

ways do services offered over 1xRTT and GPRS networks differ from those offered over 2G networks?

70. In addition to requesting comment on mobile data services generally and the economic relationship between these services, we also seek information related to specific mobile data services.

(a) Paging

71. Traditional paging service consists of a one-way data communication sent to a mobile device that alerts the user when it arrives. The communication usually consists of a phone number for the user to call, but could also contain a short text message or information update. As discussed in the various *CMRS Reports*, the number of subscribers to traditional one-way paging services has been declining over the past few years. In addition, all of the major paging carriers have filed for bankruptcy reorganization over the past two years. Do commenters foresee continued demand for one-way paging services? If so, who are the major purchasers of one-way paging services? What specific advantages do one-way paging services offer for these consumers versus other services? How many paging subscribers also own a mobile telephone?

(b) Web Content

72. As explained in the *Sixth and Seventh Reports*, mobile web browsing services allow users to access content from the World Wide Web on a mobile device. The web browsing services offered can vary by provider and by device in both the type and amount of content that users can receive. For example, mobile web subscribers using laptops may be able to connect to any web page and view graphical content, while users accessing the web from a mobile telephone handset may be able to view only a limited number of text-based web pages that have been redesigned for mobile devices. Furthermore, some carriers limit the web sites that users can access to those with which they have a content agreement.

73. We invite commenters to address the extent to which users have a choice of which content they receive. Can users of mobile web services access any web site, only those have been re-designed for access on mobile device, or only those with whom the carrier has a content agreement? Approximately how many web sites have been specially designed for use on a mobile device?

74. Have there been any notable technological developments in the past year that have facilitated a greater

availability of mobile web browsing services?

(c) Text Messaging

75. As mentioned in the *Seventh Report*, SMS provides the ability for users to send and receive text messages to and from mobile devices with maximum message length ranging from 120 to 500 characters. We seek data on the growth rate of SMS in the United States over the past several months. How many SMS messages have been sent in the United States over time?

76. Furthermore, as of mid-2002, most of the major mobile telephone carriers had introduced the ability to exchange text messages with subscribers on other carriers' networks. We seek information on how this intercarrier interoperability has affected SMS adoption rates and the volume of SMS traffic.

77. In addition to offering SMS, some carriers offer IM services. Instant messaging services, such as AOL Instant Messenger ("AIM") and MSN Messenger, enable users to send and receive messages within a community of users, creating a chat-style atmosphere, whereas SMS is a communication between two individuals. From their mobile devices, AIM users are able to tell whether or not someone from their "buddy list"—a list of other AIM users with whom the initial user communicates—is online. In addition, AIM users can communicate with their buddies regardless of whether they are on a desktop computer or a mobile telephone. AT&T Wireless, Sprint PCS, T-Mobile, and Palm have offered AIM to their users, while Verizon Wireless and Cingular Wireless have offered MSN Messenger. Unlike with SMS, open access or interprovider interoperability is not available with IM services; AIM users cannot exchange messages with users of MSN Messenger. To what extent have these access and interoperability issues affected demand for instant messaging services in the mobile data sector?

78. As mentioned, the Commission invites comment of the extent to which the various mobile data services compete with each other. In particular, we ask to what extent text messaging and e-mail are substitutes for each other. In what ways do the features and capabilities of the two services vary?

(d) E-mail and Corporate Server Access

79. As discussed in the *Seventh Report*, a variety of services are available to consumers that allow them to receive e-mail messages while mobile from an existing home- or work-based e-mail account. We seek information from commenters on the specific capabilities

of these various mobile e-mail services. To what extent are features such as forwarding and deleting integrated with consumers' other e-mail accounts? Are users able to view attachments? In addition, we seek information on the specific capabilities of services that allow users to access corporate intranets or files stored on corporate servers from a mobile device.

80. With regard to both types of services, we seek information on how much data or content a user can download, and how quickly and reliably. Furthermore, are these services secure? What level of security and/or encryption is offered by these various services?

iii. Devices

81. Mobile data services, and in particular mobile Internet services, are offered on a variety of end-user devices. Which devices are used most for mobile Internet access? Furthermore, do any of the features of mobile data devices—such as battery life, data storage capacity, and screen size—constrain the ability of users to access mobile Internet services, and therefore limit the demand for such services? Which features on which devices might limit mobile Internet access the most?

iv. Subscribership

82. In addition to seeking information on the capabilities of the various mobile data services discussed, we also request data on the number of subscribers to and users of mobile Internet services. How many people in the United States subscribe to or use any type mobile Internet service? Do most mobile Internet users also subscribe to mobile telephone service? How many people use the different types of mobile data services, including paging, SMS, IM, web browsing, e-mail, and corporate server access? In the *Seventh Report*, we used NRUF data to estimate the number of paging subscribers at the end of 2001. Do commenters agree that this is a reliable method for calculating the number of subscribers to that particular service?

83. How many people subscribe to or use higher-speed mobile Internet services provided over 1xRTT and GPRS networks? How does subscribership to the various mobile data services vary by geographic region and among various demographic groups?

v. Service Availability

84. In preparation for the Eighth Report, we request information on the availability of mobile data services offered over 2G mobile networks, as well as higher-speed mobile data