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Communications

Authors Martyn Roetter and Alan Pearce assert that proposed transactions centered on the future of Sprint Nextel, the nation's third largest wireless services company, offer the government an opportunity to reverse the momentum of an emerging and non-competitive duopoly structure in the U.S. market for mobile broadband services. A critical factor, they write, is the role played by the distribution, control of, and access to scarce publicly-owned licensed spectrum among competing mobile services providers. Based on their analysis, they outline the optimum outcome that the FCC and DOJ should seek.

The Sprint Transactions: A Chance for a Better Future for U.S. Mobile Broadband

BY MARTYN ROETTER AND ALAN PEARCE¹

The reviews by the Federal Communications Commission and the Department of Justice of proposed transactions centered on the future of Sprint Nextel, the nation's third largest wireless services company, offer the government an opportunity to reverse the momentum of an emerging and non-competitive duopoly

¹ This paper has been produced entirely from our own resources and the views expressed are ours alone and do not necessarily represent the views of anyone else.

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structure in the U.S. market for mobile broadband services. These proposed transactions could reinforce the positive impact of the failure of AT&T in 2011 to acquire T-Mobile that freed T-Mobile to build an independent nationally competitive LTE (Long Term Evolution) network capable of challenging Verizon and AT&T. Alternatively, they could exacerbate the negative consequences of the approval in 2012 of the Verizon/Comcast-led cartel that covers both mobile and fixed broadband access services. This cartel is threatening the competitive and innovative intensity of the U.S. broadband market and hence the future of the U.S. as a global leader in the pricing and performance of broadband access services available to U.S.-based customers.

The Objective: Strengthen Sprint and Boost Competition

A core theme of this article is an emphasis on the critical role that is played by the distribution, control of, and access to scarce publicly-owned licensed spectrum among competing mobile services providers in delivering value to customers while ensuring and sustaining an effectively competitive market. The analyses presented lead to the conclusion that the optimum outcome for the Sprint transactions would be:

1. Approval of the acquisition of a 70% stake in Sprint by SoftBank of Japan, subject to the condition that Sprint relinquish control of its majority-owned subsidiary, Clearwire, which would require as a first step

that Sprint abandon its current bid to acquire all the shares of Clearwire (just under 50%) that it does not currently own.

2. Clearwire would then either be free as an independent entity to operate as an open wholesale provider of LTE mobile broadband access services, or would be required to divest the majority of its 2.5 GHz assets, leaving some 2.5 GHz frequencies in the hands of Sprint/SoftBank. In either scenario, all of the 2.5 GHz Band currently dominated by a Sprint-controlled Clearwire would become accessible to U.S. customers and other services providers. Much of this valuable, and in some respects unique, spectrum asset could then at last be exploited productively instead of languishing virtually unused in the hands of Sprint.
3. Sprint could either be directly compensated for relinquishing control of the majority of 2.5 GHz Band or benefit from the prices paid by winning bidders for the licenses it had to divest. Sprint would emerge with a new lease on life, with SoftBank to become a viable competitor in the U.S. mobile market and overcome the cumulative harm suffered from the series of its own errors over the past eight years.

In the event that a competing \$25.5 billion bid by Dish Network to acquire Sprint, announced on April 15, 2013, becomes the preferred outcome for Sprint², a similar condition for approval requiring that Sprint relinquish control of Clearwire's 2.5 GHz should be imposed. Indeed, the size of the spectrum holdings of a potential Sprint/Dish entity including Clearwire (about 240 MHz, taking account of Dish's 40 MHz of spectrum in the 2 GHz band that the FCC has now effectively cleared for terrestrial LTE deployments), would give rise to more concerns about an anti-competitive aggregation of spectrum by one mobile operator than a Sprint/SoftBank entity (SoftBank brings no additional U.S. spectrum licenses to the negotiating table). The amount of spectrum controlled by either a Sprint/SoftBank or a Sprint/Dish entity (respectively about equal to or greater than the combined spectrum holdings of AT&T and Verizon) that has full control of all of Clearwire's current 2.5 GHz spectrum assets raises significant antitrust concerns as the DoJ has pointed out.³

The Sprint Transactions and Public Policy Implications

The Sprint transactions involve the proposed acquisition of a 70% stake in Sprint by SoftBank of Japan, followed by a contingent transaction in which the New Sprint would fully absorb Clearwire by acquiring the remaining shares (just under 50%) of this operator that it does not yet own. The SoftBank investment has been

challenged by a counterbid from the satellite TV operator, Dish Network, to acquire Sprint.

The Clearwire transaction is not contingent upon the success of the Dish bid, although Dish stated in its offer letter that it anticipates completion of this deal. The significance of Clearwire is that through licenses and long-term leases it holds the vast majority of frequencies in the 2.5 GHz Band, that is emerging as one of the most important bands for the future deployment in the U.S. of LTE, and is uniquely positioned as a common band for LTE networks on all continents. Furthermore, this valuable Band includes more bandwidth (about 190 MHz), or potential broadband capacity, than any other band that is, or is likely to be, allocated to mobile communications services.

A complication inherent in the review and assessment of the value and possible harm that would be generated by unconditional approval, or approval with conditions, or rejection of the various related Sprint transactions is that Sprint's competitive viability as the #3 mobile player in the U.S. has been compromised by a series of errors. These errors began with Sprint's 2005 acquisition of Nextel. Since 2008 errors have been compounded by Sprint's stewardship as majority investor of the increasingly valuable 2.5 GHz spectrum assets of Clearwire. Ideally these assets should be exploited to serve Sprint's own purposes and the broader public interest. Sprint has not lived up to the promises it made in its Public Interest statement to win approval of the key 2008 transaction in which its 2.5 GHz spectrum holdings were combined with those of Clearwire, giving effective control of this Band in the U.S. to a single entity⁴.

The FCC and other stakeholders in the U.S. telecommunications-information-entertainment (T-I-E) industry now confront the challenge of deciding how to reconcile the goals of: (1) ensuring healthy competition in the U.S. mobile market, that depends at a minimum on a strong, sustainable #3 competitive operator, a role for which the current #3 player, Sprint, has through its own missteps leading up to the SoftBank transaction, become a doubtful candidate; and (2) stimulating the most widespread and effective exploitation of the valuable 2.5 GHz Band for the benefit of all customers and the overall development of mobile broadband access services in the U.S.

These two goals are consistent with each other *only if* the capacity that can be exploited within the 2.5 GHz Band becomes open and accessible to several operators and not just to Sprint/SoftBank (or Sprint/Dish) alone. This Band includes about 190 MHz of spectrum compared to only 90 MHz in the AWS-1 band (the other major high frequency band for LTE deployments in the U.S.). The 2.5 GHz Band currently offers the greatest

² <http://tinyurl.com/a8b8hh8>.

³ "Justice Department Backs Limits on Wireless Companies," <http://tinyurl.com/bclxkwf>.

⁴ "DESCRIPTION OF THE TRANSACTION AND PUBLIC INTEREST STATEMENT,"

<http://tinyurl.com/avkkwm8>.

opportunity for expanding the mobile broadband capacity available to U.S. customers in the most congested and spectrum-limited urban areas.

The public interest will be violated if the 2.5 GHz Band is left entirely in the hands of Sprint, ensuring that much of its sorely needed capacity will remain unused and unavailable for many more years.

The public interest will be violated if this Band is left entirely in the hands of Sprint, thereby ensuring that much of its sorely needed capacity will remain unused and unavailable to U.S. customers for many more years. This outcome is foreseeable, given Sprint's record as a steward of the Band since 2008. In the five years since then, Sprint has failed to live up to its public interest commitments, including an open access business model. Moreover, its current strategic intent is not to offer reasonable wholesale access to third parties in future to frequencies that it does not need for its own purposes. This intent is evident in Sprint's filings in FCC Docket 343 in support of the SoftBank transaction.

The key to cutting the potential Gordian knot in reconciling the two goals just outlined lies in the recognition that Sprint, or a revitalized Sprint/SoftBank or Sprint/Dish entity, needs only a minor portion of the LTE capacity that can be deployed at 2.5 GHz in order to be able to build a national LTE network that will be competitive with Verizon, AT&T, and T-Mobile. All of these operators have, or in the case of the #4 operator, T-Mobile USA, will soon have substantially superior LTE networks to Sprint's LTE capacity. Absent a contribution from Clearwire in the near term, Sprint will have access to only 2x5 MHz of spectrum in its PCS (1.9 GHz) G Block license for the deployment of LTE⁵. In the case of its acquisition by Dish, Sprint would also gain access to Dish's 40 MHz of spectrum in the 2 GHz Band that was recently approved for terrestrial deployment by the FCC.⁶

⁵ An additional 2x5 MHz of spectrum in the 800 MHz band for LTE will become available once the Nextel network is finally shut down later in 2013; in contrast T-Mobile will be able to deploy LTE in 2x20 MHz channels in the AWS band in many important markets while Verizon is in a position to add 2x10 MHz LTE deployments in the AWS band to its existing 2x10 MHz deployments in the 700 MHz Band.

⁶ <http://www.fcc.gov/document/aws-2000-20202180-2200-mhz-aws-4-order-adopted>.

It should be possible to trigger a new market dynamic to ensure a long term effectively competitive market for mobile broadband access services.

Fortunately, there is an alternative outcome of the proposed Sprint transactions other than approval with no or minimum conditions that can enable both the public interest and competitive goals to be met. This outcome would serve the public interest by making the 2.5 GHz Band fully available for LTE services offered by multiple providers thereby triggering a new market dynamic to ensure a long term effectively competitive market for mobile broadband access services in the U.S. The path to this outcome requires the establishment of a Clearwire free from majority control by Sprint or New Sprint. Clearwire could then operate as an open wholesale provider of LTE capacity able to attract customers and investors other than Sprint on a non-discriminatory basis, with Sprint enjoying guaranteed access on a "right-of-first-refusal" basis to as much bandwidth as it needs for its purposes. Alternatively, Clearwire could be required to divest much of its 2.5 GHz holdings to other mobile services providers who would exploit them productively, while Sprint would retain the frequencies it needs to deploy a competitive national LTE network. The Sprint/SoftBank transaction (or Sprint's acquisition by Dish) could be approved subject to this condition. Compensation for Sprint's relinquishing control of Clearwire could be provided either directly or through the sale of 2.5 GHz spectrum assets. In either case, a platform would be created on which Sprint would be able to build its long-term competitiveness.

The justification for this preferred outcome is examined in the remainder of this article.

New Sprint Good, Sprint/Clearwire Bad

The current #3 U.S. mobile operator, Sprint Nextel (Sprint), is finally taking an initiative – the acquisition of a 70% stake in its business by SoftBank of Japan – that may put it on the path to becoming an effective and sustainable competitor in the U.S. mobile market. The goal and potential consequences of this transaction will serve the public interest. This transaction has sparked a counterbid for Sprint from Dish Network that would also strengthen Sprint's financial (and in this case spectrum) resources to build a competitive LTE-based business.

Approval of the Sprint/Softbank transaction (or possibly the Dish acquisition) is justified to provide a sustainable basis for a strong #3 mobile competitor (and to complement the emergence of a viable #4 national competitor, T-Mobile USA) that will prevent the development of a Verizon/AT&T duopoly. As we predicted in October 2011 ("*T-Mobile USA: A Better Future Without AT&T*," *BNA Daily Report for Executives*, October 6, 2011) T-Mobile has been able to build on the spectrum assets acquired from AT&T when the latter was obliged

to abandon this acquisition (in our opinion for the benefit of market competition and customers) to deploy a competitive national LTE network. If the SoftBank and the alternative Dish transaction are blocked and no other contender emerges, Sprint is unlikely to be able to improve its competitive posture and develop a competitive set of LTE-based services at the national level comparable to those of the Big Two or even of the #4 operator, T-Mobile.

Sprint has also launched a parallel bid contingent on approval of the SoftBank transaction to bring Clearwire fully under its control in the combined Sprint/SoftBank entity (New Sprint). In contrast to the Softbank transaction, approval of this second initiative would be harmful to the public interest, as would its completion in the event that Dish was to acquire Sprint.

Consummation of the Clearwire deal is not essential for New Sprint to succeed.

Despite Sprint's assertions, consummation of the Clearwire deal is not essential for New Sprint to succeed. Sprint does not need access to the entire portfolio of 2.5 GHz spectrum held by Clearwire to implement its LTE-based, i.e., the next generation globally dominant mobile broadband technology, Network Vision. Furthermore, the characterization of Clearwire's absorption into Sprint/SoftBank as the only path for Clearwire's own salvation is not justified, any more than was AT&T's assertion in 2011 that T-Mobile would be doomed if it did not merge with AT&T. The potential interest of other parties with access to ample financial resources in Clearwire and its spectrum assets is demonstrated by Dish Network's \$25.5 billion bid to acquire Sprint, which, as noted, anticipates that the Sprint/Clearwire deal will go through, as well as the offer that Clearwire has acknowledged receiving from a strategic buyer, "Party J," widely believed to be Verizon Wireless,⁷ to acquire some of Clearwire's spectrum leases.

There are alternative models for Clearwire or the 2.5 GHz Band that would enable Sprint to build and offer as much network capacity as it needs to compete against the Big Two, while serving the public interest by making significant quantities of 2.5 GHz spectrum accessible to other mobile services providers and to non-Sprint customers to create value where Sprint will not. The justification for removing Clearwire and its 2.5 GHz spectrum assets from the control of Sprint is explained below.

Sprint's Current Prospects

Absent SoftBank or Dish, or perhaps another contender, Sprint's future looks bleak, given its past business mishaps. These include: (a) The acquisition of

⁷ Clearwire Preliminary Proxy Statement, Amendment No. 3, filed with the Securities and Exchange Commission, April 12, 2013, at p. 38. The Wall Street Journal identified Verizon Wireless as Party J,

http://online.wsj.com/article/SB10001424127887324345804578424514105025922.html?mod=googlenews_wsj.

Nextel; (b) The pursuit of the niche WiMAX technology in the 2.5 GHz Band well after it became apparent that the alternative mobile broadband technologies of HSPA (High Speed Packet Access) and LTE would confine it to a small niche; and (c) Its dead-on-arrival hosting arrangement with LightSquared, which brought it some \$200 million in revenues, but when it had to be abandoned, well after its widely anticipated "sell by date," left Sprint in October 2011 devoid of adequate bandwidth to present a credible LTE-based Network Vision. Sprint has also damaged its own interests through its turbulent and mutually harmful relationships with its majority owned subsidiary, Clearwire, over many years and its inability to sustain a productive partnership with its former cable TV partners who invested in Clearwire and were MVNOs (Mobile Virtual Network Operators) on its and Clearwire's networks. The largest cable operators, led by Comcast, finally decided, in late 2011, to abandon Sprint and Clearwire and align with Verizon in both the fixed and the wireless broadband markets, even though Verizon had been one of Comcast's arch rivals in fixed broadband access services, a market in which Sprint does not participate.

Consequently, Sprint's ability to finance the deployment of a competitive LTE network has been compromised. Furthermore, the company now finds itself in a position of not having enough spectrum to deploy such a network efficiently, unless it can make use of Clearwire's 2.5 GHz frequencies. The SoftBank transaction is designed to overcome Sprint's financial limitations and to give the new Sprint/SoftBank entity greater economies of scale and negotiating power with equipment and device suppliers thanks to the commonality of LTE technology between SoftBank in Japan and Sprint in the U.S. Sprint has also argued, implicitly confirming the deficiencies of its own strategies and tactics in the U.S., that competition in the U.S. market and U.S. customers will benefit from the injection of the innovative and entrepreneurial philosophy and initiatives that have fueled Softbank's impressive success in Japan as #3 player against the two Japanese incumbents, NTT DoCoMo and KDDI, since its acquisition of the Japanese assets of Vodafone.

In contrast to SoftBank (see Table 1) the Dish acquisition would not lead to economies of scale in the mobile arena, although it would provide much needed financial resources. Unlike Sprint/Softbank, a Sprint/Dish entity would be in a unique position to offer bundled mobile and satellite video services from within the portfolio of its own services, although the competitive or market impact of this bundling is less likely to be significant compared to the value of greater economies of scale in the mobile sector. This combination should also be able to achieve significant savings and synergies in billing, customer service and other U.S.-based operations that will not be available to Sprint/SoftBank.

Table1: Comparison of Sprint/SoftBank and Sprint/Dish Transactions

Potential Benefit	Sprint/SoftBank	Sprint/Dish
Additional financing for LTE deployment	Yes	Yes – but would carry a much greater debt than Sprint/SoftBank
Additional spectrum for LTE	No	Yes – 40 MHz in 2GHz band ¹
Greater economies of scale for mobile devices and equipment	Yes	No – and LTE in 2 GHz band may be unique to Dish

Table1: Comparison of Sprint/SoftBank and Sprint/Dish Transactions

Potential Benefit	Sprint/SoftBank	Sprint/Dish
Improved global broadband roaming possibilities	Yes, with access to 2.5 GHz frequencies	Yes, with access to 2.5 GHz frequencies
Bundled offers of mobile broadband and satellite video services	No	Yes ²
Synergies/cost savings in U.S.-based business operations	No	Yes

Notes: 1. Dish also holds spectrum licenses in the 700 MHz Lower Band unpaired E block across the U.S. (with the exceptions of the major metropolitan areas of Boston, New York, Philadelphia, Los Angeles and San Francisco) that could eventually be used for a supplemental 5 MHz downlink LTE deployment or for mobile TV services comparable to Qualcomm's abandoned MediaFLO service. 2. However, the claim by the Chairman of Dish, Charlie Ergen, that a Sprint/Dish entity will be able to offer customers the exact same voice and broadband data and video capabilities outside as well as inside their homes⁸ is exaggerated, or limited to customers in low density areas, where the number of simultaneous users will not overwhelm the limited shared capacity of wireless access networks. In urban and suburban areas, where the majority of U.S. residents live, the broadband traffic volumes they generate can only be met with the help of the larger capacities of wired networks, which neither Sprint nor Dish operate, from cable operators or telephone companies. Several of these competitors can already make the same claim more credibly than a future Sprint/Dish, especially since the establishment in 2012 of cartel-like operating and cross-selling relationships between Verizon and four cable operators⁹.

The arguments in favor of approving the Sprint/SoftBank transaction have considerable merit, although there has been no discussion or acknowledgement so far by Sprint that the conditions and dynamics of the U.S. mobile market in 2013, and beyond, are different from those of the Japanese market over the period between 2006 and 2012, when SoftBank developed into a powerful force that is poised to become the #2 provider there. Several of the pioneering ideas that SoftBank introduced in Japan, such as a wide variety of handset pricing options and handset/subscription packages, are already well established in the U.S., while the regulatory climates and cultural behavior and priorities of customers in the two countries are different. It is far from obvious, although not impossible, that SoftBank will be able to formulate and introduce different innovative, pioneering offers for customers in the U.S. that will have as substantial an impact on the market and competition as its initiatives have had in Japan. Nevertheless, even without such an impact, the benefits of the additional financial resources and greater economies of scale for Sprint brought by the SoftBank acquisition should strengthen Sprint as a viable #3 operator. This outcome would reduce the risk or probability of further decreases in the competitive intensity and relative

⁸ "Dish Network bids \$25.5b for Sprint Nextel," <http://tinyurl.com/bh7swzu>.

⁹ "Verizon, Comcast Airwaves Accord Wins Antitrust Approval," <http://www.bloomberg.com/news/2012-08-16/verizon-comcast-airwaves-accord-wins-antitrust-approval-1-.html>.

price/performance of the U.S. mobile broadband market compared to other countries.¹⁰

There is reasonable justification to approve either proposed transaction.

There is reasonable justification for approval of the basic structure of the Sprint/SoftBank transaction, or for welcoming the injection of additional financial resources as well as more spectrum and satellite video services from Dish. Such is not the case with the accompanying Sprint/Clearwire deal. This deal is not essential to the future success of the Sprint/SoftBank or the Sprint/Dish entity, and is harmful to the public interest. The following paragraphs explain why the consequences of its approval would be harmful and how an alternative superior solution can be constructed.

Alternative solutions for Clearwire or the 2.5 GHz Band could give the Sprint/SoftBank or Sprint/Dish entity access to enough spectrum to be competitive in the LTE environment, while avoiding the harm inherent in Sprint's continuing control of Clearwire's assets. It would serve the public interest effectively as well as the interest of all U.S. customers in achieving the most productive exploitation of the scarce public resource (2.5 GHz spectrum) that is the most valuable component of Clearwire's assets. The Sprint/Dish entity could also exploit Dish's 40 MHz of licenses in the 2 GHz band, although they will only become practically available for LTE services later than the 2.5 GHz Band in which LTE deployment has already begun.

Recent History and Growing Value of the 2.5 GHz Band

The FCC's dilemma is that since its approval in 2008 of the combination of Sprint's and Clearwire's frequencies in the 2.5 GHz Band, this Band has effectively been in the hands of one entity namely, Clearwire. The Band has remained sorely underutilized throughout this period while at the same time the FCC has been striving to find more spectrum to allocate to commercial mobile communications services. Clearwire has not delivered the benefits and created the value that were presented as justification for this consolidation of 2.5 GHz licenses into the hands of one operator. As a consequence, this Band has remained largely unexploited for mobile broadband services despite the growing demand to make more spectrum available for these services to help handle rapidly rising volumes of traffic efficiently, and despite the promises made by Sprint and Clearwire in 2008 that they would exploit this spectrum asset productively.

The 2.5 GHz Band is critical for the development of the LTE-based mobile broadband infrastructure in the U.S. because: (a) There is more capacity available in the 2.5 GHz Band for mobile services than in any other frequency band, at a time when the supply of spectrum for mobile communications is coming under increasing

¹⁰ "The corporate tie that binds America to a slow internet," Financial Times, February 25, 2013.

pressure as demand for services and traffic volumes are growing exponentially; and (b) The 2.5 GHz Band is anticipated to become the most widely used common band for mobile broadband globally across continents which, until now, have had few if any common frequencies to facilitate international roaming. As a growing number of countries in Asia, Latin America, Europe, the Middle East and Africa allocate 2.5 GHz frequencies to mobile broadband communications, this Band will become a natural platform to support global roaming in one mobile device. In this role the Band will mitigate the formidable engineering and economic challenges that are confronted by device and equipment developers in trying to accommodate the maximum number of frequencies possible with the widest geographic compatibility within a single “global” handset. The value of global harmonization in the context of wireless networks is experienced by many international travelers for business and tourism who take advantage of the global standardization of Wi-Fi so that their laptops, tablets and “smartphones” can make use of Wi-Fi “hot spots” from Berlin to Beijing, London to Lagos, New York to New Delhi, San Diego to Santiago, and Reykjavik to Riyadh.

An Opportunity to Align U.S. Spectrum With the World

A major obstacle until now to building alignment wherever possible in mobile broadband spectrum between the U.S. and the rest of the world, as well as to expanding 2.5 GHz-based mobile broadband capacity domestically, is the result of decisions about the use of these frequencies made by Clearwire and its majority owner Sprint. These frequencies have until now and only in small measure been devoted to WiMAX, which is a niche technology with few economies of scale, and a commercial and development road map that is rapidly coming to an end. WiMAX has even been abandoned in favor of LTE by its former champion, Intel that had hoped to use it as a vehicle to become a significant force in chipsets for mobile communications. The bulk of the capacity available in the 2.5 GHz Band has remained unused.

Fortunately, substantial momentum has developed, due in part to the initiatives and to the credit of Clearwire to build large economies of scale and commitments of major operators across the world to the deployment of the TDD (Time Division Duplex) version of LTE (often referred to as TD-LTE) in unpaired 2.5 GHz frequencies. TD-LTE has been designed for maximum commonality of hardware and software and interoperability with the companion FDD (Frequency Division Duplex) version of LTE for deployment in paired 2.5 GHz. This development is manifest in the formation and progress of the GTI (Global TD-LTE Initiative) established in early 2011, of which Clearwire is a founding member, and the substantial plans for, and initial deployments of, TD-LTE in the 2.5 GHz Band in China, Japan, Europe, and the Middle East. The value and momentum of TD-LTE is being further reinforced by an emphasis among its champions on the combination of FDD LTE and TD-LTE capability within one mobile device to enable customers to exploit mixes of TD-LTE and FDD LTE deployments as are envisaged by several operators, including Sprint.

The 2.5 GHz Band Under Sprint Will Remain Underutilized

At the time of the consolidation of Sprint’s and Clearwire’s 2.5 GHz frequencies into Clearwire’s spectrum portfolio, which gave Sprint a majority stake in Clearwire, the following commitments were made to secure approval of this transaction, namely that it would:

(i) Enable operational efficiencies by allowing the parties (Sprint and Clearwire) to share equipment, transmitter sites, and back office systems, and obtain volume discounts on equipment. Sprint and Clearwire also cited their commitment to an open network;

(ii) Allow the parties to provide service without having exclusion zones between their operations and make it easier for them to have enough contiguous spectrum for the 10 and 20 megahertz channels they need to meet consumer demand; and

(iii) Enhance competition and consumer choice through Clearwire’s commitment to allow MVNOs, i.e., wholesale customers, onto its network. Several investors in Clearwire would become MVNOs competing with Clearwire, and would enhance their products and services with wireless broadband mobility.

The first of these commitments has been minimally satisfied, although it was entirely within the ability and responsibility of Sprint to do so. For example, the proportion of Clearwire’s transmitter sites that are shared with Sprint’s, as we estimate been around 5%. The extent of this sharing over time from Sprint should be verified by requesting specific information about the overlap between Clearwire’s and its own sites over time. The second commitment is a strange one to read today. It is contradicted by Sprint’s current claims in its filings this year in FCC Dockets 12-343 and 12-269 of severe impairments to the value of Clearwire’s 2.5 GHz spectrum (post-consolidation) as a result of licensing, legacy regulatory, propagation and technical factors that allegedly complicate the utility of this spectrum in terms of coverage for deploying competitive mobile broadband services. These claims are designed to justify the much lower valuation of 2.5 GHz spectrum embedded in Sprint’s bid to acquire 100% control of Clearwire compared to the valuations that are derived from benchmarking assuming there are at this time no material impairments to the use of 2.5 GHz spectrum for mobile broadband in the U.S.

Opposing Views of the Value of 2.5 GHz Frequencies

Sprint is reportedly valuing Clearwire’s 2.5 GHz spectrum at \$0.21 per MHz-POP¹¹. Sprint has also commissioned an external study that produced an even lower value for these frequencies of \$0.05-0.14 per MHz-POP¹². These low values are factors of *ten to three*

¹¹ “Sprint chief defends Clearwire deal as a whole,” <http://www.thedeal.com/content/tmt/sprint-chief-defends-clearwire-deal-as-a-whole.php> - \$ per MHz-POP is a metric commonly used to express the value of spectrum. It is the price paid for a spectrum license divided by the product of the amount of bandwidth (in megahertz) included in the license, multiplied by the population (POP) in the area that the license covers.

¹² “Value and Utility of the U.S. 2.5 GHz Spectrum Band,” Kostas Liopiros, Sun Fire Group LLC, February 27, 2013, ac-

times smaller than the values of around \$0.50 per MHz-POP that are based upon benchmarking the value of 2.5 GHz spectrum against comparable spectrum for mobile broadband deployments.¹³ In two other recent studies published in February and March 2013 (including one by the authors of this article) these values have been calculated to lie within the range of \$0.31-0.70.¹⁴

The evidence in favor of the higher values is powerful, including that: (1) Low values attributed to the spectrum by Sprint and Dr. Liopiros are significantly lower even than the value of \$0.255 per MHz-POP given to the 2.5 GHz spectrum contributed to Clearwire by Sprint in 2008¹⁵. Yet the value of all spectrum for mobile communications has risen substantially over the past five years as volumes of traffic have grown much more rapidly than increases in network capacity achievable through the combined impact of the exploitation of more spectrum as it becomes available and put into service and the deployment of more efficient technology that can deliver greater capacity per MHz; (2) New network architectures (small cells) that can take advantage of the characteristics of 2.5 GHz frequencies that are otherwise disadvantages (relatively low propagation ranges and through-wall penetration for indoor use) compared to lower frequencies in traditional macro-cellular networks are being deployed and planned by operators around the world; (3) Other factors driving values for unpaired 2.5 GHz spectrum that Clearwire possesses, such as the recent technological developments and commitments by major and minor operators to TD-LTE outlined earlier.

These phenomena have been ignored in Sprint's valuation of this spectrum and the study it commissioned, which adopted a backward-looking and now obsolescent perspective on how this spectrum can be exploited in mobile broadband networks, even though Sprint is fully cognizant of their value¹⁶; and (4) Sprint's and Clearwire's own repeated enthusiastic pronouncements to all audiences (investor presentations, industry conferences, and press releases) of the unique value of Clearwire's 2.5 GHz spectrum holdings. e.g., 160 MHz spectrum depth in the top 100 markets, including substantial amounts of the allegedly significantly impaired frequencies within the Band, makes no mention of these impairments, and to the contrary presents these holdings as the basis of a significant competitive advantage against even the much larger Big Two operators.

cessible on the Sprint web site at http://newsroom.sprint.com/article_display.cfm?article_id=2528.

¹³ For example the 2006 auction of AWS licenses across the U.S. resulted in an average price of \$0.54 per MHz-POP and 2.5 GHz frequency licenses in Hong Kong auctioned in March 2013 were awarded at an average price of \$0.57 per MHz-POP.

¹⁴ "Valuation of Clearwire's 2.5 GHz Band Spectrum Assets," Martyn Roetter and Alan Pearce, Information Age Economics, <http://apps.fcc.gov/ecfs/document/view?id=7022124994>; "An assessment of the economic and industry reasonableness of Sprint's offer for Clearwire," Furchgott-Roth Economic Enterprises and Analysis Group, <http://apps.fcc.gov/ecfs/document/view?id=7022129932>.

¹⁵ *ibid*, Information Age Economics, in Appendix

¹⁶ See for example, "Sprint goes Public with LTE Small Cells, Hires ALU," <http://www.wirelessweek.com/news/2012/08/sprint-goes-public-lte-small-cells-hires-alu>.

It is impossible to reconcile the content of Sprint and Clearwire filings to the FCC with repeated statements they have made over several years to the investment community and other audiences.

The positions taken with respect to the merits of the Sprint/SoftBank and Sprint/Clearwire transactions present diametrically opposed evaluations of the utility of 2.5 GHz frequencies for deploying and operating mobile broadband services and attribute dramatically different values to this spectrum that differ by factors of between three and ten times. Sprint and Clearwire adopt mutually inconsistent positions on this question depending on which audience they are addressing, i.e., a low valuation of the utility of 2.5 GHz spectrum when submitting arguments to the FCC, and implicitly a much higher valuation in investor presentations, industry conferences and many other public forums. Most egregiously these contradictory or irreconcilable statements are publicized simultaneously, perhaps in the hope or the assumption that fundamental inconsistencies between them will be overlooked by the FCC and the other audiences to which they are presented.

In their filings to the FCC, Sprint and Clearwire argue that substantial quantities of Clearwire's 2.5 GHz frequencies, notably those included in its leases of EBS (Educational Broadcast Service) licenses are substantially impaired as a result of the conditions associated with these licenses. They are allegedly not even worthy of being included in the FCC's spectrum screen. EBS frequencies constitute a majority (over 110 MHz) of the spectrum in the 2.5 GHz Band and the majority of Clearwire's holding in many markets including major ones such as New York and Los Angeles.

It is impossible to reconcile the content of these FCC filings, with repeated statements from both Clearwire and Sprint over several years to the investment community and other audiences about the unique advantages of this spectrum in enabling them to deploy and deliver mobile broadband capacity that even the much larger Verizon and AT&T will not be able to match¹⁷. Verizon agrees with the enthusiastic version of Sprint's assessment of the value of Clearwire's 2.5 GHz spectrum, and has been asserting that the FCC should include almost all of it in the spectrum screen used by the agency as a guideline to determine whether an operator has, or will acquire through a transaction, such a large spectrum portfolio that it will threaten the effectiveness of competition in the mobile market.

If Clearwire's 2.5 GHz spectrum holdings are considered to be almost entirely suitable for mobile broad-

¹⁷ For recent examples see Interview: CTO, Sprint, March 19, 2013: "Interoperability between FDD and TDD offers new opportunities," <http://tinyurl.com/aoly8xf>; and

Clearwire Presentation to the Goldman Sachs 21st Communacopia Conference, September 19, 2012, http://files.shareholder.com/downloads/CLWR/2074419665x0x600991/32db5f93-ac2a-4ead-958e-7a2cbe9fd9ae/2012%209%2019%20Communacopia_Hope.pdf

band deployments, and therefore appropriately included in the FCC's spectrum screen, then the Sprint/SoftBank/Clearwire operator would hold almost twice as much spectrum as the Big Two operators¹⁸. New Sprint only needs a portion of the 2.5 GHz held by Clearwire (perhaps no more than 40 MHz) in order to build a nationally competitive LTE network. Even including the spectrum currently occupied by Clearwire's WiMAX systems, which could be phased out in the next 5 years or sooner, it is therefore likely that significant amount of bandwidth in the 2.5 GHz Band will continue to remain unused for many years if Sprint retains control of Clearwire.

Sprint has shown little real interest in pursuing a future wholesale business for the 2.5 GHz spectrum.

Sprint itself has admitted that the third commitment it made in 2008 has not been met. A quote in one of Sprint's filings in FCC Docket 12-343 in response to criticism of the absence of other wholesale customers for the Clearwire network says it all, and indicates that Sprint has little interest in pursuing a future wholesale business for the 2.5 GHz spectrum: "Nearly all of Clearwire's wholesale business already comes from Sprint, and there are alternatives for wholesale customers in the marketplace."¹⁹ Moreover, Sprint implicitly blames the current absence of third party MVNOs on Clearwire's network on the other potential MVNOs or partners with whom it has negotiated. This absence is advanced to support Sprint's assertion that there is no viable alternative for Clearwire at this point but to accept its full embrace. Yet Clearwire itself proclaimed shortly before the announcement of the Sprint/SoftBank transaction, "Clearwire plans to be the leading wholesale provider of 4G LTE Services."²⁰

The one common factor in all the negotiations that Sprint says it has undertaken in good faith is Sprint itself. The failure to build mutually beneficial MVNO relations or partnerships is most probably a consequence of the unreasonable terms and conditions that Sprint has sought to impose in these deals, not an indicator that there were and are no realistic opportunities. The abandonment of Sprint by its former cable partners is one sign of this dynamic. Review of documentation from these negotiations between Sprint and its potential and erstwhile partners would establish whether or not it is Sprint itself that is responsible for Clearwire's failure to attract or retain other financially powerful MVNOs to its infrastructure, challenging its claim that it has consistently done all that lay within its power to help Clearwire achieve commercial success.

¹⁸ This scenario would enable Verizon (and AT&T) to argue that any future or ongoing acquisitions of additional spectrum by them could and should not be considered as having anti-competitive consequences.

¹⁹ Sprint Nextel et al., "JOINT OPPOSITION TO PETITIONS TO DENY AND REPLY TO COMMENTS," <http://apps.fcc.gov/ecfs/document/view?id=7022121075> (see p. iii)

²⁰ Ibid, Clearwire Presentation.

If Clearwire is fully absorbed into a Sprint/SoftBank (or a Sprint/Dish) entity it will perpetuate an instance of the undesirable "one retail operator-per-band" distribution of LTE-capable spectrum in the U.S. that is also found in the mutually non-interoperable 700 MHz Lower Band (dominated by AT&T) and Upper Band (held exclusively so far by Verizon) as well as the emerging situation for mobile communications in the 2.3 GHz band (AT&T again). These other situations have developed as a result of actions by the Big Two operators. They have significant implications for public policy with respect to the effectiveness of competition in the market, the impact on customers and the negotiation of international roaming services. In our opinion these implications have not yet received the level of attention let alone the action that they deserve to mitigate their harm to the interests of customers and to the competitive vibrancy of the marketplace.

Other relevant questions in a public policy review of the implications of the Sprint/Clearwire deal are its potential impact on the legitimate interests of the licensees of EBS spectrum that have signed long-term leases with Clearwire and its consequences for the concentration of the quantity of spectrum (a limited resource) that any one operator should be allowed to hold.

The Vulnerability of EBS Licensees

A significant proportion of the 2.5 GHz spectrum held by Clearwire is in the form of long-term leases from the holders of EBS (Educational Broadcast System) licenses. These licenses can only be held by non-profit educational entities for educational purposes, but they also have the ability to access new mobile broadband services and derive revenue. EBS spectrum covers the majority of the 2.5 GHz Band. EBS licensees that have leased their licenses to Clearwire should be especially concerned about what will happen when it would be reasonable to review and possibly revise their terms and conditions, for example when the licenses themselves come up for renewal. EBS licenses will be subject to renewal within the next ten years, and in many cases within the next two to five years, or even earlier.

Sprint is demonstrating that it is fully prepared to exercise its monopsony power.

As long as there is in practice only one potential lessee, i.e., a monopsony buyer, namely Clearwire or its successor, that can conceivably make productive and profitable commercial use of these licenses, the EBS spectrum licensees are unlikely to receive a fair market price for renewing the leases of their licenses. Sprint is demonstrating by its undervaluation of Clearwire's 2.5 GHz spectrum today, to minimize the amounts it has to pay to acquire the shares of minority shareholders, that it is fully prepared to exercise its monopsony power. In this proposed transaction, Sprint is arguing that there is no alternative investor in, or partner for, Clearwire, and therefore that the price it is offering for the Clearwire shares that it does not yet own is fair. Given the chance, Sprint is expected to adopt the same position in future lease renegotiations with EBS spectrum licensees, of-

fering a price that is well below that which these 2.5 GHz frequencies would command if the EBS licensees were made available in a competitive market, with prices subject to the laws of supply and demand and competitive bidding.

An Undesirable Concentration of Spectrum

Spectrum is a scarce resource and an essential input for providing mobile communications services. If one or two competitive operators control disproportionately large amounts of this finite resource their rivals will be unable to compete effectively, no matter how well they may perform in terms of customer service, innovative approaches to services and pricing and other aspects of the business. The capacity they can deliver, and hence the numbers of customers they can serve at high quality, will be comparatively stunted.

The Department of Justice has recently expressed its concern about this issue that is addressed in a current FCC Docket 12-269 (“In the Matter of Policies Regarding Mobile Spectrum Holdings”). The DOJ has submitted a filing in this Docket that expresses its concern²¹. The spectrum holdings of the four major U.S. mobile operators are displayed in Table 2, including a potential future Sprint/SoftBank and Sprint/Dish entity with full control of Clearwire. This Table demonstrates the size of the spectrum-related antitrust concern that this possible outcome of the current Sprint transactions raises. If the Sprint/Clearwire deal is approved as well as either the SoftBank or Dish transaction then the resulting entity would control more than twice the amount of scarce spectrum as any other operator, and possibly four times as much as T-Mobile.

Table 2: Population-Weighted Average Spectrum Holdings of National U.S. Mobile Operators, MHz

Licensee	Average Spectrum Holdings, MHz ¹
Verizon Wireless	107.3
AT&T Mobility	128.3 ²
Sprint Nextel	53
T-Mobile	57 (66.2) ³
Sprint/SoftBank with Clearwire	184.5 ⁴
Sprint/Dish with Clearwire	224.5 ⁵

Source: FCC 16th Annual Report, March 21, 2013, http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0321/FCC-13-34A1.pdf; IAE estimates

Notes: ¹. There are significant variations in these spectrum holdings by individual market;

². Includes 20 MHz of WCS (2.3 GHz spectrum) added to the FCC’s spectrum screen in December 2012;

³. Higher figure assumes T-Mobile will acquire MetroPCS;

⁴. In many major markets this entity would control 213 MHz based on Clearwire’s own statement of licenses covering 160 MHz;

⁵. In many major markets this entity would control 253 MHz based on Clearwire’s own statement of licenses covering 160 MHz.

Why One Retail Operator-per-Band is Unhealthy for Competition

The control of the 2.5 GHz Band, a major band for LTE deployment in the U.S., by only one operator is against the public interest. It contributes to and extends

²¹ “Ex Parte Submission of the United States Department of Justice,” <http://apps.fcc.gov/ecfs/document/view?id=7022269624>.

the trend toward one retail operator-per-band that has developed for each of the non-interoperable 700 MHz Lower and Upper Bands that are held respectively predominantly by AT&T (3GPP²² band class 17) and Verizon (3GPP band class 13), and more recently for the WCS band (2.3 GHz) that is in the hands of AT&T for the purposes of mobile communications. The “one retail operator-per-band” scenario fosters the development of carrier-specific devices that facilitate operators’ ability to lock in their customers. The devices available, for example the iPhone 5 released in 2012, are less capable if connected to networks of other services providers that do not hold these frequencies to which the customers may want to switch their subscriptions, than if multiple operators hold frequencies in the same interoperable band. In contrast, the prevalent configuration of spectrum licenses in many foreign countries and the situation in the AWS band in the U.S.,²³ involves a distribution of the frequencies in any band between two or more operators.

The emergence of LTE bands occupied by one operator also introduces monopsonies into the negotiation of international roaming agreements. For example, unless other U.S. services providers have access to Clearwire’s 2.5 GHz frequencies, or acquire their own spectrum licenses in this band, foreign operators that deploy LTE in the 2.5 GHz band will only be able to offer roaming services that cover the 2.5 GHz Band in the U.S. if they can reach an agreement with Sprint. Since the 2.5 GHz Band is anticipated to enjoy the widest coverage across the world for LTE deployments, this outcome (a Sprint LTE roaming monopsony in the 2.5 GHz Band) could inhibit or impair the global development of affordable mobile broadband access for the benefit of travelers, both to and from the U.S. In other words, one retail operator-per-band distributions of frequencies reduce the practical freedom of choice of customers by increasing their switching costs between services providers in many circumstances, while introducing undesirable imbalances of power in negotiations between operators for international roaming.

The “one retail operator-per-band” distribution of spectrum is an outcome that public policy should strive to avoid wherever possible and mitigate whenever possible. The reviews for approval of the Sprint/SoftBank and Sprint/Clearwire transactions provide a rare opportunity for the FCC to remove, or at least reduce, this anti-competitive and customer-hostile distribution of frequencies in the important 2.5 GHz Band in the U.S.

²² Third Generation Partnership Project, the global organization responsible for the development of the dominant mobile broadband technology standards.

²³ The public interest of ensuring maximum interoperability of devices and networks has been further eroded by AT&T’s initiative to implement Band Class 17, which is non-interoperable even within the 700 MHz Lower band, as well as with Band Class 13. Non-interoperability, which is already built into an estimated 30 million+ mobile devices in service in the U.S. as of end-2012, will spread its tentacles more broadly in the next few years as inter-band carrier aggregation that combines the 700 MHz one-carrier-only bands with another band is introduced in deployments of LTE-Advanced.

CONCLUSION: New Sprint Yes, Sprint/Clearwire No

The 2.5 GHz Band is a scarce public resource. The rate and extent of its exploitation should be maximized for the sake of U.S. customers, the effectiveness of competition in the U.S. mobile market, and the benefits that will accrue to the overall U.S. economy thanks to the expanded applications of mobile broadband services that it will support.

The 2.5 GHz Band is too important to be left under the centralized control of one retail mobile operator. This finding applies especially to Sprint that has exhibited poor stewardship of this Band. Additionally, Sprint has shown no interest in making available to others the 2.5 GHz frequencies held by Clearwire that will not be needed for its own purposes.

The Sprint/SoftBank transaction could be approved with the condition that Sprint relinquishes majority control of Clearwire and its 2.5 GHz spectrum assets. Arrangements could be made to ensure that Sprint/Softbank will nevertheless have access to the spectrum resources needed to build a competitive national mobile broadband network. These arrangements could include, as a minimum, Sprint's right of first refusal to sufficient capacity at 2.5 GHz to match the LTE capacity of its national competitors. Clearwire itself would otherwise be free to seek financing from other sources, as well as to negotiate wholesale arrangements with other customers, some of whom might be prepared to become part owners or investors.

Sprint could also be compensated for its agreement to relinquish control of the 2.5 GHz Band. This compensation could take several forms. One form might include an award of new spectrum in another Band, such as the PCS (1.9 GHz) H block, which is contiguous to

the G block in which Sprint's LTE network is initially being deployed. Sprint was earlier awarded the G Block as compensation for agreeing to re-band its 800 MHz Nextel frequencies. Other possibilities should be explored since a direct award of the H Block to Sprint would require removal of the provision in the 2012 Spectrum Act to assign this spectrum through a competitive bidding process.

An alternative procedure to providing compensation directly to Sprint could involve requiring the divestiture by Sprint/Clearwire of the majority of its 2.5 GHz licenses and leases as a condition for approval of the Softbank transaction. In this approach Sprint would receive its share of the revenues generated by the sale of these assets, which could fetch prices that are significantly higher than their current valuation by Sprint.

In the event that Dish Network's bid to acquire Sprint became the preferred outcome similar conditions for its approval and options for the future of Clearwire and the 2.5 GHz Band could be implemented.

There is a compelling public interest in enabling and establishing Clearwire as an open wholesale LTE operator, or in otherwise ensuring that the entire capacity of the 2.5 GHz Band is made available to U.S. mobile customers. As a consequence, the full value and positive competitive impact of the exploitation of the entire 2.5 GHz Band would be delivered for the benefit of U.S. customers and the U.S. economy. This prospect justifies a creative search for a new ownership structure for the 2.5 GHz Band that meets Sprint's needs for greater investments to become competitive and more spectrum for LTE deployments than its PCS and 800 MHz frequencies can provide, while freeing the rest of the Band for useful and productive exploitation by other services providers.