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Current Valuation Issues

OPPORTUNITIES AND PITFALLS ON THE ROAD TO THE TELEVISION SPECTRUM AUCTION

Industry Focus: Media, Entertainment, and Communications

The Federal Communications Commission's ("FCC's") December 6, 2013 decision to postpone the proposed television spectrum auction from 2014 to mid-2015 provides some needed breathing room for broadcasters to refine their decision-making regarding their spectrum holdings. Nevertheless, 18 months is not a long time, and many industry participants still have questions not only about the complexity of a two-stage auction (a "reverse auction" to release spectrum currently held by television broadcasters followed by a more conventional "forward auction" in which wireless companies bid on the relinquished spectrum, which will be "repackaged" into contiguous blocks), but also about the underlying basics of the auction. Just what is spectrum? How do the channels allocated to television broadcasters fit into the needs of other wireless communications operators? How much is TV spectrum worth?

The purpose of this White Paper is to provide an overview of the fundamentals underlying the auction and identify issues that television broadcasters may want to keep in mind as the auction approaches. That said, the mechanics and timing of the auction itself are still somewhat of a moving target. The FCC had set deadlines of October 31, 2013 for comments and November 14, 2013 for reply comments regarding certain aspects of the

auction, even before the Federal government shut-down that ran from October 1 through October 16. In December, as expected, the FCC postponed the estimated date for the auction itself.

The premise of the FCC auction is that, while over-the-air television viewership has declined, demand for wireless broadband service from smartphones, tablets, and the like, has skyrocketed, potentially resulting in a spectrum shortage for wireless users. Supporters of the auction argue that it makes economic sense to transfer spectrum from broadcast licensees to wireless companies through an auction that would use marketplace forces to move spectrum to where its utility is greatest.

Spectrum Basics

Before even beginning a discussion of the auction itself, several threshold questions must be addressed. What is spectrum? Why are different parts of the spectrum more useful than others? And just where does the spectrum currently held by television broadcasters fit in?

Basically, spectrum consists of radio waves, which are invisible and electromagnetic but can be pictured as rippling waves in water. Each wave is called a cycle. In broadcasting and communications industry parlance, the number of cycles per second is called a Hertz (abbreviated Hz and named after German physicist Heinrich Hertz). For example, a 700 megahertz (MHz) frequency modulates 700 million times per second. A 1,800 MHz (1.8 gigahertz – GHz) frequency modulates 1.8 billion times per second. Broadcasting and wireless communications occur between specialized transmitters and receivers that are tuned to the same frequency.

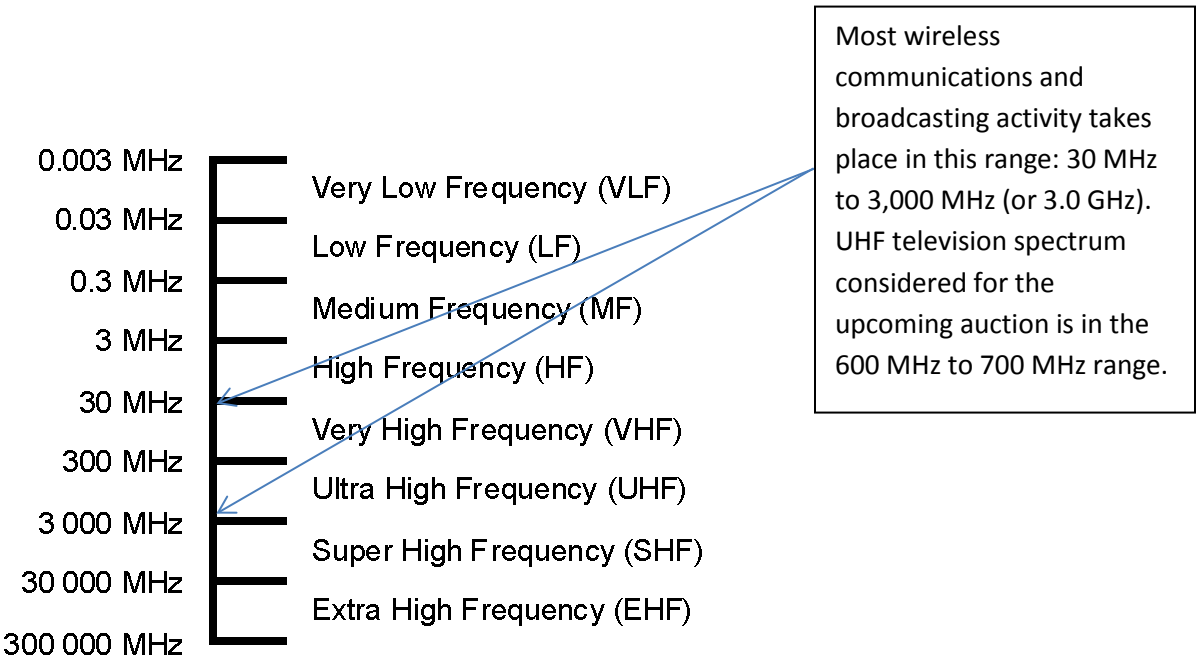
As the nomenclature implies, higher frequencies modulate more times per second whereas lower frequencies modulate fewer times per second. Also, lower frequency waves are longer and higher frequency waves are shorter: an AM radio wave at 1500 kHz is about the size of a soccer field, whereas an FM radio signal wave at 100.1 MHz is about the size of a house, and a microwave at 1.1 kHz is about the size of a baseball. A UHF television wave's size falls somewhere between a baseball and a house. Generally, more electricity is required to push a high frequency signal the same distance as a low frequency signal.

The term MHz can be somewhat confusing because it can refer to both the frequencies over which communications occur and quantities of spectrum. For example, the original licenses granted to each of the cellular telephone companies in each market included the rights to utilize spectrum between 869 MHz and 894 MHz on the frequency band; this allocation contains 25 MHz (894 MHz minus 869 MHz) of spectrum. Each television channel contains 6 MHz of spectrum.

As shown in Figure 1, the entire spectrum can be viewed as a long band beginning at about .003 MHz (30 kHz) and going up to 300,000 MHz (300 GHz). For classification purposes, this is divided into smaller bands, the most commonly known are the Very High Frequency (VHF) and Ultra High Frequency (UHF) bands, which are between 30 MHz and 3,000 MHz (3 GHz). This is where most broadcasting and wireless communications takes place.

Figure 1

Basic Diagram of the Electromagnetic Spectrum



Source: Electronics & Radio Today.

All Spectrum is not Created Equal

As a general rule, lower frequencies travel farther with less expenditure of power. That is why in the pre-digital era, VHF television stations on channels such as 2, 4, 7, and 9 provided a double benefit to their owners. These signals traveled farther than a UHF channel (e.g. 14, 26, 47, or 50) and offered better reception with substantially lower electricity costs.

Spectrum engineering is as much art as science. Experienced spectrum engineers will optimize the characteristics of a particular slice of spectrum for their intended purposes. At the lowest end of the spectrum, Very Low Frequency ("VLF") and Extremely Low Frequency ("ELF") requires huge transmitting antennas (because the waves are so long) and can be used for purposes like communication with submarines on the other side of the earth – the waves travel

very far, but do not carry data efficiently or penetrate surfaces very well. The original cellular telephone licenses were in the 800 MHz band and are considered by some observers, including the author, to be the "sirloin" of the band for wireless telecommunications because they offer an effective balance of signal propagation, building penetration, and economical power consumption. Subsequent auctions of personal communications services ("PCS") and advanced wireless services ("AWS") spectrum in the 1.8 GHz and 1.9 GHz range required more power and did not propagate very far, but have proven to be useful for "microcells" in urban environments and are effective in penetrating buildings. Sprint/Nextel relied heavily on these frequencies and, partially as a result of their inferior propagation characteristics, has historically been a weak number three behind market leaders AT&T Wireless and Verizon Wireless, which have backbones primarily comprised of 800 MHz spectrum.

As another example, in the early 1990s the FCC allocated spectrum in the 220 MHz band for wireless communications; although the signal could travel far, the lower frequency had poor penetration characteristics – the signal could bounce off a leaf – one of the reasons this wireless service spectrum never became commercially successful.

So Where Does the Television Spectrum Fit In?

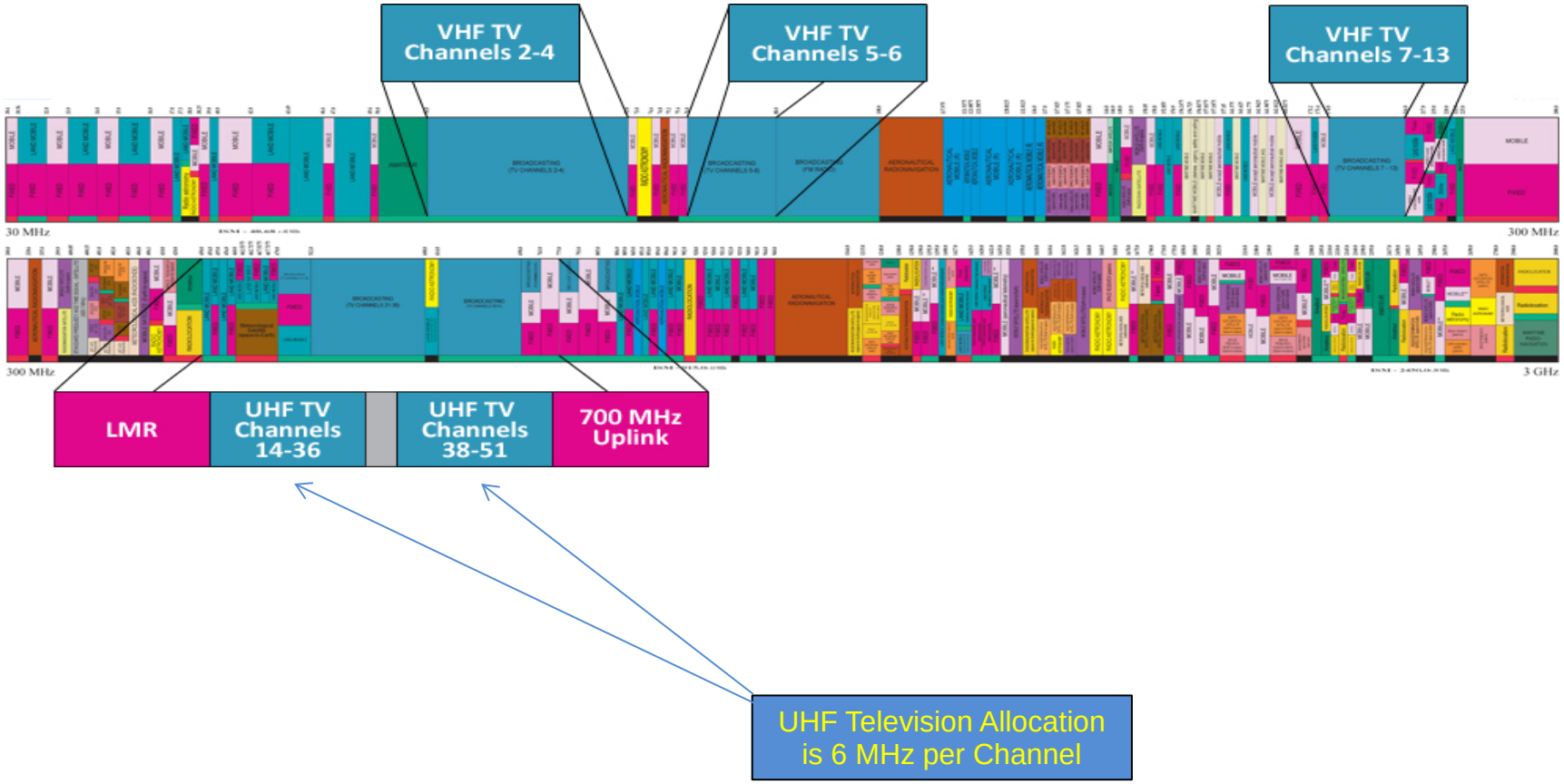
Currently, UHF television channels 14 through 36 occupy the spectrum between 470 MHz and 608 MHz. Channel 37 is allocated for Astronomy and Medical Telemetry Services. UHF Channels 38 through 51 occupy the spectrum between 614 MHz and 698 MHz. This is shown in Figure 2.

The attractiveness of the UHF television spectrum, particularly the upper UHF television channels in the upper 600 MHz band can be described using a real estate analogy. They occupy a "good neighborhood" in the spectrum band that is close to an even better neighborhood. Physically, the UHF television spectrum has favorable distance and penetration characteristics. In addition, it is practically adjacent to the 700 MHz spectrum that was auctioned in recent years by the FCC and is being used by companies such as AT&T and Verizon to provide advanced communications and wireless services. The 700 MHz spectrum is adjacent to the 800 MHz spectrum that forms the backbone of most legacy cellular telephone networks managed by companies like AT&T and Verizon.

While the 600 MHz (television), 700 MHz, and 800 MHz (cellular) frequencies are in the same neighborhood, they are not identical. Engineers believe there could be challenges in relocating certain television stations to different spectrum in the 600 MHz (VHF band), or establishing wireless communications and broadband services in the 600 MHz band.

Figure 2

Location of UHF Television Channels 14-36 and 38-51 Subject to Spectrum Auction



Source: The Broadcast Television Spectrum Incentive Auction, *Innovation in Policy to Ignite Innovation for Consumers and Business*, FCC Staff Summary.

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So What does the FCC Plan to Do?

Figure 3 contains a closer look at the current UHF television spectrum allocation. It shows how the channel configuration is bordered on the upper end by 700 MHz uplink frequencies, which are used for wireless broadband and communications. At the lower end, which will abut the remaining UHF television channels after the repacking process, is the Land Mobile Radio ("LMR") spectrum allocation. This spectrum accommodates the traditional two-way mobile radio services that are used primarily by fleets of vehicles for utilities, construction companies, and the like.

Figure 3, for purposes of illustration, breaks the auction process into four steps. In Step 1, existing full-power and Class A low-power television stations will be able to participate in the reverse auction, where they set a minimum acceptable price to sell, receive an offer from the FCC, and endeavor to find a middle ground. Likely auction participants will be less profitable secondary stations that do not receive dominant ratings. At one point, the FCC hoped that this process would yield 120 MHz of spectrum, equivalent to 20 six MHz channels.

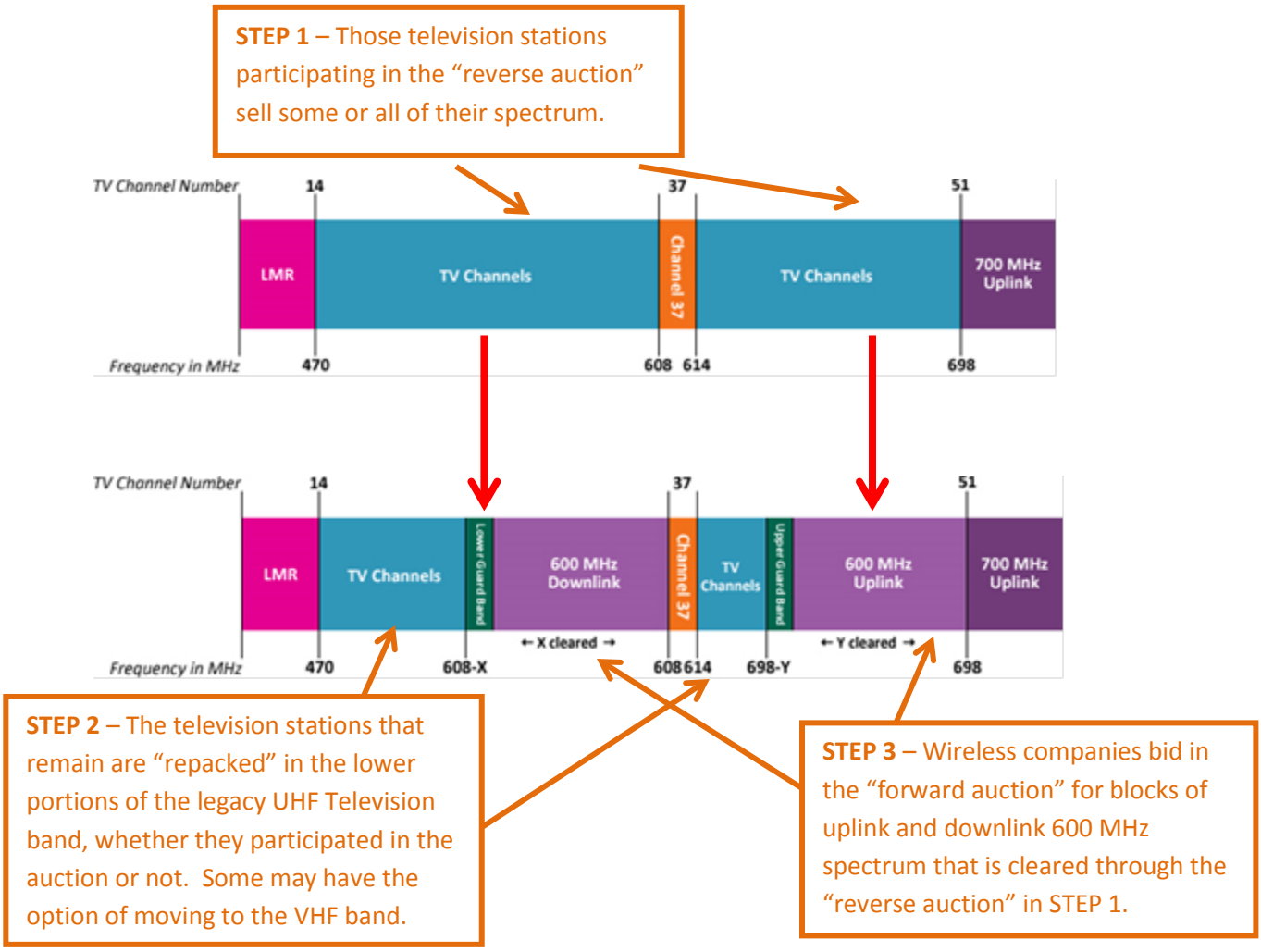
Step 2 is the repacking process in which all remaining television stations are consolidated in the lower end for the former UHF television bands. The process is visually similar to defragmenting a hard drive on a personal computer. Immediately after the auction, existing television stations that do not sell will retain slices of spectrum all over the 600 MHz band. The repacking process, in essence, defragments the band by grouping the remaining television station in one place (the lower end) and the cleared wireless spectrum in another (the higher end).

Step 3 is when wireless companies will bid on the "cleared" spectrum. As will be shown below, wireless spectrum has generally sold for higher prices than broadcasting spectrum. Notice that the cleared spectrum will be "paired" with some channels dedicated to uplink and some to downlink (i.e. send and receive signals from a wireless device).

Step 4 is the implementation phase. The proceeds of the forward auction are anticipated to be used for several purposes. First, they will pay the television stations the price they negotiated in the reverse auction. Second, they will pay the necessary costs to relocate the remaining television stations that are required to move to a different channel as part of the repacking process. Finally, after the costs of administering this process, any remaining proceeds will be utilized to reduce the Federal deficit.

Figure 3

A Closer Look at UHF Television Spectrum and Proposed FCC Auction Progression



STEP 4 – Implementation phase. It is hoped that the proceeds from STEP 3 will provide sufficient revenues to: 1) Compensate the participants in the STEP 1 "reverse auction" 2) Pay for the cost for new equipment, etc. for stations that move to new channels in the "repacking" process, and 3) make a significant contribution to reducing the national debt.

Source: Ibid. The terms "uplink" and "downlink" refer to the send and receive functions in communications.

Which Wireless Telecom Companies Own What Spectrum?

Figure 4 shows roughly which telecom companies occupy what spectrum in the Top 100 markets as of mid-2013. As mentioned earlier, Verizon and AT&T dominate the 800 MHz band by virtue of their consolidation of the initial 800 MHz Cellular Telephone licenses in the 1980s. They also bid and won most of the spectrum in the 700 MHz auctions. It also shows that secondary wireless players like Sprint, T-Mobile, Leap, and NTELOS, rely on higher frequencies.

Ironically, the biggest spectrum holder of them all, Clearwire, has also been the most financially challenged; it was recently acquired by Sprint for $2.2 billion at $2.97 per share of common stock. It accumulated 150 MHz of spectrum across the Top 100 markets by negotiating long-term leases for Educational Broadband Service ("EBS") spectrum from educational institutions. Prior to its acquisition by Sprint, Clearwire was financially and operationally challenged. One significant reason is their 2.5 GHz spectrum holdings, which are more difficult to engineer or consolidate with the legacy wireless operations of other companies.

Figure 4

Spectrum Holdings of Major Wireless Telecom Companies by Band

Average Spectrum Holdings in Top 100 Markets in MHz								
Designation	Broadcast	700 MHz	Cellular	AWS	PCS	MMDS/ AWS-4	2.5 GHz	Total (Weighted Average)
Frequency Band	600 MHz	700 MHz	800/850	1.7/2.1	1.9 GHz	2.0/2.2 GHz	2.5 GHz	
Company (Market Share)								
AT&T (32.1%)		27	24	5	34			90
Verizon (32.6%)		31	25	30	19			105
T-Mobile (10.1%)				35	27			62
Sprint (16.9%)			14		36			50
MetroPCS (2.7%)		1		12	8			21
Leap (1.7%)		1		14	6			21
US Cellular (1.8%)		3	4	8	9			24
NTELOS				4	22			26
Clearwire							150	150
LightSquared						20		20
DISH Network		6				40		46
Broadcast	120							120
Federal					10			10

Source: JP Morgan, Bond & Pecaro, company financial reports.

So how much is spectrum worth anyway?

Two general sources of data are available regarding spectrum values: prior FCC auctions and private market transactions between companies. This latter source contains two subsets: prices paid for spectrum that has been designated for wireless telecommunications and broadband services, and "stick value" purchases of television stations. In broadcasting parlance, "stick value" refers to an acquisition that contains little more than an FCC license and a transmission facility. In such purchases, the primary asset is the underlying FCC licensed spectrum.

Based upon the analysis earlier in this report, one would logically expect two trends. The first would be that the prices paid for lower frequencies (i.e. 600, 700, 800 MHz) would be more than for higher frequencies. In addition, as perception of a spectrum shortage emerged in recent years, the value of spectrum should be increasing over time.

Sadly, the real world does not follow a rational pattern, nor have the FCC auctions. This anomaly results partially from the fact that economic conditions at a given point in time – ranging from euphoric to recessionary - can have an impact on the results. Additionally, the manner in which the FCC structures an auction can distort results relative to what pure market forces might dictate.

A history of FCC spectrum auctions is presented in Exhibit 5. To facilitate comparisons among different types of licenses and market sizes, it has become common in wireless industry parlance to value spectrum on a price per MHz per capita (or "price per MHz per pop") basis in which a license is divided first by the number of MHz it contains and then by an estimate of the population it covers.

Interestingly, what are typically regarded as the most valuable licenses (the 800 MHz cellular authorizations) were basically given away for free in the 1980s. In the early stages of the wireless industry, there was still great uncertainty as to how the market would develop, so these licenses were initially given to companies and individuals who promised that they could construct them. The licenses for the largest markets were initially issued by comparative hearings, but became so burdensome that the FCC switched to a lottery process, using the same machine that selected draftees in the Vietnam War era.

As those legacy cellular telephone systems began to succeed, the FCC put up for auction a series of Personal Communications Services ("PCS") licenses in the 1.8-1.9 GHz range. The highest prices were paid in auctions 5, 11, and 35, where the FCC offered discounts and incentives for new companies to enter the industry. Resulting prices were bid upwards because many auction participants only had to make a minimal downpayment. While the intentions were good, the results were not. Many companies could not pay their bids to the FCC and went bankrupt, most notably the NextWave bankruptcy. In that cases, the licenses were mired in a decade of litigation and were ultimately acquired by AT&T and Verizon.

The 700 MHz auctions in 2008 are seen as a guideline for the television spectrum auctions since, as discussed earlier, they are in general proximity to the 600 MHz television allocations. The auction bids for these licenses averaged $1.29 per MHz per capita across all markets, ranging nominal amounts in smaller markets to approximately $9.00; the average for the Top 25 markets was around $4.00.

Figure 5

History of Major FCC Spectrum Auctions

Auction Number	n/a	4	5	11	35	58	66	71	73	92
Designation	Cellular	PCS	PCS	PCS	PCS	PCS	AWS	PCS Reauction	700MHz	PCS Reauction
Year	1980s	1995	1995	1997	2001	2005	2006	2007	2008	2011
Frequency	800MHz	1.8-1.9GHz	1.8-1.9GHz	1.8-1.9GHz	1.8-1.9GHz	1.8-1.9GHz	1.7-2.1GHz	1.8-1.9GHz	700MHz	1.8-1.9GHz
Total MHz	50	60	30	30	35	Misc.	90	Misc.	62	Misc.
Total Proceeds (Millions)	Free	$7,700	$10,100	$2,500	$16,300	$2,250	$13,879	$230	$14,827	$470
Average Value/MHz/Pop	n/a	$0.50	$1.30	$0.30	$2.11	$1.06	$0.54	$0.25	$1.29	$0.02
Highest Value MHz/Pop	n/a	$1.00	$5.00	$5.00	$11.00	$2.30	$1.50	$1.30	$9.00	$1.90

Source: FCC auction data, Bond & Pecaro estimates.

In Figure 6, additional information is presented regarding recent private sales of spectrum between companies. These transactions certainly support the proposition that 700 MHz spectrum sells at a premium to spectrum in the 1.7 GHz to 2.5 GHz range, and validates transactions priced in the $1.00 to $4.00 per capita per MHz range for 700 MHz spectrum.

Figure 6

Recent Private Market Wireless Communications Spectrum Transactions

Buyer	AT&T	AT&T	Verizon	Verizon	Verizon	Sprint	Grain Mgmt.	AT&T	Sprint	T- Mobile
Seller	Aloha	Qualcomm	Cox	Spectrum Co.	Leap	US Cellular	Verizon	Verizon	Clearwire	US Cellular
Asset	700 MHz	700 MHz	AWS 1.7-2.1 GHz	AWS 1.7-2.1 GHz	700 MHz Chicago	1.9 GHz PCS Chicago, St. Louis	700 MHz in North Carolina	700 MHz in Large Markets	2.5 GHz	AWS 1.7 - 2.1 GHz
Date	2007	2010	2012	2012	2012	2012	2013	2013	2013	2013
Price (Millions)	$2,500	$1,925	$315	$3,600	$120	$480	$189	$1,900	$2,200	$308
Value/MHz/Capita	$1.06	$0.86	$0.61	$0.69	$1.60	$1.74	$4.00	$3.80	$0.21	$0.96

Source: Company press releases, trade press reports, and Bond & Pecaro, Inc. estimates.

How Do Wireless Spectrum Values Compare to TV Spectrum Values?

The past 12 months have proven to be robust for television mergers and acquisitions, buoyed by the financial health of the industry. Major television stations have benefitted from increasing revenues from political spending and the development of retransmission revenues from cable and satellite system operators. As shown in Figure 7, the "megadeal" has returned, with numerous group acquisitions occurring in excess of $100 million. These large acquisitions, however, are for profitable television stations that often have significant local news operations, not pure spectrum.

Some companies like NRJ Holdings and OTA Broadcasting have been buying marginal and peripheral stations, recognizing that there may be arbitrage opportunities as a result of the differential between current television spectrum values and the potential for higher prices from participation in the wireless spectrum auction. Data from their acquisitions are summarized in Figure 8. Expressed on a MHz per capita basis, the indicated values in these transactions ranges from $0.07 to $3.59, with a weighted average of approximately $0.33. The averages are closer to $0.40 in the largest markets and fall to below $0.15 in DMAs with market rankings below 25. Full power stations trade at a premium compared to Class A low-power stations, which will also be permitted to participate in the spectrum auction. It may be possible for some buyers to lower their effective price per MHz per capita by petitioning the FCC to relocate a peripheral station and increase its population coverage.

The difference between these "TV stick" averages in the $0.30 to $0.40 range and the 700 MHz wireless spectrum values in the $4.00 range in larger markets highlights the upside opportunity seen by auction proponents. But there is still additional uncertainty for station

owners. Even if the second auction yields as high as $4.00 per MHz per capita, it is unclear what fraction of that would revert to the selling television broadcasters. Wireless companies may not find 600 MHz spectrum to be as attractive as 700 MHz. Below a certain market rank, wireless company interest may wane since spectrum is not as scarce. Ironically, spectrum values could also be depressed as more television stations increase the supply of spectrum by participating in the auction.

The value of a successful full-power station in a large market eclipses any of these values. For example, the $215 million sale of WTVF in Nashville from Landmark to Journal Communications covers a population of 2.7 million and was equivalent to $13.27 per MHz per capita. Of course, this value contains valuable assets other than the license, such as real estate, equipment, and news infrastructure; however, without the FCC license it could not operate as an over-the-air television station.

Figure 7

Recent Group Television Acquisitions

Buyer	Seller	Price
Tribune	Local TV, LLC	$2,725 million
Gannett	Belo	$2,200 million
Sinclair	Newport	$413 million
Sinclair	Fisher	$373 million
Sinclair	Barrington	$370 million
LIN	New Vision	$330 million
Media General	Young	$300 million
Nexstar	Newport	$286 million

Source: Company news releases and trade press reports.

Figure 8

NRJ Holdings and OTA Broadcasting "Stick" Television Acquisitions

Date	City of License	DMA	DMA Rank	Call Letters	Estimated Price per MHz/Capita
NRJ Holdings, LLC Acquisitions					
12/30/2010	San Francisco	San Francisco-Oakland-San Jose, CA	6	KCNS	0.38
1/15/2013	Van Nuys	Los Angeles, CA	2	KSKJ-CD	0.52
12/31/2012	Baytown	Houston, TX	10	KUBE-TV	0.49
1/1/2012	Long Beach	Los Angeles, CA	2	KSCI	0.54
1/1/2012	Honolulu	Honolulu, HI	72	KIKU	0.54
1/1/2012	Poway	San Diego, CA	28	KUAN	0.14
12/31/2012	Concord	San Francisco-Oakland-San Jose, CA	6	KTNC-TV	0.30
1/28/2013	Los Angeles	Los Angeles, CA	2	KNET-CD	0.44
1/28/2013	Los Angeles	Los Angeles, CA	2	KNLA-CD	0.44
1/31/2012	Trenton	Philadelphia, PA	4	W50DZ-D	0.11
8/31/2012	Red Lion	Harrisburg-Lancaster-Lebanon-York, PA	41	WGCB-TV	0.33
12/30/2010	Lawrence	Boston, MA (Manchester, NH)	7	WMFP	0.11
8/31/2012	Chicago	Chicago, IL	3	WOCH-CA	0.13
8/26/2011	Bridgeport	New York, NY	1	WSAH	0.34
9/13/2011	Reading	Philadelphia, PA	4	WTVE	0.63
OTA Broadcasting, LLC Acquisitions					
3/6/2012	New York, NY	New York, NY	1	WEBR-CD	0.08
1/28/2013	San Jose	San Francisco-Oakland-San Jose, CA	6	KAXT-CD	0.46
5/24/2011	Novato	San Francisco-Oakland-San Jose, CA	6	KTLN-TV	0.24
1/4/2013	Nashua	Boston, MA (Manchester, NH)	7	WYCN-LP	0.18
11/16/2012	Houston	Houston, TX	10	KUGB-CD	0.07
6/30/2011	Seattle	Seattle-Tacoma, WA	13	KFFV	0.19
11/30/2011	Bellingham	Seattle-Tacoma, WA	13	KVOS-TV	0.48
5/10/2013	Pittsburgh	Pittsburgh, PA	23	WBGN-CD	0.19
5/10/2013	Beaver	Pittsburgh, PA	23	WNNB-CD	0.19
5/10/2013	New Castle	Pittsburgh, PA	23	WPCP-CD	0.19
5/10/2013	Butler	Pittsburgh, PA	23	WJMB-CD	0.19
5/10/2013	Greensburg	Pittsburgh, PA	23	WEMW-CD	0.19
5/10/2013	Kittanning	Pittsburgh, PA	23	WKHU-CD	0.19
5/10/2013	Washington	Pittsburgh, PA	23	WWLM-CA	0.19
5/10/2013	Uniontown	Pittsburgh, PA	23	WWKH-CA	0.19
5/10/2013	Charleroi	Pittsburgh, PA	23	WMVH-CA	0.19
1/3/2012	New Bedford	Providence, RI-New Bedford, MA	53	WLWC	0.41
10/4/2013	Palm Springs	Palm Springs, CA	148	KPSE-LP	0.90
10/4/2013	Palm Springs	Palm Springs, CA	148	KMIR-TV	3.59
5/10/2013	Weirton	Wheeling, WV-Steubenville, OH	158	WJPW-CD	0.21
5/10/2013	Bridgeport	Wheeling, WV-Steubenville, OH	158	WVTX-CD	0.19

Source: SNL Kagan data and Bond & Pecaro, Inc. estimates.

Bringing it all together: Television Value Case Study

To summarize the implications from this data, a case study is presented in Figure 8. The hypothetical DMA presented contains a population of approximately 6.2 million people and generates television advertising revenues of approximately $350 million – equivalent to a DMA rank between 10 and 20. The left portion of the table provides values based upon continued operation as a television business, while the right portion reflects wireless telecom spectrum values.

As an operating television business, a dominant legacy television station with a 24% market share, advertising and retransmission revenues of close to $100 million, and a 34% cash flow margin could be worth over $340 million, equivalent to a cash flow multiple of ten. This works out to a value per MHz per capita of $9.20.

A secondary station, such as a MyNetwork affiliate or an independent station, might only achieve a 2% market share and a lower profit margin of 25%. In this case, the $25 million value, equal to a cash flow multiple of nine, is equivalent to $0.67 per MHz per capita. Finally, a marginal "stick value" station, which typically has coverage disadvantages and negligible financial performance, has a value of $12.3 million and a value per MHz per capita of $0.33.

The right side of the table provides values based upon the per MHz per capita results for wireless telecom spectrum transactions: the $4.00 high end from recent transactions, the $1.29 average from Auction 73, and an assumed $1.00 per MHz per capita multiple.

This data indicates that it does not appear attractive for dominant stations to participate in the spectrum auctions. For secondary and peripheral television stations, however, the auction merits careful study. Although all of the per MHz per capita multiples described above

are tied back to some type of marketplace activity, they could vary widely in an auction scenario, based upon factors that have not yet been defined, such as the ability of the dominant wireless operators (AT&T and Verizon) to fully participate in the auction, and factors that currently cannot be known, including the number of stations that elect to participate in the reverse auction and the split the Federal government needs to satisfy the spectrum sellers, repack the spectrum, and administer the auctions.

Figure 9

Television Spectrum Value Case Studies

	Dominant Legacy Station	Secondary Station	Pure Stick		Value at High End of Recent Private Transactions	Value at Auction 73 Average	Value at $1.00 Estimate
	Operating Television Scenario				**Spectrum Value Scenario**		
Market Revenues (000)	$350,000	$350,000	n/a		n/a	n/a	n/a
Advertising Share	24%	2%	n/a		n/a	n/a	n/a
Revenues (Including Ancillary)	$97,778	$11,133	n/a		n/a	n/a	n/a
Margin	35%	25%	n/a		n/a	n/a	n/a
Broadcast Cash Flow (000)	$34,222	$2,783	n/a		n/a	n/a	n/a
Broadcast Cash Flow Multiple	10	9	n/a		n/a	n/a	n/a
Value (000)	$342,200	$25,000	$12,275		$148,800	$47,988	$37,200
Population (000)	6,200	6,200	6,200		6,200	6,200	6,200
Equivalent Value MHz/Capita	$9.20	$0.67	$0.33		$4.00	$1.29	$1.00

So What's the Upshot?

The timing and mechanics of the proposed auction will become clearer in coming months, but there are a number of factors that a television station owner should keep in mind as the time to make a decision approaches.

1. Start thinking in terms of the per MHz per capita valuation metric (each television station license spectrum allocation is 6 MHz)

2. Remember, the decision may not be simply sell or don't sell. It might be possible to sell part of your spectrum, or sell all of it and then share an allocation with another television broadcaster.

3. Value does not equal proceeds – and this is where one must take care not to make apples to oranges comparisons. Despite the attractive values implied from wireless telecom transactions from previous forward auctions and transactions, it is unclear what proportion of the funds will be allocated and distributed to television broadcasters. Despite the engineering complexity of this endeavor, the risk is probably only 30% technical but 70% regulatory/judicial as we await the final design of the auction.

4. Don't give up on broadcasting quite yet. Wall Street surely hasn't. In Figure 9, the implied cash flow multiples (a standard measure for growth potential), are compared for publicly traded television and wireless telecommunications companies. Contrary to the prevailing prognostications that the television broadcasting industry is in decline, and that the wireless telecommunications industry is ascendant, the indicated cash flow multiple for a television company is 11 times, compared to only 7 for its wireless counterparts. This variance is attributable, to a significant extent, to the huge improvement in television operating results resulting from retransmission, political, and new media revenue streams. In contrast, while the cutting edge technology of wireless communications is enticing, the fact is that the wireless sector is extremely competitive and has historically underperformed television broadcasting from a cash flow margin perspective.

5. Hope that the FCC avoids a Rube Goldberg scheme – so named for the famous cartoonist who drew satirically complicated and convoluted machines to do simple things. The PCS auctions that resulted in the NextWave bankruptcy show how an auction can be doomed if it tries to do too many things. That auction sought to introduce new technology, raise billions of dollars, and award licenses to a multitude of small and disadvantaged entities. With too many goals, it did not accomplish any of them well. As a result, the award of the licenses was delayed, the money that was raised was reduced, and many entrepreneurs actually encountered additional

difficulties entering the wireless business. In the television spectrum auction, for example, some industry participants have voiced a concern that without restrictions, the auction will be dominated by large companies such as Verizon and AT&T. However, such restrictions may have the unintended consequence of dis-incenting the very bidders that could raise the most money for the reverse auction, the repacking process, and Treasury.

6. There is also a re-packing risk even for stations that do not participate in the auction – remember the digital transition. Regardless of a television station's decision, it is likely to be moved to a different channel as part of the re-packing process. If the implementation of the digital transition in 2009 is a guide, do not take for granted that your new signal will be as good as the current one. Moreover, the implementation of the frequency move, while expected to be paid for with the forward auction proceeds, may be unexpectedly burdensome. For example, some engineers have pointed out that the new channel positions will require heavier transmitting antennas which may, in turn require tower upgrades. Because the number of tower companies and crews qualified to perform these upgrades is limited, the implementation process could be delayed by years. Additionally, interference issues will need to be ironed out not just with operators in your market, but also in adjacent markets, a process that is complicated by the fact that we do not yet know how the channels will be configured.

In short, the television spectrum auction may present opportunities for the owners of secondary and marginal stations, but the magnitude of the benefit is still dependent upon a number of technical, regulatory, and economic variables that need to be monitored closely in the months ahead.

Bond & Pecaro, Inc. will provide updates on this issue as the auction process proceeds become finalized. Please contact John S. Sanders of the firm at 202-775-8870 with questions or requests for additional information.

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Figure 10

Comparative Cash Flow Multiples

Public Operating Cash Flow Multiples Comparison			
Television		Wireless	
Gray	8x	US Cellular	6x
Sinclair	12x	LEAP	9x
Belo	9x	NTELOS	6x
LIN	11x	Sprint/Nextel	8x
Nexstar	15x		
Average	11x	Average	7x

Source: Publicly traded stock prices and company SEC filings.