

Broadband Wireless Internet Access (BWIA) Informal Brief

Prepared by

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Introduction:

Expanding broadband or high-speed Internet access throughout our nation is a noble objective that offers many benefits and growth to our national and local economies. Broadband Internet increases social and job opportunities, expands our options for research and education, as well as benefits people of all economic and social classes.

The proliferation of WISP's (Wireless Internet Service Providers) is evidence of the growing use of fixed and mobile wireless as a viable method of providing broadband Internet access services. WISP's prove each and every day that BWIA does work as a competitive option for Internet access.

This document reviews such methods of expanding broadband Internet access and offers commentary about issues that may help expand BWIA (Broadband Wireless Internet Access) prosper and benefit our nation as a whole.

Background:

Allen Marsalis is the Founder and current President of ShreveNet, Inc., the largest regional ISP in Northwest Louisiana and Far East Texas.

ShreveNet is a full service ISP since 1996 offering dialup, ISDN, and T1 access in addition to web design and hosting services to this region. ShreveNet added DSL and high-speed wireless access in 1999 to round out its broadband service offerings.

Much of ShreveNet's market strategy is dependent on the use of license-exempt wireless access in order to reach broadband consumers in areas that are under-served and poorly served by other methods. By utilizing technologies such as fixed wireless access, ShreveNet increases its ability to service more of the geographic market than is possible with any single access technology. This results in a more comprehensive and diverse network with wide levels of service needed to bridge local markets, businesses, and communities.

ShreveNet introduced many new services to the marketplace such as digital 56K access, dial-up ISDN, dynamic webpage design, and more recently, high-speed wireless access. ShreveNet is locally owned and operated by a very knowledgeable staff of 22 local residents, many of which were educated in the region and are lifelong citizens of the area. These 22 jobs are rather unique for our area, which ranks at one of the most computer illiterate states in the nation.

A lifelong resident of Shreveport himself, Allen graduated from Captain Shreve High School in 1978 and was honored in "Who's Who of High School Students". He earned his bachelor's degree with honors in Computer Science from LSU-Shreveport in 1983 and married his current wife that same year. He currently has two children, and resides in South Shreveport with his family.

Allen operates the WISPFAQ website, and is a regular speaker for isp-planet seminars. Allen is also a contributor to the Wireless ISP Association (WISPA) and is a member of the Wireless Communications Association International (WCAI).

What is BWIA?

Broadband wireless Internet access is a term used to describe the service that WISP's (Wireless Internet Service Providers) provide. The individual networks built by WISP's in order to offer BWIA are often very creative and far ranging. No two WISP's operate in the exact way, which creates much innovation and competition within the marketplace.

Network topologies range from multi-sectored fixed-wireless networks reaching out 15 miles or more (outside the range of most other last mile technologies) to very small cells ranging only a thousand feet or less – and everything in between.

So how does BWIA work?

Point-to-MultiPoint (PtMP) fixed wireless networks are utilized for both residential and business class services. While roaming wireless networks are used for hotels, convention halls, coffee shops, libraries, resorts, business centers, airports, and other "hotspot" locations. Point-to-Point (PtP) links are often used as "backhaul" to aggregate and transfer customer traffic back to the WISP's network facility.

Most successful WISP's are small companies who rely on the license-exempt spectrum in the ISM and UNII bands as regulated by FCC part 15 rules. Utilizing current Point-to-Multi-Point (PtMP) gear commonly available today, WISP's build local wireless networks to serve their respective customer bases.

By building wireless networks to help service the increasing public demand, WISP's are playing a great role to help fulfill the objective of reaching smaller cities and rural communities with broadband Internet services.

Sample Cases:

Case #1: Benton Court House

The Benton Court House desired broadband Internet access for Judges and other personnel of the facility. No DSL or cable modem service is available to the 7-story building. ShreveNet made the 12-mile wireless link needed to facilitate their needs. Their monthly bill is only \$99.95 per month for a 1Mbps symmetrical connection to the Internet, less cost than most business class service provided by telecom or cable operators.

Case #2: Caddo Parish Communications Commission (911)

The CPCC (or “Caddo 911” as they are often called) desired an ultra-high speed Internet connection with performance in excess of “T1 speed”. Owning an existing network of towers and being very familiar with wireless communications, the commission wanted the convenience and reliability of a connection that was not dependent on a larger slower moving conglomerate Telco. Rather they chose the quick response and reliability of a local service provider utilizing as few points of failure as possible. ShreveNet provides Caddo 911 with a 20Mbps symmetrical link at 5.8GHz with a 3Mbps backup link at 2.4GHz to the Internet. The commission’s administrators are pleased with the results of using license-exempt spectrum combined with superior local service and support than is typically provided by larger national carriers and providers.

Case #3: Holmes Honda of Shreveport

Holmes Honda is the largest Honda dealer in the state of Louisiana. They do not have access to DSL or cable modem service even though they are in a prime real estate area. Holmes Honda is provided with BWIA service to their facility for internal use as well as to service a bank of kiosks for the general public to use while automobile shopping. This is another example of high-speed Internet keeping local businesses competitive while saving money for cost conscious consumers.

Case #4: Mr. Scott Bengé, resident of Shreveport.

Mr. Scott Bengé is a local resident who operates an Internet storefront and desired broadband service in his home back in 1999. Neither DSL or cable modem service were available to residents at the time. Mr. Bengé has been receiving high-speed service via a wireless connection for several years now for \$49/mo, even though both DSL and cable modem services are now finally available. Mr. Bengé prefers to keep the reliability of wireless, as well as the symmetrical bandwidth feature, and the unique services that only our local company provides (such as our SpamTrapper™ service).

All of these cases were made possible by BWIA services provided by ShreveNet, Inc. These cases are just a few of the many BWIA success stories witnessed by our staff.

Should the FCC help expand BWIA?

As today's economic news continues to be less bullish than we would like, so is news regarding DSL and cable modem service providers. Between bankruptcies, mergers, and sudden withdrawal from markets by companies greatly dependent on temperamental Wall Street investors, many users of broadband now cite stories of failures, disconnections, and bad overall experiences with broadband Internet.

There is little doubt that for every single MHz of unlicensed spectrum that is available for WISP's to use to provide their services, billions of dollars are generated and injected into our economy over and above the subscriber revenues generated by the private ISP's use of the band. For every dollar an ISP generates, many times that amount is generated for other businesses and individuals through the service. In the case of shopping for a home or new community to live in, an automobile to drive to work in, or a job to support these activities, 100's or 1000's of times the ISP's revenues are generated through the low cost service for all sorts of other national and local businesses.

A few frustrated users are even moving back to the cheaper alternative, 56k dialup service. Indeed this is a step backward and the FCC should help expand BWIA as a way to spur economic growth through the proliferation of affordable broadband Internet connections to homes, businesses, and local areas of special interest.

What can the FCC do to help expand BWIA?

The answer to this question is both simple and very complex. It is easy to state the most popular phrase that any WISP could possibly hear, "more unlicensed spectrum". And indeed having wider spectrum to operate within would be a great boost to our industry and the nation's economy as well. To those who are responsible for economic development of this nation, I would suggest that you allot new license-exempt bands immediately as a means to spur Internet use and economic development.

There is much more to the picture than just needing more unlicensed spectrum. I feel that the Congress, FCC, and local governments could do better to encourage local and regional ISP's to prosper and compete with well-rooted incumbent RBOC's and Cable operators in providing Internet services.

Many ISP's such as ShreveNet have taken a real beating over recent years by competing against conglomerates that have more capital derived from regulated, licensed, or monopoly services, as well as having well developed and funded lobby and legal council to help get a "foothold" on the Internet through favorable legislation.

A good example is that BellSouth continues to sell ShreveNet phone lines at \$65 or more in bulk at a special rate while selling "unlimited Internet access" for under \$15 retail price to individual users. ShreveNet loses many dialup users to BellSouth in the form of predatory pricing.

The same “foothold” existing between Telcos and dial-up ISP’s will happen to broadband service as long as local and regional WISP’s don’t register on the radar screens of those agencies and offices responsible for reviewing and legislating telecommunications and information services. The end result could be much of a repeat of the PSTN – stagnation in comparison to the rampant and competitive computer and networking industries.

Slow deployment, slow innovation, and ever-increasing phone or cable bills are the mark of a big monopoly or mega-conglomerate while extreme local competition lowers consumer prices while increasing the level of service. This is the spirit behind much of the Telecommunications Act of 1996. Local and regional ISP’s were busy creating the Internet market and educating Internet users before the Bells or cable operators even entered the local Internet access market. Small ISP’s can and should be allowed to have a place on the Internet but few are able to get a bank loan, locate investors, or justify their business plan in the current every changing quasi-regulated environment where the only competition is between technologies rather than within them.

Even having a wireless service offering, WISP’s face strong issues such as poor Line of Sight (LOS) due to tall trees, which prohibits many WISPs’ from completing with residential cable modem service in many areas. “Wireless” is not a utopian access methodology that will solve all broadband deployment problems. However it is another tool that thousands of ISP’s can use to rapidly grow to reach out and deliver quality broadband service to many communities.

FCC Part 15 Rule Changes:

As the FCC Part 15 Rules currently stand, there is much confusion in the WISP industry over interpretation and abidance of the rules and regulations. The FCC should modify such rules as to permit the WISP to perform a professional installation while abiding by current maximum EIRP limits.

As the rules stand today, radio manufacturers are leveraging the antenna market by simply making up their own part number and placing a sticker on someone else’s antenna and doubling the price tag while requiring by law that users purchase “their” antenna. The antenna market should not be manipulated or controlled in such a way by radio manufacturers. Clearly this is a repeat of the situation created by FCC rules governing certification of complete PC systems in the mid 80’s.

Often times a WISP will have to design a link with more power or gain than is needed to do the job simply to stay in compliance as a “certified system” with limited choices for power and antenna options. The very rules that were designed to protect and allow sharing the unlicensed spectrum often times require less RF engineering or design decisions to be made. However the downside to this is the fact that often networks will benefit from proper RF engineering and design. WISP’s should be allowed to continue their ingenuity and creativity in network design and operation by having as many options as possible for antenna gain as well as transmit power (within set maximum EIRP rules).

The objective is to always stay within Maximum EIRP limits while allowing WISP's to design networks that make sense instead of having to use too much or too little power to get the subscriber on-line. The "one size fits all" concept definitely works for WLAN applications to a much greater level than WISP applications.

Conclusion:

For BWIA to really impact this country, the FCC, Congress, and local municipalities must help support local and regional ISP's and their good efforts. New spectrum should be allotted for BWIA usage, and rules should be rewritten with the WISP in mind.

WISP's and independent ISP's in general face great challenges while competing against or around huge incumbents who have owned their "wired networks" for many years while being guaranteed an operational status through steady governed rate hikes.

Local ISP's need their "place under the sun" so to speak, and quite frankly, BWIA is the only chance we have. The only outstanding question is will WISP's succeed over and above their existing achievements of bringing 1000's of new broadband users on-line? Will WISP's continue to strive to deliver broadband where many prior broadband deployment efforts have failed? Or will we be "kept in our place", growth slowed as much as possible, until such time that the market can be transplanted or grafted over onto the much bigger well entrenched incumbent telecom and cable plants? Is the future of broadband going to be a government or consumer decision? I believe it is both and I hope that telecommunications de-regulation indeed means more consumer choice. Meanwhile, the number of local ISP's has dramatically fallen over recent years, however the growth in numbers of WISP's in particular is encouraging.

I urge anyone reading this brief to support local and regional ISP's and WISP's who have demonstrated a unique ability to survive market changes on Wall Street while bringing jobs and technical skills to local communities. All should share in the Internet, and that includes more than just Internet usage, but rather Internet jobs, Internet skills, and even profits derived off providing Internet access.