://www.ca9.uscourts.gov/ca9/newopinions.nsf/D2CDDB4098D7AFB28825746C0048ED24/\$file/0755282.pdf?openelement]. Discussion of this case is available from the Electronic Frontier Foundation, a privacy-rights group, at [http://www.eff.org/deeplinks/2008/06/new-ninth-circuit-case-protects-text-message-priva].

¹⁷ Federal Communications Commission, In the Matter of the Commercial Mobile Alert System, First Report and Order, FCC 08-99, PS Docket No. 07-287, April 9, 2008, available online at [http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-99A1.pdf] ("Commercial Mobile Alert System, First Report and Order"). See also, FCC Adopts Rules for Delivery of Commercial Mobile Alerts to the Public During Emergencies (FCC 08-99), April 9, 2008, available online at [http://hraunfoss.fcc.gov/edocs_public/attachmatch/ FCC-08-99A1.pdf].

¹⁸ Warning, Alert, and Response Network Act, Title VI of the Security and Accountability for Every Port Act of 2006, P.L. 109-347, 120 Stat. 1884 (2006).

¹⁹ Commercial Mobile Alert System, First Report and Order, paras. 26-32.

- Presidential Alerts deal with national emergencies and will take precedence over any other impending alerts
- Imminent Threat Alerts deal with emergencies that may pose an imminent risk to people's lives or well-being.
- Child Abduction Emergency/AMBER alerts will be related to missing or abducted children.

In addition, the FCC says that all subscribers with roaming agreements will receive timely alerts "provided the subscriber's mobile device is configured for and technically capable of receiving alert messages from the roamed upon network."²⁰

The architecture adopted by the FCC calls for a centralized alert-aggregator where federal and state emergency-response agencies would send their warning messages to be authenticated and dispersed to the appropriate participating commercial mobile services. Noting FEMA's role in developing the proposal for the adopted architecture, the FCC recommended the agency as its first choice to serve as the alert aggregator. Thus far, however, FEMA has not agreed, and has argued that it is limited in its statutory authority from serving in such a role.

In its order, the FCC said that it was "hopeful that any bars that prevent FEMA or some other entity within Department of Homeland Security (DHS) from fulfilling these roles will be lifted expeditiously," and urged Congress to give FEMA a central role in the emergency Short Message Service program. The FCC said that if FEMA did not take responsibility for being the alert aggregator, another entity within DHS or the National Oceanic and Atmospheric Administration should be assigned the responsibility.²¹

T-Mobile, Verizon, Sprint Nextel and AT&T all stated that they would be likely to opt into the alert system.²²

This program's implementation will require that an appropriate central aggregator take charge of the execution of this program. FEMA's assertions that it is limited in its statutory authority from accepting this responsibility could make this a legislative issue.

Congressional and Industry Response to SMS-Related Issues

The issues discussed in this report have prompted different levels of response from Congress and the wireless industry:

²⁰ Commercial Mobile Alert System, First Report and Order, para. 79.

²¹ Commercial Mobile Alert System, First Report and Order, para. 18.

²² FCC Approves Emergency Alert Text-Messaging System, CNN.com, April 10, 2008, available online at [http://www.cnn.com/2008/TECH/04/09/fcc.cell.phone.alert/].

- Issues that are being addressed by industry, so policymakers may wish to wait and see how those efforts play out;
- Issues that have not risen to a level of priority in Congress, but would require statutory action to effect change; and
- Issues that have triggered a legislative response.

As wireless communications technologies, and the issues that accompany them, evolve over time, so likely will the approaches that industry and Congress will take to ensure consumer safety and satisfaction.

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Appendix A. Text Blocking with Selected Major Carriers — Information for Consumers

AT&T. Customers must log in at mymessages.wireless.att.com. Text-blocking and alias options are available under "Preferences." Messages from specific e-mail addresses or Web sites can also be blocked from this page.

Verizon Wireless. Customers must log in at vtext.com. Text blocking options are available under "Text Messaging"/"Preferences." Select "Text Blocking." Consumers may block text messages from e-mail or from the Web, including blocking specific addresses or Web sites.

Sprint. Customers must log in at www.sprint.com. Sprint does not offer auto-blocking, but consumers can block specific phone numbers and addresses. On the top navigation bar, select, "My Online Tools"/"Communication Tools"/"Text Messaging." On the Compose a Text Message page, under Text Messaging Options, select "Settings & Preferences." In the text box, customers can enter a phone number, e-mail address, or domain name to block.

T-Mobile. Customers must log in at www.t-mobile.com and select "Communication Tools." T-Mobile doesn't yet offer a "block text messages from the Internet" option. Customers can block all messages sent by e-mail, though, or permit only messages sent to the phone's e-mail address or alias, or create filters that block text messages containing certain phrases.²³

²³ "How to Block Cellphone Spam," NYTimes.com, Pogue's Posts, June 12, 2008, available online at [http://pogue.blogs.nytimes.com/2008/06/12/how-to-block-cellphone-spam/?scp=1&sq=Text%20Blocking&st=cse].