PUBLIC NOTICE

FEDERAL COMMUNICATIONS COMMISSION
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WIRELESS TELECOMMUNICATIONS BUREAU SEEKS COMMENT ON COMMERCIAL MOBILE RADIO SERVICES MARKET COMPETITION

WT Docket No. 08-27

Comments Due: March 26, 2008
Reply Comments Due: April 10, 2008

In 1993, Congress created the statutory classification of Commercial Mobile Services[1] to promote the consistent regulation of similar mobile radio services.[2] At the same time, Congress established the promotion of competition as a fundamental goal for Commercial Mobile Radio Service ("CMRS") policy formation and regulation. To measure progress toward this goal, Congress required the Commission to submit annual reports ("*CMRS Reports*") that analyze competitive conditions in the industry.[3]

This Public Notice solicits data and information in order to evaluate the state of competition among providers of CMRS for its Thirteenth Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services ("*Thirteenth Report*"). The statute requiring the Commission to submit annual reports providing an analysis of competitive market conditions with respect to CMRS stipulates that this analysis shall include, among other things, "an analysis of whether or not there is effective competition."[4] In this proceeding, the Wireless Telecommunications Bureau ("Bureau") seeks to update and improve the indicators of competition for the Commission's next report to Congress and to determine whether or not there is effective competition in the CMRS market. The Bureau seeks public input to facilitate this determination.

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[1] The term "commercial mobile service" is defined by the Communications Act of 1934, as amended ("the Act"), as "any mobile service … that is provided for profit and makes interconnected service available (A) to the public or (B) to such classes of eligible users as to be effectively available to a substantial portion of the public, as specified by the Commission." Communications Act § 332(d)(1), 47 U.S.C. § 332(d)(1). "Mobile service" is defined at Section 3 of the Act. Communications Act § 3(27), 47 U.S.C. § 153(27). The term "commercial mobile service" came to be known as the "commercial mobile radio service". 47 C.F.R. § 20.3.

[2] The Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, Title VI, § 6002(b), amending the Communications Act of 1934 and codified at 47 U.S.C. § 332(c).

[3] 47 U.S.C. § 332(c)(1)(C).

[4] *Id*.

The Commission is constantly striving to improve and refine the way it collects, analyzes, and reports industry data. Importantly, the *Twelfth Report*[5] introduced a new data source that allowed for a significantly more granular and accurate analysis of mobile telephone service deployment and competition. This new data source provided the FCC with a set of maps that set out the detailed boundaries of the network coverage areas of every operational mobile telephone provider in the United States. Using these maps, the FCC was able to estimate a number of metrics based on the 8 million census blocks that comprise the U.S., rather than the 3,200 counties on which the FCC had previously relied. Among the metrics significantly enhanced by this new data source were: (1) the percentage of the U.S. population covered by a certain number of providers, and (2) the percentage of the population covered by different types of network technologies.

For the *Thirteenth Report*, the Bureau is seeking to increase its understanding of conditions in the CMRS marketplace, particularly with regard to new technological developments. Therefore, this *Public Notice* contains a new series of questions asking for data and analytic recommendations related to that effort.

In the four most recent *CMRS Reports*, the Commission has reviewed competitive market conditions using a framework that groups indicators into four categories: (1) market structure; (2) provider conduct; (3) consumer behavior; and (4) market performance.[6] Accordingly, when submitting responses to this Public Notice, commenters should, to the extent possible, present materials addressing these four categories of indicators. In addition to these issues and the specific matters discussed below, the Bureau seeks comment generally on which indicators are useful for analyzing competitive market conditions with respect to CMRS. We also request comment on what specific criteria should be used to determine whether there is effective competition among CMRS providers.[7]

Industry members, members of the public, and other interested parties are encouraged to submit information, comments, and analyses regarding competition in the provision of CMRS. Commenters desiring confidential treatment of their submissions should request that their submission, or a specific part thereof, be withheld from public inspection.[8] In order to facilitate its analysis of competitive trends over time, the Commission requests that parties submit current data as well as historic data that are comparable over time.

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[5] In the Matter of 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 Radio Services, WT Docket No. 07-71, *Twelfth Report*, FCC 08-28 (rel. Feb. 4, 2008) ("*Twelfth Report*").

[6] 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, *Ninth Report*, 19 FCC Rcd 20597 (2004); 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, *Tenth Report*, 20 FCC Rcd 15908 (2005); 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, *Eleventh Report*, 21 FCC Rcd 10947 (2006) ("*Eleventh Report*"); *Twelfth Report*, FCC 08-28. The reports can also be found on the FCC's web site at <http://wireless.fcc.gov/cmrsreports.html>.

[7] In view of a separate ongoing proceeding on roaming obligations of CMRS providers, this *Public Notice* omits questions about roaming. *See* Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers, WT Docket No. 05-265, *Memorandum Opinion & Order and Notice of Proposed Rulemaking*, 20 FCC Rcd 15047 (2005).

[8] 47 C.F.R. § 0.459.

I. MOBILE TELECOMMUNICATIONS MARKET STRUCTURE

The Bureau's analysis of market structure will focus on the current level of concentration and the ease or difficulty with which new providers can enter the market. The Bureau invites commenters to address the sources of data and the analysis of metrics relating to both aspects of market structure in the sections below.

A. Service Availability and Deployment

1. Service Deployment, Granularity of Data, and Coverage Maps

As discussed above, in the *Twelfth Report*, we improved our examination of competition in the mobile telephone sector by compiling a list of census blocks where operators offer digital and next generation technologies, using data supplied under a contract with American Roamer, an independent consulting firm that produces coverage maps based on public sources as well as confidential information supplied directly by service providers.[9] We seek comment on our analysis. Is this new methodology for tracking facilities-based competitors appropriate? Are census blocks an appropriate size to analyze the number of CMRS competitors and the deployment of various services?

2. Mobile Data and Broadband Deployment

The Bureau seeks comment on deployment of newer network technologies such as EDGE Enhanced Data Rates for Global System for Mobile Communications Evolution ("EDGE"), Wideband Code Division Multiple Access ("WCDMA"), High-Speed Downlink Packet Access ("HSDPA"), Evolution Data – Optimized ("EV-DO") or EV-DO Rev A, and WiMax IEEE 802.16e-2005 ("WiMax"). The Bureau also is seeking comment on ways it could deepen and refine its understanding of broadband availability and deployment.

The Bureau is particularly interested in changes that have occurred in mobile data and broadband network deployment since the *Twelfth Report*. For example, what advanced wireless applications are being offered using these technologies?

3. Service Deployment in Rural Areas and Tribal Lands

To obtain a better understanding of the state of competition in rural areas and tribal lands, the Bureau requests comment on the extent of mobile voice and data service in these areas. To what extent are advanced wireless services being offered in rural areas and tribal lands? Are there noteworthy trends in the state of competition in rural areas and tribal lands?

Furthermore, regarding rural areas and tribal lands, do providers provide coverage only in certain parts of these areas, such as near major roads, where they do not market service to residents of those areas? If this is true, could the Bureau's analysis be further improved if providers indicated the parts of their coverage areas in which they compete to offer service and the parts that are used only to provide coverage to traveling subscribers based in other locations?

B. Other Competitors to Terrestrial CMRS Providers

1. Mobile Satellite Service Providers

The Bureau seeks information about the current provision of CMRS by mobile satellite service ("MSS")

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[9] *Twelfth Report,* at ¶ 35 & note 61.

companies, including the frequency bands they are employing.[10] The Bureau requests data on prices (of both service and handsets) and coverage. In order to obtain a greater understanding of the MSS market, we also request data on: (1) the number of subscribers; (2) minutes of use; and (3) differences in phone usage between rural and urban areas. In addition, we ask for comment on the extent to which CMRS provided by MSS functions as a substitute for terrestrial CMRS services.[11] The Bureau also requests information on the current status and deployment of Ancillary Terrestrial Component systems by MSS companies.

2. Resale/MVNO Providers

To what extent are resellers/Mobile Virtual Network Operators ("MVNOs") creating competitive pressures in the mobile telecommunications sector? Who are the major resellers/MVNOs in the United States? How many subscribers do they have? From the consumer's perspective, what are the benefits of buying from a reseller/MVNO versus a facilities-based provider? Are resellers/MVNOs selling to specific demographic segments?

C. Horizontal Concentration

1. NRUF Data and Output Market Concentration

The main source of data the Bureau uses to calculate output market concentration statistics for the purpose of this report is the Numbering Resource Utilization / Forecast ("NRUF") data that are submitted to the Commission on a rate center basis.[12] The Commission has found that NRUF data are a reasonable proxy for mobile telephone subscribers, and in previous *CMRS Reports*, utilized the NRUF data to calculate market concentration measures for Economic Areas ("EAs").[13] We seek comment on whether any market or technological developments indicate that NRUF data may not reasonably reflect the number of mobile telephone subscribers. The Bureau also seeks comment whether EAs, given any market or technological developments, continues to be an appropriate geographic area for the calculation of mobile telecommunications concentration measures based on NRUF data.

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[10] In addition to terrestrial mobile services, CMRS includes MSS that provide CMRS directly to end users. *See* 47 C.F.R. § 20.9(10).

[11] "While terrestrial and satellite CMRS operators provide wireless mobile voice and data connectivity, the *Satellite Flexibility Order* noted in 2003 that, since terrestrial CMRS and MSS are expected to have different prices, coverage, product acceptance and distribution, the two services appear, at best, to be imperfect substitutes for one another that would be operating in predominately different market segments." *Twelfth Report*, FCC 08-28 at 15 ¶ 16; s*ee* also Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands, *Report and Order and Notice of Proposed Rulemaking*, 18 FCC Rcd 1962, 1964 (2003) ("*Satellite Flexibility Order*"), *modified sua sponte*, *Order on Reconsideration*, 18 FCC Rcd 13590 (2003), *on reconsideration*, *Memorandum Opinion and Order and Second Order on Reconsideration*, 20 FCC Rcd 4616 (2005), *further recon pending*.

[12] Rate center boundaries are much smaller than, and not coextensive with, mobile telecommunications license boundaries such as Cellular Market Areas ("CMAs"), Metropolitan Trading Areas ("MTAs"), or Basic Trading Areas ("BTAs"). Due to their relatively small size, rate centers are not necessarily indicative of where a mobile telecommunications subscriber lives, works, or uses a mobile telecommunications device. In addition, in order to protect the confidentiality of the companies submitting NRUF data, the Commission does not report the number of subscribers for geographic areas in which there are three or fewer providers.

[13] EAs are defined by the U. S. Department of Commerce's Bureau of Economic Analysis. *See* Twelfth Report, FCC 08-28 at 98 n. 564.

2. Mobile Data Subscriber Shares

One limitation of NRUF data for the purpose of measuring concentration levels in the mobile data market is that they do not reveal whether mobile telephone subscribers use their handsets for mobile data services as well as to make and receive calls. We request sources of information on the number of mobile data subscribers that individual providers serve, or the percentage of their customer base that uses mobile data services as well as mobile voice. Do individual providers' mobile data market shares differ significantly from their mobile telephony market shares, and if so, to what extent?

D. Consolidation and Exit

The Bureau seeks comment on the effects of consolidation in the mobile telecommunications market. Has consolidation affected mobile data services differently than mobile telephone services? Has consolidation affected pricing, roll-out of new services, or equipment offerings? Has consolidation affected rural areas differently than urban areas? Are the effects of consolidation or exit different for mergers and acquisitions, swaps, joint ventures, and bankruptcies?

E. Barriers to Entry

Barriers to entry in the mobile telecommunications market may include first-mover advantages, large sunk costs, and access to spectrum. [14] The Bureau seeks comment on these and other types of barriers to entry in the mobile telecommunications market. What are the most significant barriers to entry in the mobile telecommunications market? Are barriers to entry different in rural and urban areas?

The Bureau seeks comment on whether there is access to sufficient spectrum, either through Commission auctions or through secondary market transactions, to prevent spectrum from becoming a significant barrier to entry in the CMRS industry. Are existing service providers spectrum constrained? If so, in which geographic markets are providers most likely to be constrained? Have these providers become more spectrum constrained after rolling out advanced wireless services? Do potential entrants have sufficient opportunities to access spectrum? As advanced wireless technologies become more prevalent, will potential entrants have more or fewer opportunities to access spectrum? In addition, the Bureau seeks comment on whether its policy to facilitate spectrum leasing will provide sufficient opportunities both for existing providers to expand their operations and for new mobile telecommunications providers to enter the market. Finally, we ask about the likely impact of the recent auction of 700 MHz spectrum on competition in the CMRS market as well as the impact of any anticipated auctions.[15]

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[14] *See* Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission at § 3.0 (Apr. 2, 1992, revised Apr. 8, 1997) (discussion of barriers to entry); Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 76-82 (3rd ed., Addison, Wellsley, Longman, Inc., 1999) (same). *See also* 2000 Biennial Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, WT Docket No. 01-14, *Report and Order*, 16 FCC Rcd 22668, 22688-91 (2001).

[15] Auction of 700 MHz Band Licenses Scheduled for January 24, 2008, Notice and Filing Requirements, Minimum Opening Bids, Reserve Prices, Upfront Payments, and Other Procedures for Auctions 73 and 76, *Public Notice*, 22 FCC Rcd 18141 (2007). With respect to the 700 MHz Band, the Digital Television and Public Safety Act of 2005 ("DTV Act"), amended Section 309(j)(14) of the Communications Act, 47 U.S.C. § 309(j)(14), to establish February 17, 2009 as a firm deadline for the end of the digital television (DTV) transition period, and to require that the Commission commence the auction of certain recovered analog broadcast spectrum no later than January 28, 2008. Until the transition is complete, the 700 MHz Band will remain occupied by television broadcasters. Nevertheless, substantial portions of the band are not so encumbered and are available for immediate use by new licensees.

II. PROVIDER CONDUCT IN THE MOBILE TELECOMMUNICATIONS MARKET

A. Price Rivalry

1. Pricing Plan Innovations

What innovations have occurred with pricing plans since the *Twelfth Report*? Have these pricing innovations spread throughout the mobile telecommunications market or have they been limited to a subset of providers? To what extent do new types of pricing plans reflect price rivalry among CMRS providers? Have pricing innovations been more widely adopted in the last year? The Bureau seeks information on which providers offer nationwide pricing plans, particularly those that are not typically described as being nationwide operators, and request descriptions of the terms of such plans. Do providers engage in rivalry via handset pricing? Has this changed in the last year?

2. Pricing Plans for Mobile Data and Broadband Services

The Bureau also seeks comment and information on pricing trends for mobile data services offered by mobile telephone providers. Are there data on the pricing of these services available on a national or sub-national level? How are new or enhanced mobile data services such as location-based services, games, digital photos, video services, and downloadable music priced? Are there any reports or analyses that discuss pricing trends for mobile data services?

3. Pricing Plans in Rural Areas

The Bureau asks for comment and information on whether there are meaningful pricing differences between urban and rural areas. Did differences exist in the past that no longer exist today? To the extent that such differences exist, what are the reasons for such differences?

B. Capital Expenditures

Have capital expenditures by mobile telecommunications providers increased or decreased since the *Twelfth Report*? For what purposes are providers using capital expenditures? Are there any studies or analyst reports on the capital expenditures of nationwide providers versus regional/local providers? Does data exist on capital expenditures by geographic region?

C. Technology Deployment and Upgrades

For the *Thirteenth Report*, the Bureau requests information on the extent to which mobile telecommunications providers have upgraded, or plan to upgrade, their networks to more advanced technologies such as WCDMA, HSDPA, High Speed Uplink Packet Access ("HSUPA"), EV-DO, EV-DO Rev A, EV-DO Rev B, WiMAX, Long Term Evolution ("LTE"), and Ultra Mobile Broadband ("UMB"). How extensively have providers deployed more advanced technologies (*e.g.*, have providers focused on urban areas only, or have they deployed these technologies in rural areas as well)? What, if any, are the relative advantages and disadvantages of these various technologies, and what impact do such differences have on competitive market conditions in the mobile telephone sector? Are there other new wireless technologies that have improved wireless providers' coverage, capacity and/or service offerings for mobile services? What types of advanced technologies and services do licensees plan to deploy the Advanced Wireless Services ("AWS") spectrum band and the 700 MHz Band, as well as the BRS/EBS Band? In addition, to what extent have providers integrated their mobile telephone network technologies with high-speed wireless local area network technologies such as Wi-Fi, with the aim of offering seamless mobile voice or data services? Finally, to what extent are providers using innovations in handset features and design as a way to compete?

D. Applications and Devices

The Bureau invites commenters to submit information and evidence documenting provider practices with regard to applications and devices, especially with regard to recent developments indicating that providers are facing growing pressures to move to an open platform model.[16] To what extent, and in what specific ways, do providers restrict the types of devices that can be attached to, or the types of applications that can be accessed on, their networks? To what extent are providers differentiating themselves from their rivals with regard to applications and devices? What changes in provider practices, if any, have occurred in this regard in the past year? What impact have recent technological and market developments, such as the introduction of the Apple iPhone, had on carrier conduct in this area?

III. CONSUMER BEHAVIOR IN THE MOBILE TELECOMMUNICATIONS MARKET

A. Access to Information

The Bureau seeks comment on the development of consumer information sources for the mobile telecommunications market. Are there new avenues for consumers to gain information, such as retailers providing on-line and in-store comparisons of pricing plans, services, and handsets?

B. Switching and Churn

The Bureau asks providers to submit descriptions of how they calculate churn. Do the differences in how churn is calculated prohibit a meaningful comparison of churn figures across the wireless industry? How reliable are prior churn estimates? Are there other sources of churn data available that should be included in the *Thirteenth Report*? Further, the Bureau seeks sub-national or regional churn data, and churn data by demographic groups. Have the previous reasons consumer churn, namely service cost and network quality, remained the same? If not, what are the reasons for consumer churn? Since the *Twelfth Report*, has there been a change in the churn rate? If there has been a change, what is the magnitude of this change? Has local number portability ("LNP") affected wireless customer churn rates? If so, has the effect been significant? How has ongoing evolution in handset design and functionality affected consumer churn decisions?

IV. MOBILE TELECOMMUNICATIONS MARKET PERFORMANCE

The Bureau intends to analyze various metrics including pricing levels and trends, subscriber growth and penetration, Minutes of Use ("MOUs"), innovation and diffusion of services, and quality of service. Are there any other metrics that would add to its analysis of the mobile telecommunications market? Are these metrics available on a national or sub-national level?

A. Pricing Levels and Trends

1. Pricing Trends

The Bureau seeks comment on the use of available pricing estimates as a tool in its analysis of the performance of the mobile telephone market, including to what extent any observed pricing changes are evidence of effective competition. The Bureau seeks information on which providers offer nationwide pricing plans, particularly those that are not typically described as being nationwide operators, and request descriptions of the terms of such plans. We ask for information and comment on voice and data services. Are there additional analyses that can be performed or conclusions that can be drawn from new or existing pricing data? We also seek information on trends in handset prices.

2. Pricing Trends in Rural Areas

Are commenters aware of pricing studies that look at urban versus rural or other sub-national mobile

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[16] *See, e.g., 700 MHz Second Report & Order,* [cite – generally and to open platform section] (adopting open platform requirement for C Block if reserve price is met at auction).

telecommunications pricing? Given the scarcity of studies that provide direct information on pricing, the Bureau is interested in finding alternative ways of determining whether pricing in rural areas conform to national pricing plans. Are there other ways of studying this issue? Are there existing studies or data sets that would give us the ability to explore this issue?

3. Voice Revenue Per Minute

In the *Twelfth Report*, we used average revenue per minute ("RPM") as a proxy for mobile pricing. RPM is calculated by dividing a provider's estimate of ARPU by its estimate of MOUs, yielding the RPM that the provider is receiving. Until the last two years, revenues from wireless data services were a relatively insignificant portion of the average wireless subscriber's bill. However, in the last two years, data services have become an ever increasing portion of that bill. Because the denominator in our RPM calculation measures usage based on the number of billable minutes of voice calls, rather than voice and data services combined, RPM is becoming an increasingly inaccurate measure of the pricing of mobile voice service. In the *Twelfth Report*, we addressed this issue by including a revised version of RPM, "Voice RPM," which excludes that portion of ARPU generated by data services. We seek comment on the use of Voice RPM as a proxy for mobile pricing, and whether the methodology we used to develop it is appropriate. Should we consider other proxies for mobile pricing, and if so, which ones?

B. Average Revenue per Unit ("ARPU")

Average monthly revenue per subscriber is another key metric presented in past CMRS Reports. The Bureau seeks comment on the use of ARPU as a metric in its analysis of the mobile telecommunications industry. Are additional ARPU data available that should be considered, in particular data depicting whether and how ARPU varies by region and/or demographic group? The Bureau requests information on ARPU allocated to voice versus data and/or broadband services. Are there additional analyses that can be performed or conclusions that can be drawn from new or existing data? The Bureau requests from commenters additional input on the possible causes for any recent trends in ARPU, as well as additional data that may support various hypotheses.

C. Quantity of Services Purchased

1. Subscriber Growth

Since the *Seventh Report*,[17] the Commission has estimated the number of subscribers in the United States by using NRUF data. NRUF data, however, do not include demographic information. Therefore, the Bureau requests information on subscribers that would assist in a greater understanding of the mobile telecommunications inventory, such as penetration rates by age groups and/or household penetration rates.

The Bureau asks for comment on how to determine which geographic area or areas should be used to calculate mobile telecommunications subscribership and penetration rates.[18] The Bureau requests comment on the appropriateness of using Economic Areas ("EAs") for such calculations. Given the

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[17] 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, *Seventh Report*, 17 FCC Rcd 12985 (2002) ("*Seventh Report*").

[18] The use of any particular geographic area to calculate mobile telecommunications subscribership and penetration rates for purposes of this report does not imply that the same geographic area will be used in any other Commission proceedings to define the relevant geographic markets. Such other proceedings could include an application for a license transfer and may present facts pointing to a narrower or broader geographic market definition than any used, suggested, or implied in the *CMRS Reports*.

limitations of NRUF data, insofar as they are reported on the basis of the location of rate centers, would other geographic areas be appropriate to use in place of or in addition to EAs, such as states, MTAs, BTAs, CMAs, or counties? In addition, are there other ways to interpret existing national and sub-national subscribership data for purposes of the *Thirteenth Report*? Also, are there data on either a national or sub-national basis on the number of mobile telecommunications customers that use mobile data services?

2. Minutes of Use

The Bureau seeks comment on the use of MOUs as an indicator of the demand for mobile telecommunications services. For purposes of the *Thirteenth Report*, the Bureau asks for comment on the sources of the MOU data presented in the *Twelfth Report* and requests additional MOU data. In addition, should the Bureau perform other analyses or draw additional conclusions from new or existing data? The Bureau requests data on MOUs on a sub-national basis and/or broken down by various demographic groups.

D. Quality of Service

The Bureau seeks comment on the use of consumer surveys to measure service quality in the mobile telecommunications market. Do commenters recommend any particular consumer surveys on service quality in the mobile telecommunications market, and why? What factors do these recommended surveys take into account to evaluate customer satisfaction with service quality? In particular, do the surveys focus primarily or exclusively on network performance and reliability (incidence of dropped calls, interference, and so forth), or do they also take into account other influences on the customer experience such as cost of service, customer service, and billing? In cases where surveys measure overall customer satisfaction with the performance of wireless service providers rather than network performance per se, what specific dimensions of service quality are survey respondents asked about, and how are responses to different questions weighted to derive the overall score? What methodologies do the recommended surveys use to select survey respondents, and do these methodologies result in any sample bias? What types of consumer surveys should we consider in our analysis?

E. Applications and Devices

The Commission invites commenters to submit consumer surveys, or other types of evidence, about consumer preferences with regard to mobile applications and devices. To what extent are consumers satisfied with the types of mobile devices and applications available to them? What are the most important factors consumers take into account when choosing a handset? The Commission also invites commenters to submit any U.S. or international studies or analyses measuring the benefits or harm to consumers as a result of provider practices with regard to mobile applications and devices.

V. WIRELESS – WIRELINE COMPETITION

A. Competition in Voice Services

The Bureau asks for comment and sources of information on the extent to which mobile telephone service competes with wireline service. We ask for information about the number and demographics of households that have "cut the cord" and use wireless phones as their sole phone. Has the introduction of intermodal LNP affected consumer behavior or had any impact on wireless-wireline competition? Are there any other new developments in wireless-wireline competition that have occurred since the *Twelfth Report*? What are the major reasons for these developments?

B. Competition in Broadband Services

Wireless technologies appear to play an increasingly significant role in the market for broadband services. In addition to the mobile broadband services discussed above, we note that wireless operators using

Broadband Radio Service/Educational Broadband Service ("BRS/EBS") spectrum in the 2.5 GHz band currently offer, or have announced plans to offer, portable high-speed Internet access services using technologies such as WiMax. We seek detailed information from operators on their current and planned deployment of WiMax and similar wireless broadband technologies in BRS/EBS spectrum, in other licensed spectrum bands, and in spectrum bands used by unlicensed devices. To what extent do mobile and portable wireless broadband services complement broadband services offered over wireline technologies such as DSL, cable, or fiber to the home? To what extent do they compete with these wireline technologies? What effect will the 2006 AWS-1 Auction and the 2008 700 MHz Band Auction have on the provision of wireless broadband services and broadband competition?

VI. WIRELESS LOCAL AREA NETWORK TECHNOLOGIES

Wireless Local Area Network technologies can serve as both a competitor and a complement to the services offered by the CMRS industry.[19] The most prevalent WLAN technology is equipment manufactured in accordance with the IEEE 802.11 family of standards, commonly known as "Wi-Fi."[20] Wi-Fi networks often must rely on another type of broadband connection, such as wireline, cable, wireless, or broadband over power lines ("BPL"), for access to the Internet.[21] Wi-Fi enables consumers to connect to the Internet at public "hot spots," such as restaurants, coffee shops, hotels, airports, convention centers, and city parks, typically using a laptop computer with an internal or external Wi-Fi modem.[22]

Some mobile telephone providers use Wi-Fi hot spots to supplement or complement their CMRS offerings provided through the licensed use of spectrum.[23] We ask for information on which service providers use WLANs in these ways, and we seek a description of those service offerings. We also request information about the pricing and usage of such plans. In addition, we ask for information on the extent to which WLANs are being used for voice as well as data services, and on whether such voice services are being provided using Voice over Internet Protocols ("VoIP") technology or other technologies. Are there estimates on the amount of voice on WLANs, as compared with data traffic? What voice equipment and services are available for use over public hot spots? To what extent are WLAN-based data and VoIP services considered to be complements to, or substitutes for, the data and voice services offered over CMRS networks?

Finally, we seek information on the total number of public hot spots, as well as the number of free hot spots and fee-based hot spots. We also request information on the pricing of fee-based hot spots. Has the proportion of free versus fee-based hot spots changed over the past year? Is there a difference in connectivity speeds and reliability for free versus fee-based hot spots? To what extent do hot spots compete with mobile broadband network data offerings, and to what extent do the differences between free and fee-based hot spots influence competition between Wi-Fi providers and CMRS providers?

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[19] *Twelfth Report*, FCC 08-28 at 110 ¶ 252.

[20] WLAN technologies operate on an unlicensed basis under Part 15 of the Commission's rules. *See* 47 C.F.R. §15 et seq.

[21] Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, WT Docket No. 07-53, *Declaratory Ruling*, 22 FCC Rcd 5901, 5907-8 ¶ 15 (2007).

[22] These hot spots usually function as an extension of another broadband Internet access network end point (*e.g.*, wireline broadband Internet access or cable modem Internet access end point).

[23] Several mobile telephone providers have entered the hot spot operations business through acquisition, partnerships, or independent deployment. *Twelfth Report*, FCC 08-28 at 111 ¶ 254. *See, e.g.*, T-Mobile, *T-Mobile Hotspot U.S. Location Map*, <https://selfcare.hotspot.t-mobile.com/locations/viewLocationMap.do> (last visited Feb. 6, 2008) (T-Mobile claims it has 8,800 hotspots where its customers can get connectivity).

VII. OTHER INDICATORS AND TOPICS

In addition to alternative sources of data and information to update indicators of competition used in the *Twelfth Report* and previous *CMRS Reports*, the Bureau invites commenters to recommend additional or alternative indicators of competition to enhance the analysis of competitive market conditions with respect to CMRS in the *Thirteenth Report*. In each case, the commenter should also submit, or identify sources for, the data and information needed to compile the proposed indicator. As necessary and appropriate, the commenter should also explain how the recommended indicator fits into the market structure-provider conduct-consumer behavior-market performance framework.

Finally, the Bureau also invites commenters to propose additional topics of interest that are related to the assessment of the status of competition in the CMRS marketplace. For example, have any noteworthy new trends or developments relevant to the assessment of competitive conditions in the mobile telephone sector emerged since the publication of the *Twelfth Report*?

VIII. PROCEDURAL MATTERS

Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments on or before **XX XX, 2008** and reply comments on or before **XX XX, 2008**. All filings should refer to WT Docket No. 07-71. Comments may be filed using: (1) the Commission's Electronic Comment Filing System (ECFS), or (2) by filing paper copies. See Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://www.fcc.gov/cgb/ecfs/. Filers should follow the instructions provided on the website for submitting comments. If multiple dockets or rulemaking numbers appear in the caption of this proceeding, filers must transmit one electronic copy of the comments for each docket or rulemaking number referenced in the caption. In completing the transmittal screen, filers should include their full name, Postal Service mailing address, and the applicable docket number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for email comments, filers should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in response.

- Paper Filers: Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

  Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

  - The Commission's contractor will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building.

  - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.

- U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554.

One copy of each pleading must be delivered electronically, by e-mail or facsimile, or if delivered as paper copy, by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (according to the procedures set forth above for paper filings), to: (1) the Commission's duplicating contractor, Best Copy and Printing, Inc., at FCC@BCPIWEB.COM or (202) 488-5563 (facsimile); (2) Ben Freeman Spectrum and Competition Policy Division, Wireless Telecommunications Bureau, at ben.freeman@fcc.gov (202) 418-7447 (facsimile); (3) Heidi Kroll Spectrum and Competition Policy Division, Wireless Telecommunications Bureau, at heidi.kroll@fcc.gov, or (202) 418-7447 (facsimile).

Copies of the public notice and any subsequently-filed documents in this matter may be obtained from Best Copy and Printing, Inc. in person at 445 12th Street, S.W., Room CY-B402, Washington, D.C. 20554, via telephone at (202) 488-5300, via facsimile at (202) 488-5563, or via e-mail at FCC@BCPIWEB.COM. The public notice and any associated documents are also available for public inspection and copying during normal reference room hours at the following Commission office: FCC Reference Information Center, 445 12th Street, S.W., Room CY-A257, Washington, D.C. 20554. The public notice is also available electronically through the Commission's ECFS, which may be accessed on the Commission's Internet website at http://www.fcc.gov. Alternate formats of this public notice (computer diskette, large print, audio recording, and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426 (voice), (202) 418-7365 (TTY), or by sending an e-mail to access@fcc.gov.

For further information, contact Ben Freeman, Spectrum & Competition Policy Division, Wireless Telecommunications Bureau, (202) 418-0628, or Heidi Kroll, Spectrum & Competition Policy Division, Wireless Telecommunications Bureau, (202) 418-1310.