AN ASSESSMENT OF THE ECONOMIC AND INDUSTRY REASONABLENESS OF SPRINT'S OFFER FOR CLEARWIRE

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I. Introduction

Before the Clearwire board accepted the $2.97 share offer from Sprint on December 17, 2012, the Special Committee of the Clearwire board commissioned financial analyses of several options for Clearwire's long-term prospects including two scenarios that Clearwire's management had developed for evaluating Clearwire's development strategies for the next decade. Clearwire recently released at least some of these analyses prepared by the firms Centerview and Evercore.[1] The two scenarios, presented in more detail in Appendix A, are as follows:

- In the first scenario or business plan, Clearwire has a single customer case ("SCC"), almost certainly Sprint. In this scenario, Clearwire would be a pure wholesaler of services with a single buyer, and the profit opportunity would be limited. In this scenario, Clearwire becomes cash flow positive in 2018. Centerview and Evercore find little opportunity for financial success in this scenario.

- The second scenario is the multiple customer case ("MCC"), under which Clearwire has multiple wholesale customers. Those customers would likely include other large carriers, in addition to Sprint. In the MCC scenario, AT&T, Verizon, T-Mobile, and every other wireless carrier in America would be a potential customer for Clearwire's new advanced Time Division Duplex Long-Term Evolution ("TDD-LTE") services. In this scenario, Clearwire becomes cash flow positive in 2016, two years earlier than in the SCC scenario. The MCC scenario offers substantial financial possibilities for Clearwire, with Evercore projecting equity values as high as $11.31 per share on a DCF basis.[2] Centerview finds equity values at least as high as $15.50 per share on a DCF basis.[3]

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[1] Centerview Partners made at least three presentations to the Special Committee of the Clearwire Board of Directors, on December 3, 2012, December 12, 2012, and December 16, 2012. Evercore Partners made at least two presentations to the Special Committee of the Clearwire Board of Directors, on December 12, 2012 and December 16, 2012.

[2] Evercore Partners, "Board of Directors Presentation December 12, 2012," (hereinafter "Evercore 12/12/12 Board Presentation") December 12, 2012, p. 15.

[3] Centerview Partners, "Project Canine Confidential Discussion Materials for the Special Committee of the Board of Directors of Collie," (hereinafter "Centerview Canine 12/16/12 Report") December 16, 2012, p. 6. The $15.50 valuation does not include a sale of spectrum. Centerview examines such a sale of more than 11 billion MHz pops of spectrum to DISH at a price of approximately $0.22 per MHz pop and obtains an additional $1.40 per share in equity value. *See* Centerview Partners, "Project Canine Confidential Discussion Materials for the Special Committee of the Board of Directors of Collie," (hereinafter "Centerview Canine 12/12/12 Report") December 12, 2012, p. 11. For this report, we do not consider such a sale of spectrum, but the Centerview

We have been asked by Crest Financial to review these scenarios and the long-term valuations that are associated with them, with a focus on whether they are reasonable in light of economic and industry realities. Our findings, in brief, are as follows:

- The MCC scenario, which was developed by Clearwire management, appears to be the most profitable business strategy the company could pursue.

- Clearwire is uniquely positioned to implement the profitable MCC scenario in the United States, and is likely to be able to do so based on current market and technology trends.

- Spectrum valuations in the United States are rising and are likely to continue to increase, and Sprint's $2.97 offer for Clearwire reflects an extraordinarily low valuation of Clearwire spectrum, given its unique TDD-LTE opportunities. Based on a review of recent transactions, we find that impaired spectrum has sold in the range of $0.21 to $0.50 per Mhz pop and unimpaired spectrum has sold for at least $0.55 per Mhz pop. Furthermore, Sprint's offer corresponds to a spectrum price of approximately $0.11 per MHz pop, not the $0.21 per MHz pop asserted by Sprint.

- Sprint's $2.97 offer for Clearwire does not compensate Clearwire's shareholders for the value attributable to the MCC scenario or for the value of Clearwire's spectrum holdings. Under reasonable assumptions, Centerview's and Evercore's long-term valuations of Clearwire with this business plan are between $9.54 and $15.50 per share. These share price values correspond to spectrum prices between $0.31 and $0.50 per MHz pop.

We review each of these findings in turn.

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analysis clearly indicates that a spectrum sale could be consistent with the MCC scenario and could generate additional cash for Clearwire.

II. The MCC scenario, which was developed by Clearwire's management, appears to be the most profitable business strategy the company could pursue

Centerview was "engaged by the Special Committee of the Board of Directors of Comet [Clearwire] to advise it on matters related to a potential sale or other strategic transaction."[4] In addition to the SCC and MCC scenarios, Centerview reviewed at least three other strategies: a sale of Clearwire to Sprint, a sale of spectrum to DISH, and a Chapter 11 restructuring.[5] Although the MCC option is mentioned at least once in each Centerview presentation, it is not the primary focus of the Centerview analyses. While Centerview consistently finds that the MCC scenario has the highest value for shareholders of all options considered,[6] Centerview expresses skepticism about the MCC scenario by noting three obstacles:

- Clearwire has insufficient resources to fund the MCC scenario, with a $2bn+ funding gap through [the point in time when the company would become] free-cash-flow-positive.
- The MCC scenario assumes significant new wholesale volume, which to date Clearwire has been unable to secure.
- Without additional wholesale customers, the funding gap grows to almost $4bn [which is to say it becomes the SCC scenario].[7]

At least in the presentation made available for public review, Centerview does not examine any of these obstacles or challenges in detail. There is no discussion of why a project that would increase Clearwire's market capitalization by substantial sums could not be financed. There is no discussion of the possibility that new technologies or evolving market demand conditions would alter the attractiveness of a Clearwire wholesale offering. In fact, it is reasonable to anticipate such favorable changes in wholesale markets; these prospects are examined below.

Evercore had a narrower assignment—to determine whether a cash transaction by Sprint to acquire Clearwire "is fair, from a financial point of view, to all non-Sprint shareholders of

[4] Centerview Partners, "Project Galaxy Confidential Discussion Materials for the Special Committee of the Board of Directors of Comet", (hereinafter "Centerview Comet Report") December 3, 2012, p. 4.
[5] Id., p. 6.
[6] Centerview Canine 12/12/12 Report, December 12, 2012, p. 14; and Centerview Canine 12/16/12 Report, p. 6.
[7] Centerview Comet Report, p. 5; *See* also Centerview Canine 12/12/12 Report, p. 20; Centerview Canine 12/16/12 Report, p. 12.

the Clearwire Class A common stock."[8] In its assignment, Evercore "reviewed certain non-public projected financial data related to the Company prepared and furnished to [it] by management of the Company (the 'management projections' [SCC and MCC])." [9] Evercore appears to accept the management projections, including the MCC projections:

> We have assumed that the management projections have been reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of management of the Company as to the future financial performance of the Company under the business assumptions reflected therein.[10]

Evercore provides less commentary than Centerview on the SCC and MCC scenarios, but does estimate the equity value of the scenarios, and finds the MCC scenario has superior equity value to the other options it considers, including the Sprint acquisition.[11] No explanation is provided for why the scenario that leads to a much higher equity value than the Sprint offer is not highlighted in the report. This is a particularly glaring omission given that the purpose of the report is to evaluate whether the Sprint offer "is fair, from a financial point of view, to all non-Sprint shareholders of the Clearwire Class A common stock."[12]

III. Clearwire is uniquely positioned to implement the profitable MCC scenario in the United States, and is likely to be able to do so in light of current market and technology trends

A. The MCC Scenario

Evercore projects that Clearwire would have an equity value, on a discounted cash flow basis, of between $4.14 and $11.31 per share if it pursues and successfully implements the MCC strategy. The valuation range depends on the perpetuity growth rate and the discount rate.[13] Evercore examines perpetuity growth rates between 2 percent and 4 percent, and it considers discount rates between 12.5 percent and 17.5 percent.[14]

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[8] Evercore 12/12/12 Board Presentation, p. 1.
[9] Id., p. 5.
[10] Id., p. 6.
[11] Id., p. 9.
[12] Id., p. 1.
[13] Id., p. 15.
[14] Id., p. 15.

Centerview projects an equity value of between $3.45 and $15.50 per share if Clearwire pursues and successfully implements the MCC scenario, depending on the perpetuity growth rate and the weighted average cost of capital ("WACC").[15] Centerview also considers a scenario in which Clearwire combines the MCC scenario with a sale of more than 11 billion MHz pops of spectrum to DISH; this combined option yields an additional $1.40 per share bringing the range to $4.85 to $16.90.[16] For purposes of this report, we do not consider the proposed sale of spectrum to DISH, but the option of future spectrum sales means that the calculated equity values for Clearwire in the MCC scenario should be viewed as lower bounds since higher values could be obtained with spectrum sales. Centerview examines scenarios with WACC between 10 percent and 17.5 percent, and perpetuity growth rates between 1 percent and 3 percent.[17]

The range of perpetuity growth rates considered by Evercore and Centerview are likely too low. As shown in Appendix B, a review of investment analyst estimates of perpetuity growth rates for Clearwire reveals values of between 3 percent and 7 percent with an average of 4.2 percent. These perpetuity growth rates are almost certainly based on an SCC scenario, not an MCC scenario. The latter would likely lead to even higher growth rates. We believe that it is reasonable to consider perpetuity growth rates of no less than 3 percent.

Furthermore, the range of discount rates and WACC examined by both Evercore and Centerview are likely too high for at least two reasons:

- Centerview presents an "Illustrative WACC Analysis" and estimates that in December 2012, the WACC for Clearwire is 8.9 percent at yield-to-worst and is 9.6 percent at par.[18]
- As shown in Appendix B, investment analysts estimate a WACC range for Clearwire of between 10.5 percent and 14.6 percent, with an average of 12.7 percent. These WACC estimates are likely based on Clearwire's SCC scenario, and might be lower if the MCC scenario were envisioned instead.

[15] Centerview Canine 12/16/12 Report, p. 6.
[16] Id., p. 6.
[17] Id., p. 14.
[18] Id., p. 15.

Given the WACC range for Clearwire estimated by the investment analyst community including Centerview, we believe that it is reasonable to consider only WACC and discount rates below 15 percent.

With the perpetuity growth rates and WACC values described above, the Evercore equity share prices for the MCC scenario range between $10.15 and $11.31 per share.[19] The Centerview equity share prices for the MCC scenario range between $9.54 and $15.50 per share.[20] Both financial advisors project that the SCC scenario will be considerably less profitable than the MCC scenario. Evercore assesses the SCC scenario as leading to a Clearwire share price with *negative* values between -$1.88 and -$0.01.[21] Centerview is equally negative in its assessment, with Clearwire share prices dropping in value to between -$2.33 at the low end and $0.76 at the high end.[22]

A key driver of the profitability of the SCC and MCC scenarios are the underlying capital expenditure projections. Table 1 displays Evercore's and Centerview's projected capital expenditure patterns for the MCC and SCC scenarios as well as recent capital expenditure projections from Morgan Stanley and JP Morgan.[23] While substantially higher than the projections for the SCC scenario, the projected capital expenditures for the MCC scenario are in line with the network build-out costs presented by Clearwire management for the period from 2013 through 2014.[24] If the actual capital expenditure pattern required to support the MCC scenario is in fact closer to either the SCC scenario or the analyst report projections, the MCC strategy would be even more profitable.

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[19] Evercore 12/12/12 Board Presentation, p. 13.
[20] Centerview Canine 12/16/12 Report, p. 14.
[21] Evercore 12/12/12 Board Presentation, p. 15.
[22] Centerview Canine 12/16/12 Report, p. 14.
[23] Clearwire management provided Evercore and Centerview with the SCC and MCC capital expenditure projections. Clearwire Proxy Statement, available at http://www.sec.gov/Archives/edgar/data/1442505/000119312513033200/d474948dprem14a.htm#toc, pp. 54-55.
[24] "[T]he cost of the LTE build…of up to 8000 sites remains at approximately $600 million," equivalent to $75K per site. "Clearwire Corporation's CEO Discusses Q4 2012 Results – Earnings Call Transcript", March 4, 2013; "As of December 31, 2012 we have more than 1,000 LTE sites on air on our network. We expect to have 2,000 LTE sites on air by the end of June 2013 and anticipate expanding our LTE network to 5,000 sites by the end of the year." "Currently, we plan to operate LTE on approximately 8,000 sites by the end of 2014." Clearwire, Form 10-K for calendar year ending December 31, 2012, (hereinafter "Clearwire 2012 10-K") filed February 14, 2013, pp. 9 and 58. These projections equate to network build-out costs of $300 million in 2013 and $225 million in 2014.

Table 1: Projected Capital Expenditures for Clearwire[25]

($ millions)

	2011 (Actual)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2013-2020
MCC Scenario	$220	$157	$327	$294	$235	$390	$510	$614	$714	$745	$3,829
SCC Scenario	$220	$157	$293	$317	$154	$171	$238	$243	$279	$298	$1,993
Morgan Stanley	$226	$141	$580	$300	$200	$200	$175	$175			
JP Morgan	$228	$183	$389	$416	$392	$273	$343	$426	$522	$633	$3,394
JP Morgan	$228	$126	$390	$492	$435	$265	$321	$387	$463	$551	$3,304

The valuations of the MCC business scenario, even at the low end, are well above both the current market valuation of Clearwire and the Sprint offer of $2.97 per share. The high end of the MCC valuations are dramatically above the Sprint offer. It is surprising that Centerview and Evercore do not give the MCC valuations greater consideration. As will be explained in Section V below, Sprint's offer price does not adequately compensate Clearwire's shareholders, given the profitability of the MCC scenario and the value of Clearwire's spectrum holdings.

Both Evercore and Centerview assess Clearwire through other valuation methods, but neither addresses, much less explains, the new TDD-LTE technology that Clearwire is embracing. That omission is unfortunate because the new technology is important to understanding both the unique opportunities before Clearwire and the centrality of the new technology to the MCC business model. The MCC business plan based on TDD-LTE technology is not a pipe dream; it is based on current technological and market realities.

[25] Evercore 12/12/12 Board Presentation, p. 9; Centerview Canine 12/16/12 Report, p. 13; Morgan Stanley, "Clearwire Corporation 4Q12 Preview: Strategic and LTE Update in Focus", February 11, 2013, Ex 8; JP Morgan, "Clearwire", February 13, 2013, Table 3; JP Morgan, "Clearwire", October 25, 2012, Figure 1.

B. Bases for the Profitability of Clearwire's MCC Scenario

The success of Clearwire's MCC business strategy is contingent on several factors:

- the development of TDD-LTE technology and its adoption by U.S. and global carriers;
- industry and public acceptance of the technological superiority of either TDD-LTE on its own or as part of hybrid systems combining TDD-LTE and FDD-LTE;
- the existence of an equipment market to support TDD-LTE, including network and consumer electronic equipment;
- other carriers' demand for Clearwire's TDD-LTE services; and
- sufficient funding.

The first four points are already likely outcomes of current market and technology trends. All that remains to be addressed is the financing of the MCC strategy. We discuss each of these points below as well as the Clearwire board's apparent abandonment of the MCC scenario.

1. The Development and Global Adoption of TDD-LTE Supports Clearwire's MCC Scenario

The Clearwire MCC business case depends on the availability of TDD-LTE network technology. That technology is already becoming widely available in the global market. ABI Research estimates that TDD-LTE networks could reach as many as 4.4 billion people worldwide by 2014.[26] According to the Global TD-LTE Initiative ("GTI"), more than 45 percent of the world's population will be covered by TDD-LTE services in Bands 7, 38, 40, and 41 alone (between 2.3 GHz and 2.7 GHz).[27,28] This is the same portion of the spectrum in which Clearwire's spectrum is located.

2. The Technological Superiority of TDD-LTE Supports the Clearwire MCC Business Plan

Rapid growth in the demand for wireless services has stimulated the development of technologies that offer greater data capacity, faster transmission speeds, and more efficient use of available

[26] ABI research, "TDD LTE –MAKING THE MOST OF 4G," September 10, 2012, p. 8.
[27] The existence of GTI is itself evidence of an established global market for TDD-LTE technology. GTI was founded in 2011 in an effort to advocate cooperation among global operators and industry partners to promote TDD-LTE. Its members now include 51 wireless carriers and 39 partner companies, including Agilent, Ericsson, Qualcomm, and Intel. GTI, "TD-LTE Industry Briefing, January 15, 2013, p. 10.
[28] IDC (sponsored by Clearwire Corporation), "Validating the Market for TDD-LTE in the U.S. Marketplace," August 2012, p. 4.

spectrum.[29] Approximately nine times more data is downloaded than uploaded, and this is expected to increase 25 times over the next five years.[30] Much of this increase is attributable to the proliferation of smart mobile devices (smartphones and tablets), with which users are downloading content in unprecedented volumes. In a market characterized by increasingly asymmetric demand, asymmetric upload and download links are advantageous. Unlike Frequency Division Duplex LTE ("FDD-LTE") technology, TDD-LTE uses a single channel for uploads and downloads and dynamically assigns bandwidth to the uplink and downlink connections based on user requirements. This ensures that capacity usage is optimized at all times. TDD-LTE technology is an integral part of this development, offering unique capabilities that address the evolving needs of the wireless industry.

TDD-LTE supports higher data speeds than a network built using FDD-LTE alone can handle. For example, Softbank, a Japanese carrier, reports speeds up to 110 megabits per second using TDD-LTE handsets on its TDD-LTE network, compared to a speed of 75 megabits per second for FDD-LTE handsets.[31] China Mobile reports speeds of 223 megabits per second using its TDD-LTE network and carrier aggregation.[32]

Despite the clear superiority of TDD-LTE, most American carriers have adopted FDD-LTE technologies for at least two reasons. First, the International Telecommunications Union has assigned most bands of spectrum below 2 GHz, where many American carriers have spectrum, exclusively to FDD-LTE technologies, thus constraining carriers to this sole option.[33] Second, equipment for FDD-LTE technologies has reached market a couple of years earlier than equipment for TDD-LTE

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[29] "Overall mobile data traffic is expected to grow to 11.2 exabytes per month by 2017, a 13-fold increase over 2012. Mobile data traffic will grow at a CAGR of 66 percent from 2012 to 2017." Cisco, "Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2012-2017," February 6. 2013, p. 5; "By any metric, wireless broadband usage in the United States is exploding in popularity. CTIA's recent Semi-Annual Survey revealed that reported wireless traffic in the first half of 2012 totaled 633 billion megabytes (MB), an increase from 526 billion MB in the second half of 2011 and 341 billion MB in the first half of 2011." CTIA – The Wireless Association, "Comments of CTIA – The Wireless Association In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions," *FCC GN Docket No. 12-268*, January 25, 2013, p. 6.

[30] Sophie Curtis, "LTE TDD to make up 25% of all LTE by 2016: Ovum," *Techworld*, June 25, 2012.

[31] Wells Fargo Securities, "Clearwire Corp. CLWR: "CLEAR"-ing Up the Facts and Questions," October 23, 2012, p. 1.

[32] *See* "Asian operators pushing the envelope with LTE Advanced," at http://lteconference.wordpress.com/2013/02/01/asian-operators-pushing-the-envelope-with-lte-advanced/, accessed on February 20, 2013.

[33] FCC, "Public Safety Tech Topic #22 - Application of Emerging Wireless Broadband Technology for Public Safety Communications," at http://www.fcc.gov/help/public-safety-tech-topic-22-application-emerging-wireless-broadband-technology-public-safety-co, accessed on March 1, 2013, *see* Table 4.

technologies. Having begun to build and operate FDD-LTE networks with scarce spectrum holdings, these carriers would find the costs of switching to TDD-LTE networks extremely high.

While most mobile operators in the United States are using FDD-LTE to upgrade their current 3G services,[34] research shows that a hybrid system combining FDD-LTE and TDD-LTE can achieve superior spectrum efficiency, faster transmission speeds, and greater economies of scale.[35] Due to its real-time allocation of bandwidth to uplink and downlink channels, TDD-LTE technology is optimal for high-volume data download usage.[36] In contrast, FDD-LTE technology is optimal for voice usage (which requires paired uplink and downlink channels) and in locations with less dense networks.[37] Current research strongly suggests that a combination of the two technologies, particularly in combination with carrier aggregation, is superior to either technology alone, and certainly to a market that offers FDD-LTE alone.[38]

The unique advantages of TDD-LTE in addressing the growing demand for wireless services and the rapidly expanding TDD-LTE ecosystem suggest that Clearwire's TDD-LTE technology will be in high demand, whether on its own or in combination with FDD-LTE systems operated by other carriers. Clearwire is well positioned to deploy TDD-LTE, dramatically improving the attainability of the profitable MCC scenario.

3. The Rapidly Expanding TDD-LTE Equipment Market Supports Clearwire's MCC Scenario

Superior technology is of little value if equipment to support the technology is not commercially available. For the Clearwire MCC business scenario to be successful, the TDD-LTE technology must not only work well, but a robust suite of network and consumer electronic equipment choices to support the technology must be widely available at affordable prices. Those conditions are met.

An extensive network equipment market is already in place to support this demand for TDD-LTE technology. Large-scale TDD-LTE deployments have already occurred globally and additional

[34] Sophie Curtis, "LTE TDD to make up 25% of all LTE by 2016: Ovum," *Techworld*, June 25, 2012.
[35] Renuka Bhalerao, "The Evolution of LTE TDD," EE Times, May 1, 2012.
[36] Sophie Curtis, "LTE TDD to make up 25% of all LTE by 2016: Ovum," Techworld, June 25, 2012.
[37] Renuka Bhalerao, "The Evolution of LTE TDD," EE Times, May 1, 2012.
[38] Nick Chiu, "Sprint's Network Vision And Clearwire's TDD-LTE In Action," Seeking Alpha, February 16, 2013.

deployments are scheduled to take place in the coming year. Current TDD-LTE markets (and the carriers serving them) include India (Airtel), Sweden (Hi3G), Japan (Softbank), China (China Mobile), and Saudi Arabia (Mobily).[39] Nearly half of the LTE rollouts expected around the world in 2013 and 2014 will be based on TDD-LTE technology. These include Reliance and Aircel in India, VHA in Australia, P1 in Malaysia, and Rostelecom in Russia.[40] Softbank's TDD-LTE network attracted more than 350,000 customers in the first seven months following the rollout in February 2012,[41] and now counts over 700,000 subscribers.[42] China Mobile is pursuing a similarly aggressive rollout of TDD-LTE.[43] TDD-LTE network rollouts encourage the consumer equipment manufacturing segment to scale up production of mobile devices for use on these expanding networks.

Further encouraging the development of the TDD-LTE ecosystem, China's Ministry of Industry and Information Technology ("MIIT", China's telecommunication regulatory body) recently announced plans to release the entire 190 MHz of their 2.5 GHz frequency spectrum for TDD-LTE deployments.[44] That is the same band of spectrum that Clearwire controls in the United States. This, too, will spur device manufacturers to produce innovative mobile devices at scale.

In the United States, TDD-LTE is under discussion in the incentive auction rulemaking comments related to the allocation of the 600MHz spectrum band. [45] While a decision on the role of TDD-LTE in the 600MHz band is not expected in the near-term, consideration of the contribution it can make in meeting consumer demand is active and current. In the meantime, the only band of spectrum in the United States that can be developed for TDD-LTE services is the 2.5 GHz band largely controlled by Clearwire.

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[39] Of the 18 LTE rollouts expected in 2013 and 2014, seven of them will use TDD-LTE technology. Bank of America Merrill Lynch, "Global Wireless Matrix 4Q12," p. 5.
[40] Id., p. 5.
[41] Clearwire, "Q3 2012 Clearwire Corporation Earnings Conference Call," October 25, 2012, p. 6.
[42] Clearwire, "Clearwire Corporation's CEO Discusses Q4 2012 Results – Earnings Call Transcript," February 8, 2012, p. 4.
[43] Nick Chiu, "China Mobile's TD-LTE Technology Expanding Fast, Where To Invest," *Seeking Alpha*, January 28, 2013.
[44] In addition to the band from 2500MHz to 2690MHz (Band 41), China also allocated 1.9 GHz frequency spectrum for TDD-LTE. Clearwire, "Q3 2012 Clearwire Corporation Earnings Conference Call," October 25, 2012, p. 6.
[45] FCC, "Notice of Proposed Rulemaking In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auction," *FCC Docket No. 12-268* at ¶¶ 123-184.

Companies spanning the wireless supply chain are developing hybrid FDD/TDD-LTE capabilities in order to capitalize on the gains offered by combining the two technologies in different parts of the network. [46] For example, Vodafone, a wireless carrier, offloads data traffic to a TDD-LTE system while transmitting voice traffic on a FDD-LTE system. [47] Qualcomm, a semiconductor manufacturer, markets a processor ("Snapdragon") that supports both FDD-LTE and TDD-LTE, as well as previous generation 3G systems, providing for flexibility across the technologies.[48] Sharp, a handset manufacturer, is releasing the Sharp Pantone 6 200SH, containing a hybrid FDD/TDD-LTE chip,[49] which will enable users access to SoftBank's TDD-LTE network in Japan.[50] These and other devices will be available to Clearwire's TDD-LTE customers.

Clearwire can avail itself of a robust market for network equipment for hybrid FDD/TDD-LTE systems. Alcatel Lucent is working on a device that will accelerate the deployment of TDD-LTE in densely populated areas of China.[51] Mobile operator Hi3G Sweden recently extended its agreement to build the first FDD/TDD-LTE dual-mode network, the first stage of which has already been installed.[52] In February 2013, Nokia Siemens Networks demonstrated data traffic offloading between TDD-LTE and FDD-LTE using a proprietary base station and a commercially available dual-mode (FDD and TDD) end-user device. In a related press release, the company states "[t]he capability to offload traffic between TDD-LTE and FDD-LTE networks paves the way for operators to optimize the use of both FDD-LTE and TD-LTE services. The demonstration is further evidence of Nokia Siemens Networks' commitment to the globalization and commercialization of TDD-LTE as part of

[46] "Even with LTE, however, operators see a need to offload their data traffic in order to provide users with wireline-like speed and capabilities…Just when operators are at a point where they have exhausted all possible data offload approaches, Time Division Duplex (TDD) in the form of LTE shines through." Renuka Bhalerao, "The Evolution of LTE TDD," *EE Times*, May 1, 2012.
[47] Renuka Bhalerao, "The Evolution of LTE TDD," *EE Times*, May 1, 2012.
[48] Qualcomm Press Release, "Qualcomm Unveils New Snapdragon Mobile Processors Across All Tiers of Smartphones and Tablets," November 16, 2011.
[49] Brian Klug and Anand Lal Shimpi, "Qualcomm's New Snapdragon S4: MSM8960 & Krait Architecture Explored", http://www.anandtech.com/show/4940/qualcomm-new-snapdragon-s4-msm8960-krait-architecture/4, accessed on March 10, 2013.
[50] *See* http://sharp.cheeseus.org/index.php?page=Devlist&id=91#, accessed on March 1, 2013.
[51] Alcatel-Lucent Press Release, "Alcatel-Lucent and China Mobile accelerate deployment of 4G TD-LTE across China with the introduction of light Radio Metro Radio," February 25, 2013.
[52] *See* http://www.lte-tdd.org/newsdetail/674, accessed on February 19, 2013.

its overall LTE strategy."[53] Ericsson, a telecommunications equipment manufacturer, demonstrated a bi-directional FDD/TDD-LTE network, allowing carriers to offer wireless services on both FDD and TDD spectrums.[54]

The TDD-LTE initiatives pursued by these companies are consistent with IDC's opinion that "[a]s LTE and LTE Advanced continue to evolve, it is clear that there will be a single globally adopted platform for both FDD and TDD, with minimal differences between FDD and TDD specifications, ensuring a critical mass of devices, chipsets, and infrastructure, and innovations in areas such as interference management and improved backhaul techniques will apply to both FDD-TDE and TDD-LTE networks."[55]

4. Demand for Wholesale TDD-LTE Services Is Likely to Increase Substantially

Part of Centerview's skepticism about the MCC scenario relates to the failure of Clearwire to attract major wholesale customers other than Sprint for its WiMAX technology.[56] For several reasons, Clearwire's past experiences with WiMAX need not limit future wholesale arrangements for TDD-LTE services.

First, WiMAX was primarily conceived and marketed as a stand-alone technology. Neither the network nor the consumer equipment designed for WiMAX supported a hybrid system operating with both WiMAX and any other 4G technology. A wholesale WiMAX customer would have to commit to offering a WiMAX-only service, and only Sprint among the major U.S. carriers was willing to offer such a service. Other major carriers had no use for a standalone WiMAX service. As a result, not surprisingly, Sprint was the only major wireless carrier to make wholesale arrangements with Clearwire.

[53] Nokia Siemens Networks Press Release, "Nokia Siemens Networks showcases TD-LTE breakthroughs," February 20, 2013.
[54] Ericsson Press Release, "First Converged LTE FDD/TDD Network launched by China Mobile Hong Kong and partner Ericsson," December 19, 2012.
[55] IDC (sponsored by Clearwire Corporation), "Validating the Market for TDD-LTE in the U.S. Marketplace," August 2012, p. 1.
[56] Centerview Comet Report, p. 5.

Second, as discussed above, TDD-LTE can be used as either a stand-alone technology or in combination with other technologies including FDD-LTE to offer faster hybrid services. Even for carriers committed to FDD-LTE services, Clearwire's TDD-LTE service offers an attractive option for hybrid services.The technological superiority and capabilities of a hybrid FDD/TDD-LTE system as compared to FDD-LTE alone means that FDD-LTE operators may find Clearwire's TDD-LTE services useful not merely for additional capacity but also to develop competitively superior services.

5. Clearwire Board's Abandonment of the MCC Scenario

The disclosed documents from Centerview and Evercore as presented to the Clearwire board and its Special Committee are presentation slides without corresponding explanations. It is difficult, based on these slides alone, to understand why the Clearwire board did not pursue the MCC scenario rather than the Sprint offer of $2.97 per share. Even under pessimistic WACC and perpetuity growth rate assumptions, the MCC scenario yields greater value to shareholders than the Sprint offer. Based onWACC and perpetuity growth rates assumptions available from investment analysts including Centerview, the shareholder value of the MCC scenario is worth more than the Sprint offer by a factor of more than three. Both the Centerview and Evercore presentations note a funding shortfall for the MCC scenario, but none of the documents explains why the cost of obtaining additional financing would not be worth the returns obtained from pursuing the MCC option.

C. Clearwire is Uniquely Positioned to Implement the MCC Scenario

1. Clearwire Has Extensive Spectrum Holdings That Are Well Suited for TDD-LTE and Are Valuable Because of It

Clearwire's spectrum holdings offer critical capacity in a market with rapidly increasing demand for wireless services. Clearwire has on average 140 MHz of spectrum nationwide in the 2.5 GHz frequency band—a section of spectrum that is being developed for TDD-LTE networks around the world.[57] Due to Clearwire's extensive holdings in this spectrum band, "it is able to operate on a single bandwidth in excess of 130MHz on average, including approximately 160MHz on average in the top 100 markets where capacity constraints are the most likely to emerge. As a result, Clearwire has the

[57] Clearwire 2012 10-K, p. 17.

capability to generate much greater capacity and better network performance by virtue of a significantly fatter pipe vis-à-vis competitors."[58] The fragmented spectrum holdings of other U.S. carriers create an opportunity for Clearwire to offer a valuable wholesale service, particularly through carrier aggregation.[59]

The suitability of high frequency bands such as Clearwire's 2.5 GHz for TDD-LTE has been demonstrated by major carriers worldwide. Japanese carrier SoftBank has successfully deployed TDD-LTE using high-frequency spectrum like Clearwire's,[60] and introduced six TDD-LTE smartphones supporting the 2.5 GHz band in February of last year.[61] Chinese telecom regulatory body MIIT announced "plans to release the entire 190 megahertz of their 2.5-gigahertz spectrum for TDD-LTE deployments and their adoption of the same Band 41 format advocated by Clearwire and other GTI members around the globe, including [SoftBank]."[62] Recognizing the extensive development of the TDD-LTE ecosystem in the 2.3-2.6 GHz frequency range, and the superior performance of TDD-LTE at these frequencies, Jefferies notes that "it is no longer the case that Clearwire's spectrum around the 2.5 GHz frequency is materially less desirable."[63]

Auctions of high-frequency spectrum in the 2.3-2.6 GHz range have either been planned or completed globally and domestically, indicating substantial demand for high-frequency spectrum.[64,65] In response to the FCC's incentive auction, AT&T cautions that it may be "the last spectrum auction

[58] IDC (sponsored by Clearwire Corporation), "Validating the Market for TDD-LTE in the U.S. Marketplace," August 2012, p. 2.
[59] Using carrier aggregation, it is possible to simultaneously utilize the spectrum bands of more than one carrier, thereby increasing the overall transmission bandwidth. As China Mobile and other carriers have found, the combination of carrier aggregation and LTE technologies achieves dramatic gains in wireless speed and capacity. *See* "Asian operators pushing the envelope with LTE Advanced," at http://lteconference.wordpress.com/2013/02/01/asian-operators-pushing-the-envelope-with-lte-advanced/, accessed on February 20, 2013.
[60] Cowen and Company, "Sprint Nextel Corp. – Initiating With Neutral," February 4, 2013, pp. 22-23.
[61] Wells Fargo Securities, "Clearwire Corp.: CLWR: "CLEAR"-ing Up the Facts and Questions," October 23, 2012, p. 1; Clearwire, "Q3 2012 Clearwire Corporation Earnings Conference Call," October 25, 2012, p. 6.
[62] Clearwire, "Q3 2012 Clearwire Corporation Earnings Conference Call," October 25, 2012, p. 6.
[63] Jefferies, "Clearwire Corp.; Econ 101: Scarcity, analyst report", February 23, 2012, p. 6.
[64] "In many countries, auctions of 2.3GHz and 2.6GHz spectrum are planned (e.g., in Europe, Russia, Asia, and Latin America) or have just taken place (e.g., in India, Sweden, and Norway)." Jefferies, "Clearwire Corp.; Econ 101: Scarcity, analyst report", February 23, 2012, p. 6.
[65] "Recent pending and closed spectrum transactions by Verizon, AT&T, T-Mobile, SpectrumCo, Dish Networks, and NextWave were for spectrum above 2 GHz…We believe these transactions pretty much cleared the market of available spectrum. We do not anticipate meaningful large blocks of spectrum coming available during the next few years." JANCO Partners, Inc., "Clearwire Recommendation: Buy," August 29, 2012, pp. 1, 5-6.

of comparable scope that the Commission will conduct for many years."[66] The limited supply of additional spectrum provides further support for a high valuation of Clearwire's extensive spectrum holdings and encourages deployment of spectral efficient technologies such as TDD-LTE.

2. No Other Carrier Likely Has Capability to Deploy TDD-LTE

Another factor supporting Clearwire's unique position to implement the MCC scenario is the fact that no carriers in the United States other than Clearwire have announced plans to employ TDD-LTE technology. AT&T and Verizon are expected to have the majority of their FDD-LTE rollout completed by mid-2013 and have indicated that the focus of their investments is FDD-LTE rather than TDD-LTE.[67] For example, in petitioning the FCC to change service rules for the WCS band at 2.3 GHz, AT&T focused on FDD-LTE technologies.[68]

Without Clearwire, therefore, there would likely be no significant TDD-LTE deployment in the United States and, as shown above, TDD-LTE is critical to meeting national broadband needs through deployment of either TDD-LTE only networks or as part of a hybrid FDD/TDD-LTE network. Without a TDD-LTE offering in the United States, transmission speeds would be limited to those achieved by FDD-LTE systems. As evidenced by experiences in Asia, these speeds are likely to be inferior to those speeds that TDD-LTE systems, or hybrid FDD/TDD-LTE systems, are capable of achieving. The spectrum and TDD-LTE services offered by Clearwire will therefore be of value to other carriers in the United States, increasing the relative profitability of the MCC scenario.

D. Clearwire Can Endure Some Delay in TDD-LTE Deployment and Still Be Profitable

Investment analysts point to the delayed nature of Clearwire's TDD-LTE deployment as compared to the network deployments of other carriers and raise concerns that a late entry into the LTE market will be a competitive disadvantage. While it is true that capital constraints have

[66] AT&T Inc., "Comments of AT&T Inc. In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions," *FCC GN Docket No. 12-268*, January 25, 2013, p. 1.
[67] Morgan Stanley Research, "Clearwire Corporation 4Q12 Preview: Strategic and LTE Update in Focus," February 11, 2013, p. 3.
[68] FCC, "Order on Reconsideration In the Matter of Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band," *FCC WT Docket No. 07-293*, (hereinafter "FCC WT Docket No. 07-293") October 17, 2012.

postponed the implementation of Clearwire's TDD-LTE strategy and that timing of deployment is important for the calculation of shareholder value, concerns regarding competitive repercussions are misplaced. Clearwire's business plan is not necessarily to compete purely as a standalone TDD-LTE service. Rather, even domestic carriers that have committed to the deployment of FDD-LTE can make use of Clearwire's wholesale TDD-LTE services in order to operate hybrid FDD/TDD-LTE systems. Clearwire is the only company with either plans or, thanks to Clearwire's substantial spectrum holdings in the 2.5 GHz frequency band, the capability to implement TDD-LTE. Consequently, even if Clearwire's TDD-LTE deployment lags the FDD-LTE deployments of other carriers, it still has a viable business model. In addition to leasing TDD-LTE spectrum, Clearwire's network management of a hybrid FDD/TDD-LTE system is a potential value-added service. The value of such wholesale and management services will of course be greater if they can be offered to multiple customers, as in the MCC scenario.

IV. Spectrum valuations in the United States are rising and are likely to continue to increase, and Sprint's $2.97 offer for Clearwire reflects an extraordinarily low valuation of Clearwire spectrum given its unique TDD-LTE options

Increasing spectrum values should make a company with substantial spectrum holdings, such as Clearwire, a good long-term investment. Yet Sprint's offer of $2.97 per share for Clearwire translates into a very low valuation of the company and its spectrum. A recent study by Information Age Economics sponsored by Crest Financial reaches similar conclusions.[69] Below we review the following:

- Spectrum values in the United States are increasing;
- Recent transactions for impaired spectrum have been in the range of $0.21to $0.50 per MHz pop;
- Recent transactions for unimpaired spectrum have been for amounts supporting a valuation of at least $0.55 per MHz pop;

[69] M. Roetter and A. Pearce, "Valuation of Clearwire's 2.5 GHz Band Spectrum Assets," Information Age Economics, February 2013.

- Sprint's offer of $2.97 per share of Clearwire corresponds to a valuation of Clearwire spectrum of about $0.11 per MHz pop, substantially below the current market price; and

- Under reasonable assumptions of the MCC scenario, the Evercore and Centerview valuations between $9.54 and $15.50 per share correspond to spectrum prices between $0.32 and $0.50 per MHz pop.

A. Spectrum Values in the United States Are Increasing

Like real estate, the value of spectrum licenses has generally increased over time. Although real estate prices do not move upward every year, the long-term upward trend is unmistakable. Clearwire has highlighted this trend,[70] and a recent study of FCC spectrum auctions confirms the upward trend in spectrum prices.[71]

One of the reasons for increased value in recent years is the rapid increase in demand for wireless services, particularly mobile broadband services.[72] The demand for these services has grown more rapidly than anticipated even just a few years ago.[73] In its communications with the financial community, Clearwire has consistently noted this increase in demand and associated increase in the value of spectrum.[74]

A second reason for increases in the value of spectrum is that newly available spectrum, such as spectrum repurposed from legacy uses, has been slow to materialize. The FCC issued a report in early

[70] Hope Cochran, CFO of Clearwire, "Presentation to Goldman Sachs 21st Annual Communacopia Conference," September 19, 2012, p. 3.
[71] Scott Wallsten, "Is There Really a Spectrum Crisis? Quantifying the Factors Affecting Spectrum License Value," Technology Policy Institute, January 23, 2013, pp. 27-28.
[72] Id., pp. 4-5.
[73] "[H]istory has shown that projections regarding mobile Internet data traffic usually lag behind actual usage. For example, Cisco originally predicted in its Visual Networking Index that in 2011, global mobile data traffic would grow by 131 percent. Instead, global mobile data traffic grew by 133 percent, in spite of global economic uncertainties and an increase in the amount of mobile data traffic offloaded to the fixed network." CTIA – The Wireless Association, "Comments of CTIA – The Wireless Association In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions," *FCC GN Docket No. 12-268*, (hereinafter "FCC GN Docket No. 12-268") January 25, 2013, p. 8.
[74] Hope Cochran, CFO of Clearwire, "Presentation to Goldman Sachs 21st Annual Communacopia Conference," September 19, 2012, pp. 3-4.

2010 describing the potential addition of 500 MHz of spectrum for mobile commercial purposes.[75] Nearly three years later, the FCC has implemented only a small part of its plan, and even those implementations have yielded substantially less spectrum than initially envisioned.[76]

A third reason for higher spectrum prices is that the United States has had a weak economy since 2007. The Sprint-Clearwire merger took place in 2008, and the valuations in that transaction reflected the weak economy of the time. As our economy slowly moves out of recession, prices for assets such as spectrum are likely to increase.

B. Recent Transactions for Impaired Spectrum Have Been in the Range of $0.21 – $0.50 per MHz Pop

Recent spectrum transactions have transferred significant holdings, although none has involved as much spectrum as is held by Clearwire. Some of these transactions have involved spectrum that has been impaired so that its use is substantially limited or would require the completion of an unpredictable regulatory proceeding before being usable. Given that the Clearwire spectrum is not impaired, these transactions for impaired spectrum provide a lower bound for the value of Clearwire's spectrum. Among these transactions are the following: Harbinger - SkyTerra; DISH - DBSD and TerreStar; and AT&T - NextWave.

1. Harbinger - SkyTerra

On March 26, 2010, the FCC approved Harbinger's acquisition of SkyTerra, including the transfer of 23 MHz of nationwide satellite spectrum in the L-band.[77] The new company was known as

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[75] FCC, "Connecting America: The National Broadband Plan," March 16, 2010. *See* also, Hope Cochran, CFO of Clearwire, presentation to Goldman Sachs 21st Annual Communacopia Conference, September 19, 2012, p. 5.

[76] The National Broadband Plan envisioned [60 Mhz] of spectrum from MSS for mobile broadband purposes. The L band spectrum does not appear to be easily developed for mobile broadband purposes. FCC, "Memorandum Opinion and Order and Declaratory Ruling In the Matter of SkyTerra Communications, Inc., Transferor and Harbinger Capital Partners Funds, Transferee Applications for Consent to Transfer of Control of SkyTerra Subsidiary LLC," *FCC IB Docket No. 08-184*, (hereinafter "FCC IB Docket No. 08-184") March 26, 2010. The S band spectrum has been approved for mobile broadband purposes, but actual deployment may still be several years away. FCC, "Report and Order and Order of Proposed Modification Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands," *FCC WT Docket No. 12-70,* (hereinafter "FCC WT Docket No. 12-70") December 17, 2012.

[77] FCC IB Docket No. 08-184. *See* particularly Attachment 1, "Harbinger Business Model."

LightSquared, and it leased 30 MHz of spectrum from Inmarsat.[78] The value of transaction was estimated at $1.8 billion, including the acquisition of debt.[79] It is difficult to apply a precise measure of the price per MHz pop for the Harbinger transaction. Evaluating the price at $1.8 billion, the 23 MHz of nationwide spectrum corresponds to a price of approximately $0.25 per MHz pop.[80] That would be the price per MHz pop disregarding Harbinger's pre-existing ownership of approximately 50 percent of Sky Terra. Taking into account this initial ownership position, Harbinger appears to have paid $1.8 billion for approximately half of SkyTerra, or a price between $0.45 and $0.50 per MHz pop. If, hypothetically, Harbinger could have acquired SkyTerra's assets without also acquiring its debt, the price paid, and the corresponding price per MHz pop, would have been higher. Thus, the range of $0.45 to $0.50 is a lower bound on the spectrum value.

Harbinger was aware that the spectrum it acquired from SkyTerra was substantially impaired for mobile broadband applications. At the time of the contract between Harbinger and SkyTerra in August 2009, Harbinger had no assurance that regulators would allow SkyTerra's spectrum to be used for terrestrial purposes outside of its ancillary terrestrial component ("ATC") license. In order to fall within the ambit of an ATC license, the spectrum had to be used primarily for satellite purposes and handsets had to have a satellite capability, which was not the model LightSquared envisioned. In 2010, the FCC relaxed the restrictions on the use of the SkyTerra spectrum by LightSquared.[81] But subsequent interference issues with GPS led the FCC to suspend LightSquared's authority for flexible use of the spectrum thereby substantially reducing its value.[82]

2. DISH - DBSD and TerreStar

In bankruptcy proceedings in 2011, DISH acquired the equity of DBSD for approximately $1.4 billion and the assets of TerreStar for $1.4 billion.[83] Each company had 20 MHz in nationwide mobile satellite service licenses in the 2 GHz band with ATC enabling them to offer terrestrial services as well as to satellite services.[84] In addition, to resolve legal disputes directly related to these transactions, DISH paid Sprint $114 million, bringing the direct acquisition cost to $2.9 billion for the

[78] Id., *see* Attachment 1, "Harbinger Business Model."
[79] Dan Meyer, "Harbinger Completes Acquisition of SkyTerra," *RCR Wireless*, March 30, 2010.
[80] The calculation is $1.8 billion divided by (23 x 315 million).
[81] FCC IB Docket No. 08-184.
[82] FCC, "Order and Authorization in the matter of LightSquared Subsidiary LLC, Request for Modifications of its Authority for an Ancillary Terrestrial Component," *FCC IB Docket No. 11-109*, January 26, 2011.
[83] DISH 2011 10-K, p. 1, and pp. 5-6.
[84] FCC WT Docket No. 12-70, ¶¶ 9-10.

assets of the two companies.[85] In addition to the 40 MHz of spectrum, DISH acquired satellite slots and a working satellite from each company, but essentially no operations or customers.[86] Assuming that all of the value of the companies was embodied in the spectrum, the price per MHz pop was $0.23.[87] In describing the acquisitions in its Form 10-K, DISH focused on the spectrum as well as necessary regulatory approvals that DISH would need in order to make the spectrum valuable:

> We have agreed to acquire certain spectrum and other assets from DBSD North America and TerreStar and we have paid substantially all of the purchase price for these acquisitions. If we are unable to obtain certain regulatory approvals and waivers, or they are granted in a manner that varies from the form we have requested, the value of these assets may be impaired. To the extent we receive these approvals and waivers, we will be required to make significant additional investments or partner with others to commercialize these assets.[88]

Despite this uncertainty, DISH was willing to pay at least $0.23 per MHz pop, and quite likely substantially more, for satellite spectrum with the hope that the FCC would approve the conversion of the spectrum to terrestrial and mobile broadband use.

3. AT&T - WCS

During the summer of 2012, AT&T agreed to acquire WCS spectrum from various license-holders. AT&T paid NextWave $600 million to "acquire all the equity and purchase a portion of the debt of NextWave for $600 [million]."[89]Some analysts have estimated the AT&T acquisition of WCS at $0.21 per MHz pop, including all four blocks of spectrum.[90] Although there are 30 MHz of WCS spectrum, the FCC prohibits mobile services in two of the blocks that together account for 10 MHz of the total 30 MHz that AT&T purchased.[91] Considering these restrictions, the effective price was closer to $0.32 per MHz pop. Moreover, power limits and out-of-band emission ("OOBE") limits imposed by the FCC further impair the use of all blocks designated for mobile services.[92]

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[85] DISH 2011 10-K, p. 6.
[86] FCC WT Docket No. 12-70, ¶ 14.
[87] This calculation almost certainly understates the value of the spectrum because DISH was already a substantial equity owner and creditor of at least TerreStar.
[88] DISH 2011 10-K, p. ii.
[89] AT&T, Form 10-Q, period ending September 30, 2012, p. 29.
[90] This calculation is "based on $650m total value of AT&T's acquisition", Frank Rayal, "Setting a Value on the 2.3 GHz WCS Band," August 5, 2012.
[91] FCC WT Docket No. 07-293.
[92] Id.

In August of 2012, at the time of the AT&T acquisition of the WCS licenses, the FCC had not completed rules for mobile services in the WCS band; consequently, WCS licenses were substantially impaired and could not be effectively used for mobile broadband services. AT&T's purchase of the WCS licenses in August 2012 would have value only if the FCC were subsequently to change its rules. It was only in October 2012, two months after AT&T announced the acquisition, that the FCC approved new rules allowing effective mobile services in the WCS band, and even then, for only 20 of the 30 MHz with restricted usage.[93] Thus the price offered by AT&T in August 2012 for WCS licenses is presumably lower than the price it would have been willing to pay after the FCC approved the rule changes.

Table 2 presents the implicit value of the spectrum on a price per MHz basis for each of these impaired spectrum transactions. Had the spectrum not been impaired, the prices would almost certainly have been higher.

Table 2: Price Ranges for Recent Impaired Spectrum Transactions

Transaction	Date Announced	Impairment	Price per Megahertz Pop
Harbinger – SkyTerra	Mar-10	ATC status	$0.45-$0.50 or more
DISH – DBSD and TerreStar	2011	ATC status	At least $0.23
AT&T – WCS	2012	WCS service rules	At least $0.21

C. Recent Transactions for Unimpaired Spectrum Have Been for Amounts Supporting Valuation of at Least $0.55 per MHz Pop

Several other recent transactions have involved significant holdings of unimpaired spectrum. Unimpaired spectrum is available for immediate use without substantial limitations on services and without requiring further FCC proceedings. We review these transactions below.

[93] Id.

1. AWS Transactions

In late 2011, Verizon Wireless proposed to acquire AWS spectrum from a consortium of cable companies known as SpectrumCo.[94] The members of SpectrumCo are Comcast Corporation, Time Warner Cable, and Bright House Networks. In a complicated transaction, Verizon Wireless would pay $3.6 billion for the spectrum in addition to various marketing agreements. For the spectrum alone, the transactions could be measured at approximately $0.69 per MHz pop.[95] But the marketing agreements—under which Verizon Wireless agreed to market cable services and cable companies agreed to market Verizon Wireless services—clearly favored the cable companies because Verizon Wireless has a substantial retail marketing presence in retail outlets around the country whereas cable companies do not. To the extent the marketing agreements tend to favor the cable companies, the transaction prices for the spectrum would likely have been higher without the marketing agreements.

Separately, Verizon Wireless proposed to acquire AWS spectrum from Cox TMI Wireless for $315 million.[96] The Cox deal was valued at approximately $0.56 per MHz pop.[97] As with the SpectrumCo deal, Verizon and Cox agreed to various marketing agreements that were more valuable to Cox than to Verizon. Thus the spectrum price would likely have been higher absent the marketing agreements.

In December 2011, Verizon agreed to purchase 83 million MHz pops of PCS spectrum and 257 million MHz pops of AWS spectrum for $188 million, or $0.55 per MHz pop.[98] In the same month, Verizon agreed to purchase 273 million MHz pops of AWS spectrum from Savary Island, an affiliate of Leap Wireless, for $172 million, or $0.63 per MHz pop.[99]

[94] Verizon Wireless Press Release, "Comcast, Time Warner Cable, And Bright House Networks Sell Advanced Wireless Spectrum To Verizon Wireless For $3.6 Billion," December 2, 2011.
[95] Sam Churchill, "FCC To Okay Verizon/Cable Spectrum Buy," *Daily Wireless*, July 9, 2012.
[96] Cox Communications Press release, "Cox Communications Announces Agreement to Sell Advanced Wireless Spectrum to Verizon Wireless," December 16, 2011. FCC, "Application of Verizon and Cox Wireless," *FCC ULS File No. 0004996680*, filed December 21, 2011.
[97] The calculation is $315 million divided by 20 MHz divided by 28 million pops of coverage.
[98] Richelle Elberg, "Leap Wireless and Verizon Wireless Announce Spectrum Deals," The Deal Advisor, December 11, 2011.
[99] Id.

2. 700 MHz Spectrum Transactions

In December 2011, Leap Wireless agreed to purchase from Verizon Wireless 129 MHz pops of 700 MHz A block spectrum for $204 million, or $1.58 per MHz pop.[100] On December 22, 2011, the FCC approved AT&T's acquisition of Qualcomm's unpaired spectrum in the lower 700 MHz band.[101] The transaction has been valued at $0.85 per MHz pop.[102] Table 3 presents the implicit value of the spectrum on a price per MHz basis for each of these transactions.

Table 3: Price Ranges for Recent Unimpaired Spectrum Transactions

Spectrum	Date Announced	Price per Megahertz Pop
AWS	2011	$0.55 - $0.69
700 Mhz	Dec-11	$0.85 - $1.58

The spectrum prices presented in Table 3 are consistent with projections of spectrum prices in future FCC auctions. For example, in 2011 Coleman Bazelon projected spectrum prices in the range of $0.72 to $0.86 per MHz pop for several future FCC auctions, both below 1 GHz and above 2 GHz.[103] The FCC also occasionally discusses projections of prices in future FCC auctions. For example, the FCC recently mentioned the possibility that the H-band, a 5 MHz slice at 1995-2000 MHz, would be sold at auction for prices in the range of "at least $0.67-$1.00 per MHz Pop." [104]

[100] Id.
[101] *FCC*, "Order In the Matter of Application of AT&T Inc. and Qualcomm Incorporated," *FCC WT Docket No. 11-18*, December 22, 2011.
[102] Frank Rayal, "Setting a New Standard for Unpaired Spectrum Pricing: AT&T's Purchase of Qualcomm's 700 MHz Spectrum," December 28, 2011.
[103] Coleman Bazelon, "Expected Receipts from Proposed Spectrum Auctions," *The Brattle Group, Inc.*, July 28, 2011, p. 25.
[104] "One analyst projected that the value of the paired H block would be $2-3 billion, which implies a price of at least $0.67-$1.00 per MHz Pop, or $1-$1.5 billion for the downlink band." FCC WT Docket No. 12-70, ¶ 66.

D. Sprint's Offer of $2.97 per Share of Clearwire Corresponds to A Valuation of Clearwire Spectrum of About $0.11 per MHz Pop, Substantially Below the Current Market Price

Many investment analyst reports, including the Centerview and Evercore reports, attempt to translate Sprint's $2.97 per share offer for Clearwire into a price per MHz pop. They often cite values similar to the $0.21 per MHz pop asserted by Sprint.[105] These calculations are incorrect for at least two reasons: (1) they improperly disregard Clearwire's non-spectrum assets; and (2) they incorrectly calculate the enterprise value of Clearwire.

1. Clearwire Has Many Assets Other Than Spectrum

Calculating the price paid per MHz pop is appropriate for transactions where spectrum is the only asset being transferred. Practically all of the transactions listed in the Centerview[106] and Evercore[107] reports are based on pure spectrum plays. Investment analysts typically do not speak of price per MHz pop for transactions involving non-spectrum assets. Thus, in reviewing spectrum transactions, Centerview and Evercore do not include the T-Mobile-Metro PCS transaction, for example, because Metro PCS has substantial assets other than spectrum. Thus, a simple calculation of the price per MHz pop based on the total enterprise value of Metro PCS divided by the MHz pops transferred in the transaction would ascribe no value to Metro PCS's other assets and would therefore substantially overstate the implicit price per MHz.

If Clearwire were only selling spectrum, it would make sense to calculate a simple price per MHz pop for the Sprint-Clearwire transaction by dividing the transaction price by the MHz pops involved in the transaction. However, the transaction proposed by Sprint is to acquire all of Clearwire, including non-spectrum assets as well as liabilities. In its most recent 10-K, Clearwire represents that it has approximately $7.7 billion of assets of which $4.2 billion reflects spectrum.[108] The difference of more than $3.4 billion reflects the value of other assets. Thus, any investment analyst who presents a transaction value for Sprint's proposed acquisition of Clearwire in terms of price per MHz pop relative to the proposed acquisition price implicitly assigns no value to Clearwire's other assets.

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[105] Centerview Canine 12/16/12 Report, p. 8
[106] Centerview Comet Report, p. 26; Centerview Canine 12/12/12 Report, pp. 14 and 17; Centerview Canine 12/16/12 Report, p. 9.
[107] Evercore 12/12/12 Board Presentation, p. 13; Evercore Partners, "Board of Directors Presentation December 16, 2012," (hereinafter "Evercore 12/16/12 Board Presentation") December 16, 2012, p. 11.
[108] Clearwire 2012 10-K, p. 79.

This is the approach that both Centerview and Evercore appear to take, assigning no value at all to the non-spectrum assets that Clearwire acknowledged holding in its public disclosures. To be sure, the value of spectrum (and other assets) may vary from one reporting period to another. For example, although spectrum accounted for the majority of Clearwire's assets on its balance sheet as of December 31, 2012, it represented less than 50 percent Clearwire's assets just 12 months earlier.[109] There are many possible ways of allocating value between spectrum and non-spectrum assets, but neither Centerview nor Evercore attempts to make such an allocation or even present a calculation based on Clearwire's publicly disclosed spectrum/non-spectrum value split. Instead, both Centerview and Evercore, as well as many other investment analysts, simply, and incorrectly, assign no value to the non-spectrum assets of Clearwire.

In fact, relying on Clearwire's publicly disclosed spectrum/non-spectrum value split would yield an erroneous value. Clearwire's non-spectrum assets go well beyond those that are listed on its balance sheet. For example, Clearwire has a substantial number of customers, both retail and wholesale, that are not reflected on the balance sheet. Clearwire also has contracts with vendors, with tower companies, and with all of the resources necessary to operate a commercial wireless company. Both the tangible assets of Clearwire listed in its balance sheet as well as its many intangible assets distinguish the acquisition of Clearwire from the pure spectrum plays with which Centerview, Evercore, and others improperly compare Clearwire.

2. Sprint Adds Lease Values to Calculate the Enterprise Value of Clearwire

The usual textbook definition of enterprise value is market capitalization plus net debt minus cash or liquid assets.[110] There are some judgments involved in enterprise value calculations, but Sprint's assertion in its December 17th press release of a $10 billion enterprise value for Clearwire corresponding to a $2.97 share price offer is difficult to defend.[111] According to ycharts.com, Clearwire's share price closed at $2.91 on December 17, 2012, and its total enterprise value was $8.2 billion, not $10 billion.[112]

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[109] Id., p. 79.
[110] *See* http://financial-dictionary.thefreedictionary.com/Enterprise+Value, accessed on February 27, 2013.
[111] Sprint Press Release, "Sprint to Acquire 100 Percent Ownership of Clearwire for $2.97 per Share." December 17, 2012.
[112] *See* http://ycharts.com/companies/CLWR/, accessed March 10, 2013.

Sprint calculated its $10 billion enterprise value by "including net debt and spectrum lease obligations of $5.5 billion."[113] The net debt of Clearwire was $4.3 billion on December 31, 2012,[114] and "spectrum lease obligations" do not appear separately as a liability on the balance sheet of Clearwire. Many companies have long-term leases for assets such as office space, but it is not standard practice to include lease values in enterprise value. On February 27, 2013, Clearwire's share price closed at $3.18. This corresponds to an enterprise value of $8.7 billion,[115] based on a market capitalization of $4.7 billion,[116] well below Sprint's claim of $10 billion. The corresponding enterprise value for Sprint with a share price of $2.97 would be $8.4 billion, not the $10 billion claimed by Sprint.[117] Sprint increases the enterprise value of Clearwire by more than $1.5 billion by including spectrum lease values. Evercore increases the enterprise value by $1.8 billion based on "NPV of Leases of $1,800 mm based on management estimate."[118] Centerview also adds $1.8 billion to the enterprise value for spectrum leases.[119]

3. The Value of Spectrum Corresponding to Sprint's $2.97 Share Offer is Approximately $0.11 per MHz Pop, Substantially Below $0.21 per MHz Pop

Sprint asserts that its offer of $2.97 corresponds to a spectrum value of $0.21 per MHz pop, which it derives by dividing an asserted enterprise value of $10 billion by 47 billion MHz pops.[120] This calculation is incorrect for at least two reasons.

a. First, as noted above, the enterprise value of Sprint corresponding to the $2.97 share price offer is not $10 billion; it is closer to $8.4 billion. At the correct enterprise value, assuming that all of the enterprise value reflects spectrum alone, the price per MHz pop would be approximately $0.18.

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[113] Sprint Press Release, "Sprint to Acquire 100 Percent Ownership of Clearwire for $2.97 per Share." December 17, 2012.
[114] Clearwire 2012 10-K, p. 79.
[115] *See* http://ycharts.com/companies/CLWR, accessed on February 27, 2013.
[116] $4.659 billion rounded to one decimal place.
[117] Given that market capitalization and net debt are two of the components of a firm's total liabilities, it is not surprising that enterprise value is typically less than the value of the total liabilities of a company. But, in the case of Clearwire, it is reasonable to calculate market capitalization based not on just marketable share, but also on convertible shares, which would be exercise in a buyout.
[118] Evercore 12/16/12 Board Presentation, p. 11.
[119] Centerview Canine 12/12/12 Report, p. 15.
[120] Sprint Press Release, "Sprint to Acquire 100 Percent Ownership of Clearwire for $2.97 per Share." December 17, 2012; Clearwire 2012 10-K, p. 18.

b. Second, not all of the enterprise value is attributable to spectrum. As discussed above, it would be reasonable, accepting Clearwire's public disclosures with the caveat noted above, to subtract $3.4 billion as the amount representing non-spectrum assets, leaving the residual value for spectrum at approximately $5 billion. At that net value, the price per MHz pop would be closer to $0.11. Thus, there is no foundation for the assertion by Sprint's CEO Dan Hesse that the $2.97 per share offer corresponds to a $0.21 per MHz pop valuation of Clearwire spectrum.[121] This figure almost certainly overstates the implicit spectrum value of Sprint's offer by nearly 100 percent for a share price of $2.97.

4. Since 2010, Clearwire Has Presented to the Public Valuations of Its Spectrum Comparable to as Much as $1.25 per MHz Pop or as Much as $55 Billion Overall

Between 2010 and 2012, officers of Clearwire have presented to the public valuations of spectrum comparable to the holdings of Clearwire. These comparable valuations have been in the range of $0.25 to $1.25 per MHz pop. These valuations are for spectrum alone, not for the other assets of the Clearwire. This implies spectrum valuations in the range of $11.7 billion to $55.1 billion.[122] Clearwire executives never suggested to the public that its spectrum was worth as little as $0.21 per MHz pop, much less $0.11 per MHz pop. As the Clearwire executives correctly noted, spectrum valuations have been consistently increasing. There is no reason to believe that the valuation in 2013 would be less than the valuation in previous years. Table 4 summarizes the specific presentations by Clearwire.

[121] Reuters, "Sprint CEO says deal values Clearwire spectrum higher than AT&T paid for Nextwave," December 17, 2012.
[122] See Clearwire presentation at Deutsche Bank Media & Telecommunications Conference, http://files.shareholder.com/downloads/CLWR/2239836835x0x546515/e25c9414-1c46-4fe7-abbe-c2769d335496/2012%2002%2028%20DB_Hope.pdf, accessed on March 1, 2013, slide 3; Clearwire presentation at JPMorgan Global High Yield and Leveraged Finance Conference, http://files.shareholder.com/downloads/CLWR/2239836835x0x434823/25943b6a-1136-4e11-bafe-6b56a241777c/JPMorgan-2010.pdf, accessed on March 1, 2013, slide 4.

Table 4: Clearwire Presentations of the Value of its Spectrum[123]

Date	Presenter	Event	Spectrum Valuation
3/2/2010	Erik Prusch	Clearwire Corporation at JPMorgan Global High Yield and Leveraged Finance Conference	Spectrum valued at $22.1Bn to $55.1Bn assuming $0.50 to $1.25 per MHz-Pop[1]
3/1/2011		Clearwire Corporation at Morgan Stanley Technology, Media & Telecom Conference	Spectrum valued at $23.2Bn to $46.3Bn assuming $0.50 to $1.00 per MHz-Pop[2]
5/10/2011	Hope Cochran and Paul Blalock	Clearwire Investor Presentation	Spectrum valued at $23.2Bn to $46.3Bn assuming $0.50 to $1.00 per MHz-Pop[3]
2/28/2012	Hope Cochran	Deutsche Bank Media and Telecommunications Conference	$35.0 Bn assuming increase in value subsequent to recent transactions of $0.25 - $0.75 per MHz-Pop, evidenced by Verizon-Spectrum Co AWS transaction (63 percent increase from 2006 - 2011)[4,5,6]
3/22/2012	Hope Cochran	Goldman Sachs Conference	
9/19/2012	Hope Cochran	Goldman Sachs 21st Annual Communacopia Conference	

[123] http://files.shareholder.com/downloads/CLWR/2239836835x0x434823/25943b6a-1136-4e11-bafe-6b56a241777c/JPMorgan-2010.pdf, accessed on March 1, 2013, slide 4; http://files.shareholder.com/downloads/CLWR/2239836835x0x448922/c199dd61-e9b1-4694-ab5e-3108146f8483/Investor%20Presentation%20March%202011%20Final.pdf, accessed on March 1, 2013, slide 4; http://files.shareholder.com/downloads/CLWR/2239836835x0x466836/a24f1857-733d-484e-aaf4-65d08b7490a6/CLWR_Investor_Presentation_May_2011.pdf, accessed on March 1, 2013, slide 5; http://files.shareholder.com/downloads/CLWR/2239836835x0x546515/e25c9414-1c46-4fe7-abbe-c2769d335496/2012%2002%2028%20DB_Hope.pdf, accessed on March 1, 2013, slide 3; http://files.shareholder.com/downloads/CLWR/2239836835x0x554783/8dd20917-02ba-43ba-be7a-339803af8fa0/CLWR_Investor_Presentation_Q4_2011.pdf, accessed on March 1, 2013, slide 3; http://files.shareholder.com/downloads/CLWR/2239836835x0x600991/32db5f93-ac2a-4ead-958e-7a2cbe9fd9ae/2012%209%2019%20Communacopia_Hope.pdf, accessed on March 1, 2013, slide 3.

E. Under Reasonable Assumptions of the MCC scenario, the Evercore and Centerview Valuations between $9.54 and $15.50 per Share Correspond to Spectrum Prices between $0.31 and $0.50 per MHz Pop

As noted earlier, under reasonable assumptions, Evercore assesses the MCC scenario on a discounted cash flow basis as having a Clearwire equity value between $10.15 and $11.31 per share.[124] Centerview assesses the MCC scenario at between $9.54 and $15.50 per share.[125] It is straightforward to translate these share prices into spectrum prices per MHz pop based on financial information from Clearwire's 10-K.[126]

According to the consolidated balance sheet on December 31, 2012, Clearwire had $193 million of cash, $3.4 billion of non-spectrum assets, and $4.3 billion of net long-term debt.[127] Clearwire had approximately 1.4 billion of total weighted average shares of Class A Common Stock outstanding (diluted).[128] Based on these values, we calculate enterprise value and corresponding price per MHz pop of spectrum for several equity share values in Table 5 below.

As can be seen in Table 5, the Sprint offer corresponds to a spectrum price of $0.11 per MHz pop, and the DISH offer of $3.30 per share corresponds to a spectrum price of $0.12 per MHz pop. The Evercore Clearwire price range of $10.15 to $11.31 corresponds to spectrum prices between $0.33 and $0.37 per MHz pop. The Centerview Clearwire equity price range of $9.54 to $15.50 corresponds to spectrum price ranges between $0.31 and $0.50 per MHz pop. The Clearwire CFO estimates of spectrum values between $0.25 and $1.25 correspond to an equity price range of $7.57 to $39.65. If the transactions for impaired spectrum are considered to be a lower bound, they suggest an equity price range between $6.29 and $15.59, remarkably similar to the ranges presented by Evercore and Centerview. All of these values are substantially above the $2.97 share price offered by Sprint, indicating that Sprint's offer dramatically undercompensates Clearwire's shareholders for the value of Clearwire's spectrum and, relatedly, the value of Clearwire's TDD-LTE technology strategy.

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[124] Evercore 12/12/12 Board Presentation, p. 15.
[125] Centerview Canine 12/16/12 Report, p. 6.
[126] Clearwire 2012 10-K.
[127] Id., p. 79.
[128] Id., p. 121. This figure does not include potentially dilutive effects of other share classes. Ycharts implicitly uses a value of 1.465 billion diluted shares to calculate market capitalization and enterprise value. We use the same value.

Table 5: Correspondence between Share Price and Spectrum Price[129]

	Clearwire Share Price	Enterprise Value ($ billions)	Implicit Spectrum Value ($ billions)	Spectrum Price Per MHz Pop
Sprint Offer	$2.97	$8.4	$5.0	$0.11
Clearwire Stock Price, 12/31/2012	$2.89	$8.3	$4.9	$0.10
DISH Offer	$3.30	$8.9	$5.5	$0.12
Evercore Range of Equity Values under MCC Scenario	$10.15	$19.0	$15.5	$0.33
	$11.31	$20.7	$17.2	$0.37
Centerview Range of Equity Values under MCC Scenario	$9.54	$18.1	$14.6	$0.31
	$15.50	$26.8	$23.4	$0.50
Clearwire Management's Range of Spectrum Values	$7.57	$15.2	$11.8	$0.25
	$39.65	$62.2	$58.8	$1.25
Range of Equity Values Based on Impaired Spectrum Transactions	$6.29	$13.3	$9.9	$0.21
	$15.59	$26.9	$23.5	$0.50
Equity Value Based on Lower Bound of Unimpaired Spectrum Transactions	$17.19	$29.3	$25.9	$0.55

[129] Sprint Press Release, "Sprint to Acquire 100 Percent Ownership of Clearwire for $2.97 per Share." December 17, 2012; http://finance.yahoo.com/q/hp?s=CLWR&a=11&b=27&c=2012&d=11&e=31&f=2012&g=d, accessed on February 27, 2013; Reuters, "Dish Network Offers to Buy Clearwire for $3.30 Per Share," January 28, 2013; Evercore 12/12/12 Board Presentation, p. 15; Centerview Canine 12/16/12 Report, p. 6; http://files.shareholder.com/downloads/CLWR/2239836835x0x466836/a24f1857-733d-484e-aaf4-65d08b7490a6/CLWR_Investor_Presentation_May_2011.pdf, accessed on March 1, 2013, slide 5; http://files.shareholder.com/downloads/CLWR/2239836835x0x546515/e25c9414-1c46-4fe7-abbe-c2769d335496/2012%2002%2028%20DB_Hope.pdf, accessed on March 1, 2013, slide 3; FCC IB Docket No. 08-184, *see* Attachment 1; "Harbinger Business Model"; Dan Meyer, "Harbinger Completes Acquisition of SkyTerra," RCR Wireless, March 30, 2010; Frank Rayal, "Setting a Value on the 2.3 Ghz WCS Band," August 5, 2012.

V. Sprint's $2.97 offer for Clearwire does not compensate Clearwire's shareholders for the value attributable to the MCC scenario or for the value of Clearwire's spectrum holdings

As described above, the analyses presented to the Clearwire board's Special Committee by Centerview and Evercore were based on two scenarios: a relatively unprofitable one with a single customer ("SCC"), and relatively profitable one with multiple customers ("MCC"). Sprint's $2.97 offer for Clearwire does not adequately compensate Clearwire's shareholders for the potential profitability of Clearwire's TDD-LTE strategy or for the value of Clearwire's spectrum holdings. As discussed in Sections III and IV, current technology and wireless demand trends suggest an important role for Clearwire's MCC strategy with TDD-LTE technology and for Clearwire's unparalleled spectrum holdings. Sprint's $2.97 offer price substantially undervalues both of these opportunities.

Furthermore, Clearwire does not need complete Sprint ownership in order to pursue the MCC scenario with TDD-LTE technology. The MCC business case envisions Clearwire providing new TDD-LTE services to multiple wholesale customers. The MCC business model was not a product of the Sprint offer. Rather, since at least 2008, Clearwire has been pursuing a business model of selling 4G services—including the earliest 4G service, WiMAX—to multiple affiliates and wholesale customers, not just through Sprint. As Clearwire explained in its 2008 Form 10-K, "As a result of our entering into a 4G MVNO Agreement with affiliates of Sprint, Comcast, Time Warner Cable and Bright House, which we refer to as the 4G MVNO Agreement, …, we expect a portion of our revenues to be derived from our arrangements with our strategic partners, including Sprint and the Investors."[130] Clearwire was not only interested in wholesale arrangements through its investors but also through unrelated third parties: "To reach potential subscribers, we plan to offer our services through multiple sales channels, including … wholesale arrangements with third parties, including our strategic partners."[131]

By 2012, Clearwire maintained the same business model, but wholesale distribution was primarily to Sprint. As Clearwire's 2012 Form 10-K noted:

> In our current 4G mobile broadband markets in the United States, we offer our services through retail channels and through our wholesale partners. Sprint accounts for substantially all of our wholesale sales to date, and currently has wholesale subscribers

[130] Clearwire, Form 10-K for calendar year ending December 31, 2008, filed March 26, 2009, p. 6.
[131] Id., p. 7

> in each of our 4G markets. We ended 2012 with approximately 1.4 million retail and 8.2 million wholesale subscribers.[132]

This outcome, with Sprint as the primary if not sole wholesale buyer of Clearwire services, is remarkably similar to the unprofitable SCC business case developed by Clearwire management and assessed by Evercore and Centerview.

In its latest Form 10-K, Clearwire clearly states that its current business model, independent of the Sprint acquisition, is similar to the MCC scenario:

> We believe that, as the demand for mobile broadband services continues its rapid growth, Sprint and other service providers will find it difficult, if not impossible, to satisfy their customers' demands with their existing spectrum holdings. By deploying LTE, we believe that we should be able to take advantage of our leading spectrum position to offer substantial additional data capacity to Sprint and other existing and future mobile broadband service providers for resale to their customers on a cost effective basis.[133]

Despite pursuing the MCC business model, Clearwire appears to have had difficulty moving from a single customer to multiple customers:

> To date, while we have had a number of conversations with potential new wholesale partners about commercial agreements, we have not yet been successful in securing commitments from new partners that will meet our needs. However, we continue to pursue agreements with parties that have expressed interest.[134]

In none of its annual reports, nor in any other Clearwire documents that we have reviewed, does Clearwire predicate the success of the business model to sell to multiple wholesale customers on ownership of Clearwire completely by another company, much less by Sprint in particular. Indeed, nothing in the 2012 Form 10-K, which discusses the proposed Sprint acquisition in some detail, suggests that complete Sprint ownership (or Softbank-Sprint ownership in the event Softbank's acquisition of Sprint is approved) will facilitate the acquisition of additional wholesale customers in a manner similar to the MCC scenario.[135]

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[132] Clearwire 2012 10-K, p. 2.
[133] Id., p. 3.
[134] Id., p. 3.
[135] In fact, Sprint's acquisition of Clearwire is contingent on the approval of Softbank's acquisition of Sprint.

To date, Clearwire has not managed to develop a vibrant wholesale service outside of Sprint, but that does not mean that it cannot or will not succeed in doing so in the future. In Section III, we described the TDD-LTE technology that Clearwire is deploying, and we explained why the wholesale model is more likely to succeed with TDD-LTE than with WiMAX technology. Unlike prior wireless technologies that can most efficiently be used on a stand-alone basis, the new TDD-LTE technology can be most efficiently used in combination with FDD-LTE, both to provide hybrid services and to enable carrier aggregation. Clearwire is particularly well-positioned to provide both hybrid LTE services as well as carrier aggregation on a wholesale basis for a variety of reasons including:

- Clearwire is the only U.S. carrier currently deploying TDD-LTE technology;
- Clearwire is the only U.S. carrier with sufficient spectrum to offer carrier aggregation services.

If a Clearwire acquisition makes sense for Sprint, it should make even more sense for an independent third party. Sprint (or Softbank-Sprint) ownership provides no special benefit for the MCC business plan.

VI. Conclusion

Clearwire announced board approval of the acquisition of Clearwire by Sprint at a share price of $2.97 on December 17, 2012. Clearwire subsequently disclosed that two financial advisory firms, Centerview and Evercore, in the weeks prior to the board decision, presented to the board and its Special Committee evaluations of strategic options for Clearwire that included the MCC scenario. The MCC scenario is entirely consistent with new TDD-LTE technologies that are being widely adopted around the world in order to achieve the highest-speed wireless services. Under reasonable WACC and perpetuity growth rate assumptions found in investment analyst reports for Clearwire, Evercore's long-term valuation of the MCC scenario is between $10.15 and $11.31 per share. Centerview's long-term valuation of the MCC scenario is between $9.54 and $15.50 per share. These values are more than three times greater than Sprint's offer. It is not clear from the disclosed presentations why the Clearwire board accepted the Sprint offer rather than pursing the MCC scenario.

The Sprint offer of $2.97 per share corresponds to a spectrum price of approximately $0.11 per MHz pop, not the $0.21 per MHz pop asserted by Sprint. A price of $0.11 per MHz pop is well below recent spectrum transactions, even for impaired spectrum. Evercore's valuation of the MCC scenario under reasonable assumptions corresponds to a price of $0.33 to $0.37 per MHz pop, and

Centerview's valuation of the MCC scenario corresponds to a price of $0.31 to $0.50 per MHz pop. These values are consistent with values implied by recent transactions for impaired spectrum. These values are also consistent with the lower end of the range of spectrum values presented to the public by Clearwire executives. Sprint's offer therefore fails to adequately compensate Clearwire's shareholders for the value of Clearwire's spectrum and, relatedly, the value of Clearwire's TDD-LTE technology strategy.

Management Plan Overview

Financial Summary

	2011A	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	12 -'20 CAGR
MCC											
Revenue	$1,253	$1,262	$1,207	$1,082	$2,351	$3,905	$5,098	$6,145	$7,141	$7,447	*24.8%*
Adjusted EBITDA (1)	($305)	($168)	($280)	($482)	$748	$2,275	$3,696	$4,871	$5,763	$5,940	*NM*
% Margin	*-24.3%*	*-13.3%*	*-23.2%*	*-44.5%*	*31.8%*	*58.3%*	*72.5%*	*79.3%*	*80.7%*	*79.8%*	
Capital Expenditures	(220)	(157)	(327)	(294)	(235)	(390)	(510)	(614)	(714)	(745)	*21.5%*
Interest Expense	(477)	(514)	(512)	(511)	(511)	(510)	(510)	(510)	(510)	(510)	*-0.1%*
Free Cash Flow	(1,368)	(624)	(1,113)	(1,269)	(389)	1,200	2,524	2,184	2,600	2,768	*NM*
Cash Balance / (Deficit)	$1,108	$828	($350)	($1,654)	($2,075)	($898)	$1,596	$3,743	$6,306	$9,036	
SCC											
Revenue	$1,253	$1,262	$1,191	$839	$1,211	$1,714	$2,101	$2,434	$2,749	$2,904	*11.0%*
Adjusted EBITDA (1)	($305)	($168)	($267)	($717)	($387)	$106	$745	$1,287	$1,554	$1,640	*NM*
% Margin	*-24.3%*	*-13.3%*	*-22.4%*	*-85.4%*	*-32.0%*	*6.2%*	*35.5%*	*52.9%*	*56.5%*	*56.5%*	
Capital Expenditures	(220)	(157)	(293)	(317)	(154)	(171)	(238)	(243)	(279)	(298)	*8.4%*
Interest Expense	(477)	(514)	(512)	(511)	(511)	(510)	(510)	(510)	(510)	(510)	*-0.1%*
Free Cash Flow	(1,368)	(624)	(1,065)	(1,545)	(1,267)	(641)	(57)	487	725	812	*NM*
Cash Balance / (Deficit)	$1,108	$828	($301)	($1,882)	($3,181)	($3,845)	($3,932)	($3,481)	($2,794)	($2,021)	

Indicates Maximum Funding Gap

Source: Financial projections per Collie management.
Note: U.S. dollars in millions.
(1) Adjusted EBITDA excludes non-cash charges per Collie management calculation.

Appendix B

Investment Analysts' Weighted Average Cost of Capital ("WACC") and Perpetuity Growth Rate Estimates

Analyst	Date	WACC	Perpetuity Growth Rate
JP Morgan	2/13/2013	10.5%	4.0%
Macquarie	2/12/2013	14.6%	3.0%
Morgan Stanley	2/11/2013	13.0%	4.0%
Morningstar	12/17/2012	12.1%	N/A
Wells Fargo	4/27/2012	11.5%	7.0%
Macquarie	3/14/2012	14.3%	3.0%
Average		12.7%	4.2%

Sources:

[1] JP Morgan, "Clearwire", February 13, 2013, p. 4.

[2] Macquarie, "Clearwire - Uneventful Q4 report and earnings call; focus remains on Sprint", February 12, 2013, p. 1.

[3] Morgan Stanley, "Clearwire Corporation - Why is Clearwire Trading Above Sprint & DISH Offers?", February 11, 2013, p. 6.

[4] Morningstar, "DISH Gets FCC Spectrum Approval as Sprint-Clearwire Rumors Reheat", December 17, 2012, p. 14.

[5] Wells Fargo, "Clearwire Corp.", April 27, 2012, p. 1

[6] Macquarie, "Clearwire - Raising TP to $3 on higher EBITDA in 2013 and beyond", March 14, 2012, p. 1.