Untangling the World of Wireless Messaging

As messaging and wireless booms converge, service providers seek the best technology available to overcome hurdles.

By Larry Frank, Mirapoint, Inc.
Wireless messaging has promised to make life easier for everyone &#151 everyone, that is, but wireless service providers. They are faced with the challenge of squeezing the full power of the wired world into tiny unwired devices for the convenience of the masses demanding access to messages anywhere and everywhere.
And they are expected to accomplish this during a time when both the number of wireless subscribers and messages are exploding. According to Merrill Lynch, the number of worldwide wireless subscribers is forecasted to reach one billion by late 2001, and almost double again, reaching 1.8 billion by 2004. By 2004, more than 65 percent of those wireless subscribers are expected to use mobile messaging. Furthermore, Mobile Lifestreams reported recently that global short message service (SMS) volume is predicted to grow from 40 billion in 2001 to 70 billion in 2004.
Messaging growth is also remarkably strong. The messaging software market for service providers is expected to grow at a rate of 61 percent per year to reach $1.7 billion by 2004 according to a report by the Radicati Group. As the messaging and wireless booms converge, service providers are discovering that wireless messaging support is fraught with many obstacles and are scrambling for the best technology available to overcome these hurdles. What are some of these challenges that are impeding wireless messaging growth? Most importantly, what can service providers do to overcome them?

Challenges of Wireless Messaging

One of the greatest challenges of offering wireless messaging access is that wireless communications introduces another protocol language on top of the traditional Internet protocol languages, Hypertext Markup Language (HTML) and Hypertext Transfer Protocol (HTTP). In order to bring message content to wireless devices, the text must go through an additional Internet Message Access Protocol (IMAP) translation gateway for Wireless Access Protocol (WAP) and Wireless Markup Language (WML). Consequently, current wireless e-mail implementations require two gateways, an IMAP gateway that translates messages from HTML and HTTP and a WAP gateway that translates HTTP to WAP. This is often a costly prospect that can compromise the overall efficiency of the messaging system.
Another challenge for wireless connectivity today is that of low bandwidth connections. Accessing, sending and managing messages, especially those with large attachments, often require more reliable and more robust connections than current wireless technology can support. Most messaging solutions were designed

to provide messaging to the desktop and assume that there is a high, uninterrupted bandwidth connection. In addition, current deployments do not provide adequate storage configurations to handle messaging access from wireless remote devices. Storage is usually managed by the local Post Office Protocol (POP) server that downloads everything to a personal computer. The end result is messages that are painfully slow to retrieve and difficult to manage over wireless devices.

Perhaps the most disturbing of all challenges facing wireless messaging is that of security. Wireless access to messaging increases security risks to networks, no small consideration for companies who must protect mission critical information that resides within their systems. Wireless access increases the amount of information in transit between systems and leaves vulnerabilities where hackers and viruses can infiltrate the system and exploit sensitive information.

Complicating the situation for wireless messaging providers is that of emerging standards. While WAP is the accepted protocol language for wireless in the United States and Europe, iMode, a proprietary deployment by NTT DoCoMo, has become widely deployed in Japan. There is even some talk that iMode will replace WAP stateside. In fact, in November of 2000, NTT DoCoMo and AT&T announced a strategic alliance that seems to substantiate the belief that WAP may not be the enduring standard.

Building a Tangle-Free System

In the face of these challenges, wireless service providers should reevaluate their existing messaging infrastructures. The right choice can be the difference between being one of the first providers to profitably meet wireless customer demand or staying behind and waiting for everyone else's technology to catch up.

Fortunately, there is now a choice in the messaging marketplace between two philosophies, purpose-built messaging appliances or messaging applications that reside on general-purpose systems. In comparing the two, many wireless service providers are determining that purpose-built messaging solutions offer the best options to handle the complexities of wireless messaging.

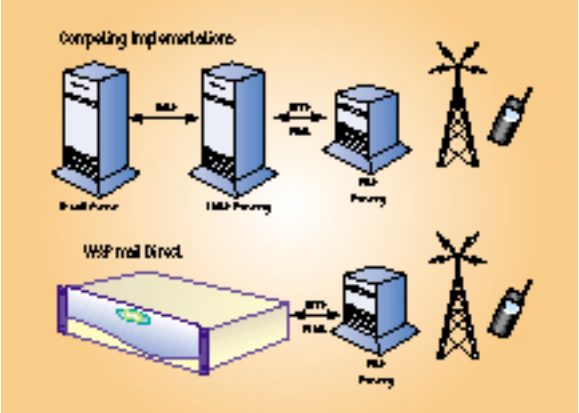
Breaking Through the Gateway

The IMAP gateway presents some cumbersome obstacles to wireless service providers. One of these obstacles is cost. Because the translation from wired to wireless protocols traditionally requires two IMAP gateways, it costs more to handle wireless messaging. IMAP gateways can only handle a certain number of open simultaneous connections. This limits the number of users that can access the system at one time. Consequently, the scalability of the overall system is limited &#151 meaning additional equipment must be purchased, maintained and managed.

Complexity is another aspect of IMAP gateways, administrative complexity as well as more complexity on the side of the end user. Additional setup, configuration and monitoring is required to manage the IMAP gateway with messaging applications that reside on general-purpose servers. Also, there are often separate wireless and Web mailboxes in typical messaging systems. Not only does this mean more equipment for the service provider to maintain, but it also means that users must constantly forward their messages back and forth in order to synchronize their inboxes.

However, the new purpose-built messaging appliances now on the market do not require a second translation gateway. These appliances are designed to access messages directly off of the server using native HTTP rather than IMAP. As a result,

the message is stored and presented in a format that wireless devices can recognize and display right off the server without protocol translation. This eliminates the need for IMAP gateways. All that is needed is the WAP gateway that typically resides in the central office of the wireless carrier.



Bridging Bandwidth Gaps

Messaging has relied on high-bandwidth connections because most messaging solutions were designed to provide messaging to desktops where high bandwidth connections are more reliable. With the advent of wireless messaging, bandwidth has become more of a concern.

Messaging appliances are designed to handle just messaging. They do not have the additional overhead, translation requirements and inefficiencies that general-purpose servers have which require higher bandwidth connectivity. The elimination of the IMAP gateway plays a large part in streamlining messages for easier transport over smaller bandwidth connections. Also, purpose-built messaging systems are specifically designed to accommodate multiple types of access devices such as wireless phones and PDAs. The information is presented in the format that best matches the network device available at the time a message is being retrieved. This ensures that messages are sent and retrieved as efficiently as possible eliminating much of the bandwidth concerns.

Securing the Wires

A vaster, more populated Internet has already heightened security concerns. Now with wireless messaging, there is concern that messaging systems are even further exposed to potential security problems over wireless connections. Wireless messaging means more data is moving through numerous lines and connections where locations can not be controlled.

General-purpose messaging applications can leave entire networks vulnerable to hackers because they typically have unused ports for additional applications where hackers can infiltrate a system. Furthermore, information is vulnerable as it passes through the Internet if the messaging system does not employ encryption capabilities on the receiving end as well as the sending end.

Purpose-built messaging solutions are ideal for the wireless messaging situation. Because it is dedicated to messaging, there are no unnecessary ports that leave security openings. It also employs encryption capabilities on both the recipient and sender ends, making e-mails impenetrable as they pass through the Internet to their destinations, no matter how remote those destinations may be.

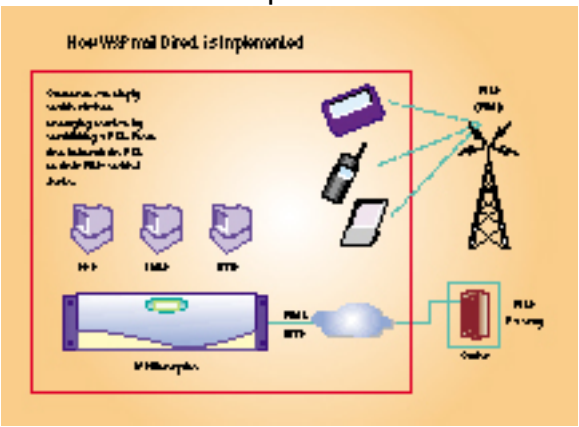
Furthermore, messaging appliances have the intelligence built within to know when vulnerabilities have occurred within the network. It can detect virus problems or the

fact that the system is overloaded and alert the administrator to the problem before the system shuts down. All of the administrative commands are controlled from a central location so repairs need to be made to only one piece of equipment rather than an entire system.

Sorting Through the Standards

Up until now, it has been difficult for service providers to know the best equipment to invest in with the understanding that in the not too distant future that equipment could be rendered obsolete with the emergence of a new standard.

Messaging-specific appliances have the flexibility necessary to adapt to new and changing standards if need be. Not only changing a messaging specific appliance from one protocol to another would be possible, it would be easy to deploy. With the flip of a switch, the new standards could be activated with few other adjustments. The entire system does not need to be overhauled and the initial equipment investment is kept intact.



Moving Forward Now and Into the Future

Wireless messaging is facing many challenges and has been experiencing many growing pains as it is rolled out to an impatient public ready to stay connected anywhere and everywhere at any all times. However, the technology to support the explosion in the converging wireless and messaging industries is quickly becoming available.

Messaging-specific appliances are one giant step in the right direction. They will be able to provide the infrastructure necessary to keep up with the emerging and quickly changing wireless messaging market. They have the flexibility to handle whatever protocols shake out to be the standard, the scalability to keep up with the unknown numbers of users providers must be prepared to support, and the security to handle a more vulnerable messaging environment.

One of the greatest advantages that messaging appliances give the world of wireless messaging is the elimination of the IMAP gateway. That factor alone makes purpose-built messaging a tailored solution to the complex demands of wireless communications. It means that wireless messaging can be easily deployed and easily utilized by service providers and wireless carriers looking to offer the best, most innovative services available.

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