Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Fostering Innovation and Investment in the Wireless Communications Market	)	GN Docket No. 09-157
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	)	
A National Broadband Plan For Our Future	)	GN Docket No. 09-51

To: The Commission

COMMENTS OF AMERICAN MESSAGING SERVICES, LLC

American Messaging Services, LLC ("American Messaging") hereby submits these comments in response to the Federal Communications Commission's (the "Commission") Notice of Inquiry[1] issued in the above-referenced dockets. There has been and continues to be substantial innovation in the wireless messaging marketplace. American Messaging is at the forefront of this innovation, using advanced messaging technologies to provide superior emergency mass alert services in support of public safety and to offer intelligent remote control services to assist in the management and preservation of energy resources. Unlike other wireless networks, the narrowband data networks used by messaging providers are uniquely positioned to provide immediate primary mass alert notification services to the public safety community and to the public. As the Commission moves forward with this proceeding to consider adopting regulations or policies to foster innovation in the wireless marketplace, it should be mindful that narrowband data providers continue to innovate in order to improve the services offered to consumers, and to address the important needs of public safety and energy conservation, and should ensure that any regulations or policies ultimately adopted foster innovation across all wireless industry sectors, including narrowband data.

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[1] *Fostering Innovation and Investment in the Wireless Communications Market; A National Broadband Plan For Our Future*, Notice of Inquiry, GN Docket No. 09-157, GN Docket No. 09-51, FCC 09-66, rel. Aug. 27, 2009 (the "NOI").

Introduction

American Messaging is the second largest messaging and paging services provider in the United States with 1.2 million customers. American Messaging operates over nationwide frequencies in addition to numerous local frequencies with coverage in 98 of the top 100 major metropolitan areas and in all 50 states. American Messaging offers a variety of services to meet the narrowband data needs of organizations of all sizes. Its services range from traditional paging to innovative products and services over its narrowband data spectrum to facilitate the management of energy resources and to improve public safety communications.

American Messaging commends the FCC for initiating this inquiry into innovation within the wireless marketplace. American Messaging supports the approach taken in the NOI, in which the Commission seeks information on how innovative wireless services are being used to foster energy management and public safety, along with feedback as to how the Commission should measure and continue to promote innovation in the wireless sector. Only after understanding the current status of innovation can the Commission effectively design the means to encourage future investment and innovation.

The Messaging Industry Has a Long History of Innovation

The messaging industry has a long history of innovation. Commercial wireless messaging services were first allocated for assignment by the Commission in 1949.[2] Those services represented the first wireless communications services made available to the public on a large-scale basis at affordable prices. While competition from cellular service wouldn't be introduced into the marketplace for another four decades, there were numerous paging companies competing for customers. In response, paging companies actively expanded their

[2] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services,* Thirteenth Report, WT Docket No. 08-27, DA 09-54 (WTB, rel. Jan. 16, 2009) ("Thirteenth Competition Report"), ¶ 98, p. 52.

service offerings to respond to consumer demand. Basic offerings of one-way numeric paging services were improved to include alpha-numeric paging and two-way paging services. Local paging operators entered into time-sharing and traffic exchange agreements to expand the geographic areas in which their customers could receive service. At the same time, carriers continued to secure licenses and to construct networks over broader geographic areas. With the advent of market-based licensing for paging and narrowband Personal Communications Service ("PCS") spectrum in the mid-to-late 1990's,[3] paging carriers were able to more effectively and efficiently build-out their networks with fewer administrative and licensing delays. Ultimately, localized paging service offerings were complemented with regional and nationwide plans.

With the introduction of cellular service in the mid-1980's and Personal Communications Service in the early-1990's, further competition was introduced into the messaging marketplace, since cellular and broadband PCS operators were offering Short Message Service ("SMS") and text messaging in addition to their voice telephony services. As prices fell for cellular and PCS providers' voice and messaging packages, those offerings became increasingly competitive with those of narrowband data service providers, which traditionally had been characterized by much lower prices. Messaging providers continued to respond to the ever-increasing level of competition by focusing on the distinct characteristics of messaging networks, which make them particularly well-suited to provide public safety services, energy resource management services, and e-commerce and Machine-to-Machine ("M-to-M") services.

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[3] *Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, and Implementation of Section 309(j) of the Communications Act – Competitive Bidding,* Second Report and Order and Further Notice of Proposed Rulemaking, 12 FCC Rcd 2732 (1997); *Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, Third Report and Order, 9 FCC Rcd 2941 (1994).

Narrowband Data Networks Are Uniquely Positioned to Offer Innovative Mass Alert Notification Services to the Public Safety Community and the Public

The NOI seeks comment on how innovative uses of wireless communications have improved public safety and homeland security communications.[4] Narrowband data networks are uniquely well-positioned to provide time-critical mass alert services. As described more fully in the next section, American Messaging is presently using its narrowband data network to provide immediate, real-time or near real-time emergency mass alert services, which public safety officials and others are using as their primary mass alert notification tool.

Emergency situations are ones in which there is a high probability of injury or loss of life from immediate circumstances. In those situations, immediate and effective mass alert systems are crucial. An effective primary mass notification system must have the ability to notify all of those affected in real-time or very near real-time, and provide clear instruction on what they are supposed to do. The system should also have the capability to deliver an "all clear" message when the threat is over. The nine major features of effective primary alerting systems are:

- Speed – time from dispatch of message to device should be counted in seconds.
- Sound – system should provide unmistakable audible alerting (*e.g.*, horns, sirens) followed by clearly understood speech relaying the alert.
- Sight – system should include visual text messages in multiple locations.
- Location – system should be capable of delivering both audible and visual alerts in buildings and outdoor areas over a potentially vast geography.
- Repeatable – should be capable of delivering dynamic follow up information.
- Simple – system should be able to be operated intuitively by persons under extreme stress.
- Reliable – system should use well proven technology with few routing points.
- Affordable – true mass emergencies are rare; the system cost cannot outweigh the benefit.
- Simultaneous – everyone must receive the information at the same exact time.

Alerting systems that can accomplish the above will for the most part utilize digital wireless technology by which a dispatcher initiates a message that is transmitted to any number

[4] NOI at ¶ 19.

of devices located in the effected geographic area. Messaging networks are uniquely well-equipped to provide this type of primary alerting service because they can initiate an audible alert (*e.g.,* siren, horn), supplement that alert with a visual text message and audible verbal message, and also provide mass textual alerts to tens of thousands of messaging devices simultaneously because those messages are broadcast over the messaging carrier network. In the case of large areas such as university campuses and municipalities, messaging technology is the only practical, cost effective method of delivering those messages.

A typical alert system using a messaging network consists of a transmitter, antenna, and user software. The software can reside on a dedicated personal computer or on the existing computer system used by the dispatch center. The software program allows the dispatcher to send the alert information to the transmitter where it is then broadcast to the end point devices. The service is simple to use, sends messages over a proven reliable messaging system capable of delivering tens of thousands of messages simultaneously, and is cost-effective.

In contrast, software-based alerting methods that use public communications mediums and attempt to reach citizens through cell phones, email, landline phones, and local television and radio alerts are not an effective method for primary alerting because of the inherent delays in information delivery and the inconsistency of end user device availability, and are effective only as a means of "secondary" notification in conjunction with a broader alert program. These various methods differ greatly in the time that is required for the message to be delivered and in the "hit rate" of those that receive the message. While secondary alerting allows people that are not in the immediate area of the emergency to be informed of the event, the user of these types of systems cannot control the process, and therefore the speed at which the messages are delivered and the hit rate of delivered messages are always an unknown. Secondary methods are by their

characteristics a shotgun approach to alerting – the user sends out a large number of messages, and hopes that a reasonable number of them get through to the end recipient in time.

These types of secondary notification systems rely on software that contains a database into which the user enters the relevant contact information of prospective end recipients. In an emergency, the user can pull up desired recipients from the data base, enter a specific message and then "send" the messages to the recipients. When the "send" button is clicked, the software begins the process of delivering the emails to the Internet, and the text messages to the various cell phone providers. These software programs were originally designed for relatively small groups (1,000 or less) often receiving non emergency messages, but are now being marketed for very large group applications in emergency situations, and suffer from significant limitations:

- Reliance on outside systems – The software simply sends messages to various third party systems, whose reliability at any given time is unknown and outside of the user's control.
- Slow delivery – Even under the best conditions, large batches of messages will take significant time to be delivered. It is not possible with current technology to batch out bulk text messages to cell phones and PDA's. It is still essentially a serial process. A university or small municipality can easily have 30,000 or more persons that need notification. Larger schools may have 60,000 or more. In today's world of text messaging it is lucky if a major system can reliably send out 10 messages per second in a given geographic area. Assuming that a given cell system may have to handle 25,000 messages, that provider alone can take 25 minutes to deliver those messages. That lag time does not include the software itself, which must batch and deliver messages to the providers. In sum, under the best conditions, one can expect a minimum of 30 minutes before a large batch of messages is delivered.
- Ongoing Data Base Management – For the software solution to have benefit, it must have a relevant database of recipients. In the case of a university of 30,000 students one can reasonably assume that between students, faculty and employees there will be a turnover of approximately 10,000 recipients per year. This will require the manual entry of 10,000 new recipients and the judicious deletion of 10, 0000 others. On top of this is the changes to existing recipients if they change phone providers or email accounts. Even systems that require the end recipients to opt in and enter their information themselves will still need the administrator to delete that information when they have left the area. If deletions are not kept current, the data base will balloon in size over just a couple of years and dramatically slow the delivery process. Database management is a recurring cost of a software-based solution.
- Fractional alerting – When sending alerts using text massaging or emails, the user has no control over or knowledge of how many people receive the message. For example, if an intended recipient does not open their email box or look at the text message they will not know of the emergency. If a professor has a classroom policy that all phones be turned off,

then no one in that auditorium will be alerted. If the emergency message is sent in the middle of the night it is very likely that few will see it.

- Significant potential for hacking – Software programs that allow for mass messaging are available to anyone. It is a very real possibility that a malicious event could take place whereby a criminal develops a data base of recipients in a given area. False or misleading information can then be sent to large numbers of people that at best is a terrible prank or at worse is a foil to aid a much larger criminal act. If text messaging is an institution's primary alerting tool, their intended recipients become highly vulnerable to a criminal hack.

American Messaging Provides Innovative Solutions for the Public Safety Community and for Energy Resource Management and Preservation

American Messaging is at the forefront of innovation in the narrowband data services market sector. The company offers one- and two-way numeric and text paging services and advanced two-way messaging service (allowing customers to send and receive e-mail messages using their advanced two-way pagers), and uses FLEX and ReFLEX technology on its 900 MHz network to provide greater in-building coverage where other wireless technologies may not. American Messaging also provides emergency mass alert notification services and M-to-M services that may be used to manage and conserve energy resources.

American Messaging provides a unique mass emergency alert and communication system, the IntelliGuard Program, using the RAVEN suite of products, which work with American Messaging's vast messaging network to provide simultaneous emergency communications to large groups of users. American Messaging's RAVEN emergency alert system provides two components of notification simultaneously. First, the RAVEN system provides immediate broad-scale alerts and updates *via* RAVEN-500 and RAVEN*Alert* devices. The RAVEN-500 is a high decibel warning system that can be used indoors or outside. Using American Messaging's network, signals are sent to the RAVEN-500 to activate its horns or additional features such as strobe lights or digital message signs that may be added for visual alerting. The RAVEN-500 can be used in such settings as public parks, factories, large retail facilities, school campuses, athletic fields, public beaches, golf courses and resorts, or any other public place in which

immediate mass notification of impending emergencies is necessary. The RAVEN*Alert* is a compact emergency alerting station. When activated by the American Messaging network, it emits a loud tone followed by a voice message relaying the emergency notification. The voice message is made possible by state of the art text-to-voice technology allowing displayed messages to be converted to understood speech. Simultaneously, the text of the emergency message is displayed on an LCD screen. Attention is brought to the screen by a flashing red LED as well as flashing backlighting. The audible and visual text, along with audible tones and flashing lights, allow the RAVEN*Alert's* warnings to be received by both hearing- and visually-impaired users. The RAVEN*Alert* is equipped with an external drive so larger digital signs may be attached to the system. The RAVEN*Alert* is ideal for use in any public space where immediate notification of people who may be in harm's way is paramount (*e.g.,* schools, hospitals, hotels, municipal buildings), and may be mounted to vehicles such as ambulances, fire and EMS vehicles for mobile use.

The RAVEN system also provides individual alerts and updates. Using the messaging network architecture, the RAVEN*Alert* device can simultaneously notify recipients of a pending disaster or other emergency situation in less than one minute and to "geo target" messages to specific locations affected by a particular event. Each RAVEN*Alert* device can be programmed with as many as 42,000 common addresses, or groups, and each group or RAVEN*Alert* device programmed with that common address – regardless of the number of devices – will simultaneously receive messages sent to that common address. This delivery system is superior to that of other carriers, whose networks deliver messages sequentially.

American Messaging also provides firehouse alert and control services which enable fire stations to control up to four devices at once, and simultaneously delivers alphanumeric text messages to digital signs or serial printers. Using American Messaging's network, a paging cap

code is sent to a FAC-4 device from 911 dispatches. The FAC-4 sends signals to activate the other device operations, which frequently include turning on the Public Address amplifier, audible wake-up alarm and the lights, and turning off the firehouse stove. The FAC-4 can accept up to 7 different paging cap codes, and have separate relay and time functions per cap code. This allows for different alerting to be accomplished at the same physical location depending on which cap code is sent, which is helpful when fire and medical crews are housed in the same building. Group call capability allows for multiple fire stations to be alerted at the same time when necessary. The FAC-4 device also is compatible with the RAVEN products and software.

Local government and public safety officials also can use American Messaging's services to control traffic lights, school lights, traffic information signs, Amber Alert and other signs. In addition, American Messaging also provides M-to-M services that provide customers with Intelligent Remote Control ("IRC") capabilities. American Messaging's customers can use IRC to control utility meters (*e.g.,* turning power on and off), control energy consumption (*e.g.*, by controlling major power usage devices like HVAC units), reduce and manage peak energy loads (*e.g.,* by controlling residential and light commercial thermostats), and to actively manage power grid efficiency from a central location in real-time with capacitor bank control units.

The Commission Should Consider the Impact on Messaging Providers of Regulations or Policies Adopted to Foster Continued Innovation

The narrowband data marketplace has been a source of innovation for decades. However, the NOI mentions paging and messaging services only once – in a reference to the small number of mobile wireless applications that were available in the last decade.[5] American Messaging respectfully submits that, as the Commission moves forward with this proceeding, it should consider the impact on narrowband data service providers of any proposed regulations or policies that are intended to promote investment and innovation.

[5] NOI at ¶ 57.

Messaging service providers operate on narrow profit margins and generally have less capital available per customer than other commercial operators in the wireless sector. The Average Revenue Per User ("ARPU") associated with messaging services has historically been substantially lower than the ARPU associated with other commercial mobile services. It is therefore critical for messaging operators to remain efficient and to continue to innovate to provide services on a cost-effective basis in order to continue to compete both within the narrowband data sector and with the messaging services offered by mobile telephony providers.

The imposition of regulation necessarily imposes costs on carriers. In some instances, those costs may result in a disproportionate impact on narrowband data service providers, because there are base-level compliance costs that cannot be avoided, and those costs may represent a larger portion of the margins of messaging providers as compared to those of other wireless carriers. It is in this respect that regulations or policies which are intended to promote innovation may actually have the affect of stifling or delaying it in the narrowband data sector, because they place too heavy an economic burden on messaging service providers. American Messaging respectfully requests that the Commission seek to promote innovation by all participants in the wireless marketplace, including narrowband data providers, in any regulations or policies it may propose for consideration in future stages of this proceeding.

Respectfully submitted,

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