

ATTACHMENT A

Cyren Call Communications Corporation Profile and Principals

Company Profile

Cyren Call is a new venture led by veterans of the wireless industry and public safety communications who seek to create a nationwide, seamless, next-generation network for better public safety communications. Cyren is headed by Morgan O'Brien, a co-founder of Nextel and a long-time champion of improving public safety communications.

Cyren is working with leaders of public safety, business, government and other stakeholders to advocate for 30 MHz of spectrum in the 700 MHz band, scheduled to be auctioned in 2008, to be allocated to and utilized by the public safety community for a dedicated broadband network.

Principals

Morgan O'Brien Chairman

Morgan O'Brien is a co-founder and Chairman of Cyren Call Communications, a new venture seeking to create a nationwide, seamless, broadband network for public safety communications.

Mr. O'Brien was the co-founder of Nextel Communications, Inc., in 1987 and served as its Chairman from 1987 to 1995 and vice-chairman until its merger with Sprint Corporation in 2005. A pioneer who has shaped the wireless industry and changed the way Americans communicate, Mr. O'Brien was honored by RCR Wireless News and inducted into the Wireless Hall of Fame. Along with Nextel co-founder Brian McAuley, Mr. O'Brien helped transform the SMR industry into a major wireless player.

Mr. O'Brien began his career as a lawyer with the Mobile Services Division of the FCC in 1970 where he assisted in establishing the rules and procedures for all land mobile services. Later, Mr. O'Brien practiced communications law and from 1986 to 1990 was the Partner-in-Charge of the telecommunications practice at Jones, Day, Reavis & Pogue. Known for his innovation and willingness to take risks, Mr. O'Brien was recognized in 1987 as New Jersey Entrepreneur of the Year and in 1993 he was voted the RCR Person of the Year. Recently, he was inducted into the Washington Business Hall of Fame. Mr. O'Brien's interests extend to his support of community. He currently serves as Chairman of the Board of Trustees of The Field School in Washington, DC and as a member of the Law Board of Northwestern University School of Law. Mr. O'Brien is married to Belle Brooks O'Brien and has two sons, Brooks and Aidan. He received an AB in Classical Studies from Georgetown University and a law degree from Northwestern University.

Brian McAuley
Board Member and Chair, Finance Committee

Brian McAuley serves on Cyren Call's Board of Directors and chairs its Finance Committee. Mr. McAuley is currently Chairman of both Pacific DataVision, Inc., and Imagine Tile, Inc. He has been a founder of several companies, including Nextel Communications, and NeoWorld Communications where he was also President and CEO.

Mr. McAuley's prior business experience includes being a financial and operations executive at several public companies and a Manager at the accounting firm of Deloitte & Touche. Mr. McAuley is a member of the Board of Directors of United Rentals, Inc., where he is Chair of the Audit Committee. Mr. McAuley has a Bachelor of Business Administration Degree from Adelphi University and is a recurring guest lecturer of the Executive MBA program of the Wharton School of the University of Pennsylvania. He also is a Certified Public Accountant, Chairman or member of various Boards and Audit committees, and a member of various finance and telecommunications industry organizations. Brian and his wife Jane reside in Franklin Lakes, NJ.

Keith Kaczmarek
President

Keith Kaczmarek is a co-founder and President of Cyren Call Communications. With more than 20 years of wireless telecommunications experience, Mr. Kaczmarek has played prominent technology and operations leadership roles at FiberTower, Teligent, Nextel, AirTouch, PrimeCo and GTE.

As an early investor in FiberTower, Mr. Kaczmarek also held a number of roles including CTO and COO. Mr. Kaczmarek led the development, deployment and operations of Teligent's fixed wireless network. Prior to Teligent, Mr. Kaczmarek served as CTO for PrimeCo (later acquired by Verizon) where he launched the first CDMA network in the PCS band. Continuing to serve as a technology pioneer, Mr. Kaczmarek developed and deployed first and second-generation iDEN specialized mobile radio networks at Nextel. He also was instrumental in the early development of CDMA and the evaluation and selection of several leading edge technologies while at AirTouch (later acquired by Verizon).

Mr. Kaczmarek holds a MBA degree, a MS degree in Electrical Engineering and a BS degree in Electrical Engineering from the University of Illinois.

Tom Sidman
Executive Vice President - Business Processes

Tom Sidman is a co-founder and Executive Vice President, Business Processes of Cyren Call Communications. A wireless industry veteran, Mr. Sidman was the General Counsel of Nextel Communications, from October 1994 until early 2001, and thereafter served as Senior Legal Advisor to Nextel until April 2003. From the time of Nextel's initial public offering in January 1992, with Mr. Sidman acting as principal outside counsel or serving as General Counsel, Nextel concluded numerous significant acquisition transactions in which an aggregate of in excess of 350 million shares (split adjusted) of Nextel common stock were issued; raised gross cash proceeds of more than \$4.5 billion in major issuances of its common and preferred equity to the public, significant shareholders and strategic investors; and issued over \$12.5 billion in stated value of various high yield, redeemable or convertible debt or hybrid securities.

Mr. Sidman also represented Nextel in structuring and negotiating various major strategic transactions, including equipment purchase and related financing arrangements involving Motorola and Nortel; the formation, financing and establishment of relationships with each of Nextel Partners and NII Holdings; the sale to, and leaseback from, Spectrasite Holdings of certain tower assets of Nextel; and the establishment of outsourcing arrangements relating to billing services with Amdocs and to customer care services with IBM and Teletech. He received his undergraduate degree from the University of Virginia and graduated from The University of Virginia School of Law. Subsequently, he obtained an MBA degree from The George Washington University.

John Melcher
Executive Vice President - External Affairs

John Melcher is Executive Vice President, External Affairs of Cyren Call Communications. He is also President and CEO of The Melcher Group, a public safety oriented consulting firm based in the Houston, Texas area, and specializes in corporate strategy, mergers and acquisitions for companies working in the public safety arena. Mr. Melcher retired in August of 2005 as the Executive Director for the Greater Harris County 9-1-1 Emergency Network in Houston, Texas, and had been with the Network since 1990. The GHC Network is the nation's largest regional 9-1-1 program serving more than twelve hundred 9-1-1 call-takers that dispatch for some 160 responding agencies. He led the first implementation of wireless location technology allowing call centers to pinpoint the location of 9-1-1 callers from cellular devices. Mr. Melcher's responsibilities included the design and management of integrated voice and data networks providing emergency number service for over four million citizens in the Houston metropolitan area.

Mr. Melcher is Past President of the National Emergency Number Association (NENA). He works with various national task groups, the Federal Communications Commission

and members of Congress on issues related to public safety technology, wireless telecommunications issues, legislation and policy.

Mr. Melcher has developed and patented emergency communications system solutions and has been recognized by Computerworld Magazine and the Smithsonian Institute as an Innovator of Information Technology. In 1998 and 1999, he was recognized as one of the Most Influential People in Public Safety by Radio Resource magazine. His career in public safety began in the late 1970's working in law enforcement and emergency medical services.

David Knutson
Vice President - Development

David Knutson is the Vice President of Development for Cyren Call Communications. In this role he is responsible for the development of Cyren's business and technical direction. Most recently, Mr. Knutson was the Executive Vice President for the Wireless Network Services division of Wireless Facilities, Inc., overseeing a \$200 million per year business unit responsible for providing outsourced engineering, design and implementation services to commercial wireless carriers as well as the public safety community. He also held roles as Senior Vice President/Chief Operating Officer and Senior Vice President of Outsourcing.

Previously, Mr. Knutson was Vice President of Engineering and Operations for TeleCorp PCS, AT&T Wireless' largest affiliate until its acquisition in 2002 for \$5.7 billion. Mr. Knutson was an original member of the management team and supported the business planning, capital raise, strategic development and public offering of TeleCorp. He helped build TeleCorp to a 3,500 person organization generating revenues in excess of \$1 billion annually.

Prior to that, Mr. Knutson was Director of Engineering for American Personal Communications/Sprint Spectrum. American Personal Communications received a Pioneers Preference license for its work in developing the PCS industry and was the first PCS company to launch commercial service in the United States in November of 1995. He holds a bachelor's degree in Electrical Engineering from Virginia Tech.

Greg Meacham
Vice President Industry Relations

Greg Meacham is Vice President Industry Relations for Cyren Call Communications. He also serves as Vice President of Business Development, Public Safety, for Wireless Facilities, Inc. There he is working to refine a wide range of wireless service and solution offerings to ensure that the public safety community has access to cutting edge technology.

Mr. Meacham previously served as Vice President of Federal Programs and Homeland Security at Nextel Communications, Inc., where his primary responsibility was to enhance the delivery of services and products that meet the needs of the federal market and the public safety community. He created the Nextel Emergency Response Team, which provides rapid deployment capability to support public safety in times of crisis, and championed the use of satellite linking and the development and deployment of Satellite Cell Sites on Light Trucks (SatCOLTs).

Mr. Meacham served in law enforcement, first with the Baltimore Police Department in 1974 and later as a Special Agent of the FBI for 25 years. In 1999, Mr. Meacham was appointed to the Senior Executive Service and named the FBI's Chief of Technical Programs. In this capacity, he had responsibility for the existing FBI Land Mobile Radio system and the implementation the FBI's Integrated Digital Wireless Communication Strategy.

John Lane
Senior Policy Advisor to the Chairman

John Lane is the Senior Policy Advisor to the Chairman of Cyren Call Communications. In this capacity, Mr. Lane draws on his extensive prior experience with the domestic wireless industry especially as it relates to public safety wireless communications. Mr. Lane is a Life Member of Association of Public-Safety Communications Officials - International (APCO), the highest honor that the association can bestow and reserved only for those members who have made a significant contribution towards the objectives of APCO. Mr. Lane served as APCO's senior counsel for more than 20 years and represented APCO in the highest traditions of honesty and integrity before Congress and the Federal Communications Commission (FCC). He was instrumental in convincing key congressmen they needed to insist the FCC give public safety priority in spectrum allocations and proposals. This resulted in additional spectrum being awarded to public safety in the Communications Amendments Act of 1982, (Senate Report) and in the 1983 Appropriations Act for the FCC. Mr. Lane also assisted some individual public safety communications agencies in obtaining unused broadcast spectrum for public safety use. Mr. Lane assisted the association leadership in strengthening its financial stability, investments and accountability. He helped create APCO's original tax-exempt institutes and subsidiaries. He served as a key business and legal advisor for each board with

which he worked and, in times of financial hardship, continued to serve APCO on a pro-bono basis.

Mr. Lane is a former partner in Wilkes, Artis, Hedrick & Lane, a Washington law firm; a member of the ABA, where he was the chairman of the standing committee unauthorized practice of law as well as the chairman of the standing committee national conference groups; a former member of Federal Commission Bar Association; and held a position on the Board of Regents at Georgetown University.

Mr. Lane received his undergraduate degree and Juris Doctorate from Georgetown University.

ATTACHMENT B

Motorola, April 28, 2005, WT Docket No. 05-157:

. . . we are now in the early stages of a transition where emergency responders will need instant access to high-speed broadband and wideband wireless services for the improved dissemination of video and graphic images necessary to defuse dangerous and/or violent situations. These more bandwidth-intensive applications will only be possible with adequate allocations of dedicated spectrum.

. . . Motorola believes that the need for broadband data capability on a wide-area basis and the need for federal government agencies to have access to this broadband data are the most significant considerations facing the Commission in determining the spectrum needs of Public Safety.

First Response Coalition, April 28, 2005, WT Docket No. 05-157:

Furthermore, the current spectrum allocated for use by public safety departments will not be adequate for use with next generation technologies. While new technologies, such as wireless broadband networks and satellite global positioning systems (GPS), enable greater communications features, they require additional bandwidth and capacity. Examples of these technologies include handheld police video gear that can capture, send, and receive images from a crime scene and car-mounted navigation units that don't just pick up traffic reports, but receive street-by-street data and calculate alternative routes for drivers.¹ The patchwork of spectrum frequencies currently in use limits the capacity of first responders to utilize these new devices and services. In addition as new equipment incorporates additional features and capabilities, first responders will need access to more of the higher frequency bands, further dispersing public safety communications across the frequencies.

¹Clark, Drew. "Spectrum Wars," National Journal's Technology Daily, February 18, 2005. <http://nationaljournal.com/about/njweekly/stories/2005/0218njsp.htm>

Unfortunately, spectrum alone will not overcome the communications obstacles faced by first responders. The equipment and training needed to utilize the additional spectrum and achieve interoperability require significant financial resources. Local communities are already faced with budget shortfalls, and first responders are not receiving the funds they require.

Federal Partnership of Interoperable Communications, April 28, 2005, WT Docket No. 05-157

The FPIC submits that the unauctioned portion of the upper 700 MHz band is more valuable to the Nation as a Federal/State/Local public safety interoperability band (National IO band). Such an opportunity to enhance the Nation's ability to better serve public safety first responders will provide increased interoperability

among all users, added capacity for Federal, State, Local, and Tribal Critical Infrastructure integrated voice and high speed data/video systems, and improved safety for all first responders and the public that additional interoperability and capacity brings.

Los Angeles County Sheriff's Department, April 28, 2005, WT Docket No. 05-157

Current public safety spectrum allocations in both the 700 MHz and the 4.9 GHz band do not sufficiently meet the needs of large public safety entities like LASD. The additional spectrum in the 700 MHz band would be used to relieve congestion of existing systems and to address a pressing need for a new, county-wide, broadband mobile communications system. Emergency personnel spread across LA County need the ability to transmit and receive high speed data and real-time video images to and from mobile units during major emergency events. Specifically, this additional spectrum would be used to establish networks that would assist tactical command centers during these events.

Commonwealth of Pennsylvania, April 28, 2005, WT Docket No. 05-157

The Commission should halt the proposed auction of the remaining 36 MHz of spectrum available at 700 MHz and reallocate this valuable resource to the identified needs for first responders. The allocation of this resource could solve interoperability issues between the federal homeland security response agencies, state and local emergency response agencies, and critical infrastructure response entities.

City of New York, April 28, 2005, WT Docket No. 05-157

Moreover, from the standpoint of the New York City's somewhat unique radio propagation and geographical coverage needs, this 700 MHz band spectrum represents an especially desirable allocation – as this frequency transmits well in “canyon-like” urban environments, provides enhanced in-building penetration and carries radio signals over relatively long distances.

Andrew M. Seybold, President, Outlook4Mobility

I believe that an additional spectrum allocation in the 700-MHz band is absolutely necessary and now is the time to act on this. The 700-MHz spectrum is far better suited for metro and wide-area communications voice and data services than spectrum at 4940-4990.

Speights Telecom, Inc., April 27, 2005, WT Docket No. 05-157

STi submits that the unauctioned portion of the upper 700 MHz band is more valuable to the Nation as a federal/State/local public safety interoperability band than as a commercial radio service band or for any other use. In the interest of ensuring and enhancing interoperability among all providers of public safety services, the Congress, the Commission, and NTIA must realize the benefit to homeland security by reallocating these bands and creating a new ***National Interoperability Band*** (National IO Band). Such an opportunity to enhance our ability to better serve first responders will provide:

- Added capacity for federal, State, local and Critical Infrastructure (CI) integrated voice and high speed data/video;
- Increased Interoperability among federal, State, local and CI users;
- Improved Safety for first responders and the public that interoperability and additional capacity brings;
- Compatible equipment designed for Mission Critical use across the larger combined federal, State, local and CI base of users.

GOVEXEC.com, March 24, 2006

First responders aren't blind to the advantages of Internet protocol, especially when it is extended to the hand-held level, not just the backbone. Craig Jorgensen, project director for Project 25, a public-private standards-making body for land mobile radios, imagines a world in which first responders have access to Internet-transmitted video, data from field sensors, "the ability to send robotic terminals into a building and assess what's taking place . . . without having to send people in."

National Public Safety Telecommunications Council, February 6, 2006, WT Docket Nos. 05-157 and 96-86

NPSTC has noted previously that public safety's need for broadband capability and other requirements will not be resolved by the 700 MHz band no matter what its structure, it is not adequate to meet current or future demands.

United Telecom Council, May 11, 2005, WT Docket No. 05-157

Commercial technologies and a nationwide allocation are both concepts that could meet the increasing wireless needs of CI industries; however, control must remain in the hands of the emergency response community, which builds more robust and reliable infrastructure designed specifically for its own needs.

Joshua Marsh, "Secondary Markets in Non-Federal Public Safety Spectrum"

. . . command-and-control allocation with market determined use, the public safety agency is still granted spectrum from the government, however, they are allowed more flexibility in its use. Public safety agencies could determine which technology to use in that spectrum and could lease that spectrum to secondary users. This model would protect public safety's spectrum allocations while introducing market-based efficiency incentives . . .

Lynnette Luna, Mobile Radio Technology, April 1, 2006, "Project MESA reaches a Crossroad"

"We need spectrum outside of anything we have today, including 4.9 and 700 MHz," Jorgensen said. "And the reason is the amount of bandwidth it takes to push data through."

"These systems from the onset have to be cooperative, whether that's on a public/private basis or multiple jurisdictional basis," he said. "At some point in time, we'll have to force that issue."

The Spectrum Coalition for Public Safety, April 28, 2005, WT Docket No. 05-157

Our first responders need better tools than the terrorists already have, and this starts with sufficient spectrum available to support modern, scaleable dedicated and secure broadband wireless networks for public safety. With sufficient spectrum in place, the next step will be to architect a network-of-networks, each with autonomous roaming and that can be configured locally to meet the needs of each municipality.

ATTACHMENT C



Equity Research

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The 700 MHz Spectrum Band and Pursuit of Wireless Broadband

- This note is part of a series of Stifel Nicolaus investor calls and publications analyzing the principal spectrum bands coming on line that together will more than double the available spectrum for wireless broadband use, including fixed and mobile broadband Internet access and mobile TV services.
- In our view, the key new wireless bands are: (1) the 700 MHz band, which is the subject of this note; (2) the hybrid satellite-wireless L- and S-bands, which were the subject of our investor call last week; (3) the 3G ("AWS") spectrum, which is to be auctioned this summer; and (4) the 2.5 GHz band, which is being developed primarily by Clearwire and Sprint Nextel. We believe these new platforms and services will be a key driver in creating, shifting, and destroying value in the communications industry over the next several years.
- This note provides: (1) a brief overview of the recent legislation that established auction and clearing deadlines for 60 MHz in the 700 MHz spectrum band; (2) a recap of a recent investor conference call we held with two 700 MHz experts, Charles Townsend, president of Aloha Partners which is the largest new holder of 700 MHz spectrum, and Janice Obuchowski, who led the High Tech DTV Coalition, an alliance of tech and telecom companies that sought the release of the 700 MHz spectrum from broadcasters; and (3) estimates of comparable build-out costs developed by Aloha Partners.

Congress Passes Legislation for Clearing Spectrum In the 700 MHz Band and Setting FCC Auction Date

The 700 MHz band has long been viewed as the prime spectrum for broadband because of: (1) its propagation characteristics, including the ability to penetrate buildings; (2) its ability to cover larger areas, which reduces capital expenditures and makes a new-entrant strategy more feasible; and (3) its ability in the lower band to operate at significantly higher power limits, which may make it particularly well suited for mobile TV. However, it has not been available for wireless broadband use because TV broadcasters held the spectrum for analog TV transmission.

To facilitate a digital transition, Congress and the FCC in 1996 and 1997

provided each TV broadcaster a second 6-MHz frequency (squeezed into the existing broadcast spectrum band). The idea was that broadcasters would offer both analog and digital signals during a transition period, and that, at some point, when a sufficient number of consumers were receiving digital signals, the broadcasters would return their extra frequencies and collectively use less spectrum because of digital efficiencies. Most of the reclaimed spectrum was to be auctioned off for commercial wireless uses, and 24 MHz (broadcast channels 63, 64, 68, 69) was designated for bolstering public-safety communications, particularly through interoperable systems that allow police, fire, and rescue personnel to talk to each other, including across jurisdictions.

Since that time, there have been a number of FCC decisions as well as marketplace events that led lawmakers to believe that they should resolve certain issues in order to complete the transition, which could otherwise drag on for

years. But legislation did not gather momentum until fiscal and public-safety pressures ratcheted up in recent years due to budget deficits and first-responder communications problems on 9/11 and after Hurricane Katrina.

Those efforts culminated in enactment last month of legislation to complete the DTV transition. The legislation directs the FCC to begin an auction of the remaining 60 MHz of spectrum in the 700 MHz band in January 2008 and sets an early 2009 deadline for the broadcasters to return the spectrum.

We believe the DTV transition and resulting auction of 60 MHz of prime frequencies in the 700 MHz band will create new opportunities for various telecom, tech, and media industry players as well as new challenges for incumbent providers, particularly the Bells/telcos, cable companies, and broadcasters.

Aloha's Townsend and DTV Coalition's Obuchowski Discuss Value and Likely Uses of 700 MHz Spectrum

The day after Congress passed the DTV legislation in February, we hosted a call with Charles Townsend and Janice Obuchowski, two leading experts on 700 MHz to discuss the opportunities, challenges, and most likely uses and users of the spectrum. Mr. Townsend is the president of Aloha Partners, which has the largest existing holding of 700 MHz spectrum. Ms. Obuchowski is the president of Freedom Technologies and the leader of the High Tech DTV Coalition, an alliance of tech and telecom firms that urged Congress to speed up release of the 700 MHz spectrum for broadband wireless use.

Mr. Townsend and Ms. Obuchowski agreed that incumbents can and likely will participate in the 700 MHz bidding, but said they can expect strong competition from others. Both said the spectrum's excellent propagation characteristics facilitate network coverage, making it particularly attractive to new wireless and broadband entrants, which do not have existing tower arrangements and will be looking to minimize costs and speed deployment.

The problem with the band has never been the spectrum or build-outs, but political risk, said Ms. Obuchowski. Until recently, broadcasters had blocked band-clearing efforts, she said, but the politics had shifted for various reasons.

Mr. Townsend, whose company was a top winning bidder in a previous auction of portions of the 700 MHz band frequencies, said existing wireless carriers with spectrum in the 800 MHz cellular band — most notably Verizon Wireless (VZ-VOD), Cingular Wireless (T-BLS), and Sprint Nextel (S) — would likely target the reclaimed broadcast airwaves (from among channels 52-67) for wireless broadband, given their spectrum proximity. He expected others to use the spectrum for WiMax (one form of wireless broadband) services and

mobile one-way multichannel TV services.

Ms. Obuchowski agreed that incumbent wireless carriers were likely bidders, but she also expected entertainment companies, cable operators, and some tech players to participate. Coalition members are preparing to use the spectrum, once it is cleared, for various purposes, which the group describes as mobile broadband, mobile video and audio programming, increased rural broadband competition, WiMax, and 3G-type services.

The coalition includes a Who's Who of tech giants as well as certain telecom companies and other industry interests: Dell (DELL), Cisco (CSCO), IBM (IBM), Intel (INTC), Microsoft (MSFT), Texas Instruments (TXN) Alcatel (ALA), AT&T (T), QUALCOMM (QCOM), T-Mobile (part of DT), Aloha, and various business and telecom trade associations, including groups representing rural local exchange carriers (RLECs). Google (GOOG) is not part of the coalition, but Ms. Obuchowski noted speculation that the Internet heavyweight might be interested in the spectrum.

The transition has the potential for widespread industry fallout affecting the future relationships between broadcasters (e.g., CBS, NWS, DIS, GE, HTV, SBGI, GCI, MEG, KRI, TRB, UVN, BLC, PAX, GTN, YBTVA) and cable/satellite multichannel video providers (e.g., CMCSA, TWX, CHTR, CVC, MCCC, ICCI, DISH, DTV) and the product cycles of televisions and other electronic devices made by manufacturers (e.g., MC, MOT, CSCO, SNE).

Ultimately more important, in our view, will be the impact of freeing up spectrum for auction and a new generation of wireless broadband networks and Internet Protocol (IP) services, which could stimulate new activity that challenges the business models of the existing broadband providers — most notably, the Bells (T, BLS, Q, VZ) and large cable operators (CMCSA, TWX, CHTR, CVC) — and broadband upstarts (such as Sprint Nextel, Clearwire, and MSS parties).

Ms. Obuchowski said that the tech industry had obviously taken notice of the explosive growth in wireless voice service over the last decade and saw similar opportunities for wireless data and video. While there are various spectrum bands that are being eyed for wireless broadband applications, the 700-MHz band frequencies are particularly attractive, both she and Mr. Townsend said.

Not only does all of the 700 MHz spectrum have excellent propagation and penetration characteristics, but Mr. Townsend said the lower part of the band (channels 52, 53, 56, 57, 58 are still to be auctioned off) has "unique" power limits for mobile services, allowing for 50,000-watt transmissions, at least for

one-way services, while others are generally limited to 2,000 watts. Mr. Townsend's company is carrying out trials of mobile wireless broadband and TV services. He said Aloha had rights to about 60 percent of the spectrum on channels 54 and 59 (the "C" block), while QUALCOMM had all of the spectrum for channel 55 (the "D" block). See attached charts for the band plans for the upper and lower 700 MHz bands.

Mr. Townsend said other spectrum bands that are being developed or eyed for new wireless services — the so-called L-band, 3G/AWS band, S-Band, and the MMDS (2.5 GHz) band, which have progressively higher frequencies — all have their merits and uses. However, they also have various interference issues and other problems, and none can compare with the 700 MHz frequencies when it comes to tower-siting efficiency, with the latter able to cover up to 60 square miles in a single cell, he said. The 700 MHz band can thus be built out in the top 150 markets with only 6,000 towers, he said, while the other bands will require 2, 3, or 4 times as many, making deployment in those more costly — and time consuming. Whereas the 700 MHz's 6,000 towers could be put up in two to two-and-a-half years, the AWS's 17,500 towers will take four to five years, he said.

Both Mr. Townsend and Ms. Obuchowski doubted that cable and telco incumbents, or even Google, would be able to buy up all the spectrum. They suggested that such purchases would strain the budgets of even the biggest companies, given all the spectrum and expected industry bidders. While some

big players may try to aggressively buy up spectrum, they would have to "spend an awful lot," because there's going to be strong competition, said Ms. Obuchowski.

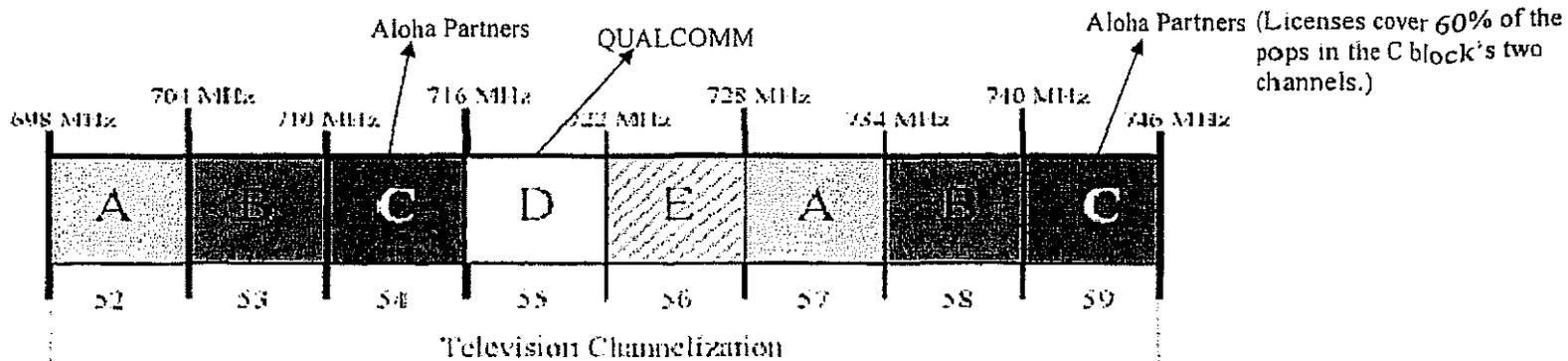
In addition, Mr. Townsend said the idea of a couple of companies cornering the market would be "politically unacceptable," though he could see large parties acquiring blocks of 18-20 MHz in markets. He said carriers would probably need that amount to do wireless broadband over the long run, though 12 MHz would probably be enough for the next five to seven years, given advances in digital compression and IP technology that have expanded network capacity. Ms. Obuchowski also noted that a looming FCC rulemaking was a "wild card." Some spectrum might be set aside for "designated entities" or they could receive bidding credits.

Mr. Townsend thought the 3G/AWS auction would be relatively cheap because of the large spectrum blocks and the expected limited number of bidders, which will likely include existing wireless carriers and a few others. Ms. Obuchowski noted that T-Mobile appeared to be particularly interested in that spectrum.

Both thought the 700 MHz band would be a different story, with much greater interest. Mr. Townsend said he thought the auction would elicit total bids of \$20-\$30 billion (\$1.1-\$1.65/MHz/POP). Ms. Obuchowski said that figure was consistent with her group's projections, though she noted the Congressional Budget Office's estimate of roughly \$11 billion.

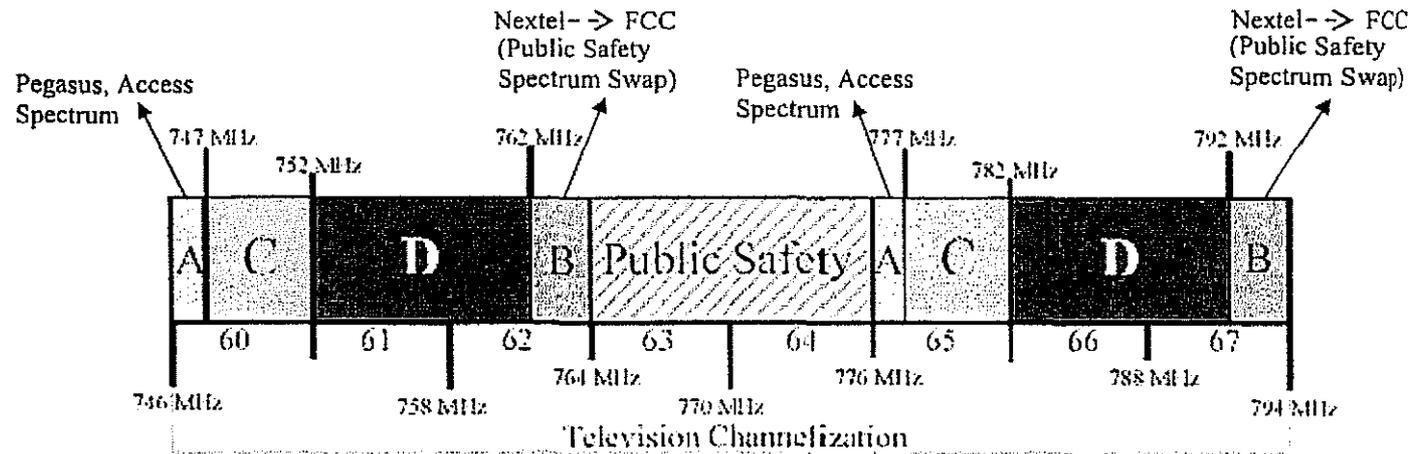
(Please see following pages for charts on the FCC's 700 MHz band plan and on Aloha Partners projections.)

Lower 700 MHz Bandplan



<u>Block</u>	<u>Frequencies (MHz)</u>	<u>Bandwidth</u>	<u>Pairing</u>	<u>Geographic Area Type</u>	<u>No. Of Licenses</u>
A	698-704, 728-734	12 MHz	2 x 6 MHz	700 MHz EAG	6
B	704-710, 734-740	12 MHz	2 x 6 MHz	700 MHz EAG	6
C	710-716, 740-746	12 MHz	2 x 6 MHz	MSA/RSA	734
D	716-722	6 MHz	unpaired	700 MHz EAG	6
E	722-728	6 MHz	unpaired	700 MHz EAG	6

Upper 700 MHz Bandplan



<u>Block</u>	<u>Frequencies (MHz)</u>	<u>Bandwidth</u>	<u>Pairing</u>	<u>Geographic Area Type</u>	<u>No. Of Licenses</u>
A (Guard Band)	746-747, 776-777	2 MHz	2 x 1 MHz	Major Economic Areas	52
B (Guard Band)	762-764, 792-794	4 MHz	2 x 2 MHz	Major Economic Areas	52
C	747-752, 777-782	10 MHz	2 x 5 MHz	700 MHz EAG	6
D	752-762, 782-792	20 MHz	2 x 10 MHz	700 MHz EAG	6

Mobile TV: 700 MHz vs. Other Frequencies

Comparative Analysis

<u>Spectrum</u>	<u>Permits Broadcast Use</u>	<u>Frequency</u>	<u># Transmitters</u>	<u>Top-150 Market Build-Out Cost</u>	<u>Years to Build Out</u>
700 MHz	Yes	700 MHz	900	\$450 million	1 year
L-Band	Yes	1700 MHz	15,000	\$2.2 Billion	3-4 years
PCS	No	1900 MHz	17,600	\$2.6 Billion	5-6 years
S-Band	Yes	2100 MHz	20,000	\$3.0 Billion	6-7 years

Source: Aloha Partners

700 MHz Networks:

- cost significantly less to build & operate
- require a lot less time to construct

<u>Spectrum</u>	<u>Frequency</u>	<u># Years To Build Out</u>	<u># Cells</u>	<u>Top 150 Market Build-Out (210MM pops)</u>	<u>Annual Operating Cost</u>
UHF	700 MHz	2-3 years	6,000	\$1-2 Billion	\$200 Million
MSS	1700 MHz	4-5 Years	15,000	\$4-5 Billion	\$450 Million
PCS	1900 MHz	5-6 years	17,600	\$5-6 Billion	\$525 Million
MMDS	2500 MHz	7-8 years	25,000	\$6-7 Billion	\$750 Million

Source: Aloha Partners

Important Disclosures and Certifications

We, Blair Levin, Rebecca Arbogast and David Kaut, certify that the views expressed in this research report accurately reflect our personal views about the subject securities or issuers; and we, Blair Levin, Rebecca Arbogast and David Kaut, certify that no part of our compensation was, is, or will be directly or indirectly related to the specific recommendation or views contained in this research report.

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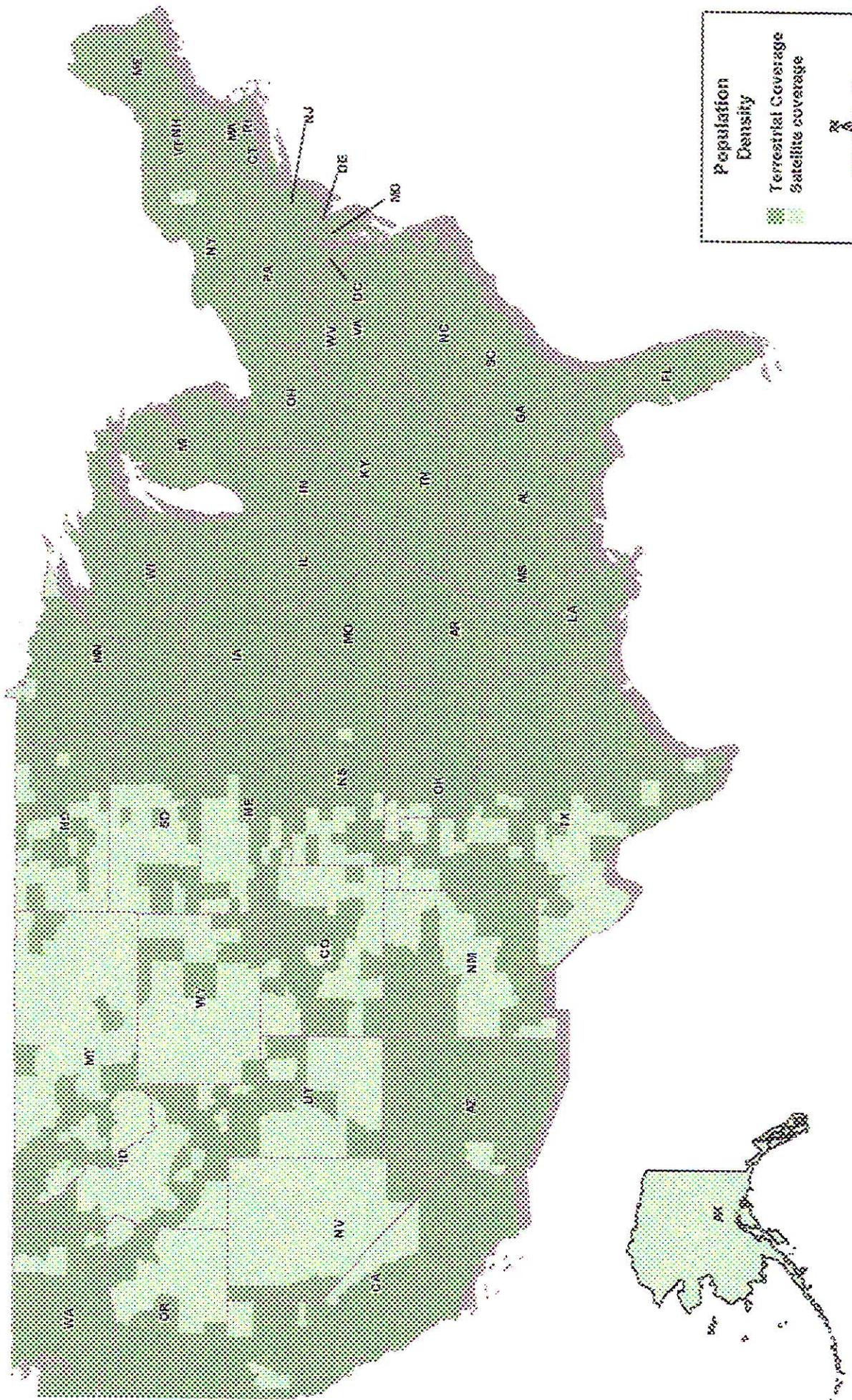
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ATTACHMENT D



Population Density
Terrestrial Coverage
Satellite coverage



ATTACHMENT E

