

segments? The *Seventh Report* discusses “mobile virtual network operators” (“MVNOs”) that are a type of reseller that focuses on brand development, with the intent to offer a niche product and to have better customer retention. An example of an MVNO is Virgin Group LLC (“Virgin”). Virgin has an arrangement with Sprint PCS whereby Virgin markets prepaid mobile telephone service using Sprint PCS’s network. We ask for comment on how this resale model has affected the provision of resale services. We also ask for information about companies that have employed the MVNO resale model since the *Seventh Report*.

ix. International Developments

58. The *Seventh Report* compared the mobile telephone sectors in the United States, Western Europe, and parts of the Asia-Pacific by examining a number of performance measures, including penetration levels, subscriber growth, MOUs, and pricing. The scope of international comparisons in the *Seventh Report* and previous *CMRS Reports* has been constrained by the availability of comparable international data. For the purposes of the Eighth Report, we seek data to update and possibly expand upon these international comparisons.

59. The international comparisons in the *Seventh Report* were based on various sources of data that were generally current as of the second half of 2001. We request suggestions on sources of data for updating international comparisons of penetration levels, subscriber growth, and usage for the year 2002.

60. The *Seventh Report* used Organization for Economic Co-Operation and Development (“OECD”)/Teligen mobile service baskets and revenue per minute (“RPM”) estimates to compare mobile telephone pricing in the United States, Canada, and parts of Western Europe and the Asia-Pacific. We request recommendations on alternative methods of comparing mobile telephone pricing in different countries and associated sources of data. We also seek suggestions on sources of data for updating the international comparison of RPM.

61. We also invite suggestions on additional performance measures and associated data sources for comparing the U.S. mobile telephone sector with those in other countries.

B. Competition in the Mobile Data Sector

i. Introduction

62. For purposes of its *CMRS Reports*, the Commission considers mobile data to be the delivery of non-voice information to a mobile device. Two-way mobile data services include not only the ability to receive non-voice information on an end-user device but the ability to send it from an end-user device to another mobile or landline device using wireless technology. The *Seventh Report* concluded that competition within the mobile data sector is developing successfully, as evidenced by the multitude of dynamic services, service packages, and pricing plans available to consumers from a variety of providers.

63. For purposes of the Eighth Report, we seek information on the significant changes and developments that have occurred in the mobile data industry since the publication of the *Seventh Report*. Do commenters believe that competition is continuing to develop successfully within the mobile data sector?

64. In analyzing competition within the mobile data industry, it is necessary to consider the relationship between mobile data and mobile telephone service. Both services are offered by many of the same providers using the same networks and end user devices, yet differences in the nature of the two services exist. Hence, to what extent are the mobile data and mobile telephone sectors separate, and to what extent are they converging?

65. Related to this issue of convergence, the *Seventh Report* discussed the emergence of smartphone devices during 2001 and 2002 that combine the organization and data-centric features of personal digital assistants (“PDAs”) with the voice capabilities of mobile telephones. We seek comment on the extent to which the emergence of smartphones has signified a convergence between mobile data and mobile telephone service, and we seek data on the growth in the number of users of these devices. How many smartphones have been sold in the United States? What types of consumers purchase smartphones? What are the features and capabilities of the various devices? Finally, have there been any new developments related to smartphones since the *Seventh Report*?

ii. Services & Content

66. The *Seventh Report* described three general categories of mobile data providers and their corresponding devices: (i) mobile telephone operators

offering services primarily on mobile telephone handsets, (ii) providers of mobile data access to handheld PDA devices and laptop computers, and (iii) paging carriers offering services on pagers and two-way messaging devices. However, in analyzing subsectors within the mobile data industry, for several reasons we have found it most effective to segregate the industry not along the lines of devices, spectrum bands, or network technologies, but instead along the lines of the types of services available to consumers. First, the types of mobile data services available to consumers have become increasingly similar across devices. Many of the same mobile data services are available on mobile telephone handsets, PDAs, smartphones, and laptop computers. With the exception of traditional one-way pagers, most mobile data devices have the ability to offer some form of text messaging, web browsing, and e-mail access. Second, carriers use a variety of different spectrum bands—including broadband PCS, cellular, and SMR—and a variety of different network technologies—including CDMA, GSM, cdma2000 1xRTT (“1xRTT”), and General Packet Radio Service (“GPRS”)—to provide many of the same mobile data services.

67. The types of services discussed in the *Seventh Report* include: Paging, Short Messaging Service (“SMS”) and instant messaging (“IM”), web browsing, e-mail and corporate server access, location-based services, and short range data transmissions. Are there additional categories that should be analyzed in the Eighth Report? What new and innovative services are mobile data providers offering? In addition, we seek comment on the extent to which mobile data services are substitutes for or complements of one another? For example, do messaging services compete with e-mail services? Are web browsing services a complement to e-mail access? Which services are most often bundled together, and why?

68. In addition to seeking data on the level of competition among different mobile data services, we request information on the extent to which mobile data services compete with data services offered through wireline devices. For example, have mobile e-mail services been a substitute for e-mail access on a personal computer offered through a dial-up, Digital Subscriber Line (“DSL”), or cable modem connection?

69. Furthermore, we request data on the growth and success of the various mobile data services. Which services are most popular with consumers and have the highest adoption rates? In what