



**PCIA m-Community– ExpertXChange
Chat Transcripts - 04/05/02**
<http://mcommunity.pcia.com>

“Co-location: What Every Business Should Know”
<http://www.lbagroup.com>

Moderator

Hello everyone, and welcome to the ExpertXChange! My name is Sean Sullivan, and I will be your Moderator for this event. Let me remind you to REFRESH your computer screens every few minutes so that you can get the latest chat developments as they happen.

Moderator

Let me introduce myself and say hello to all our returning chat participants...as a Government & Business Relations team member, I'm in charge of making sure our SOMA (Site Owners and Managers Alliance) line up of programming and events meet your unique business needs.

Moderator

Let me start out by giving you an agenda of what we want to cover:

- The role of co-location in filling coverage gaps
 - Co-location business models to improve return on investment & revenues
 - The coverage issue & FCC compliance issues
 - Co-location benefits & drawbacks
 - Challenges of RF design and site selection
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From: Moderator

Tell us about LBA group and give us some background on the tower marketplace today...

LBA

As wireless networks have matured, the desire of wireless service providers to establish additional cell site base stations has been driven by several factors.

One is the need to provide coverage to a geographic region where the service provider has not previously served. Also, to fill in "dead spots" or areas where existing signals are weak. Additionally, to allow for the reuse of channels or spectrum bandwidth to support a larger number of customers and to meet the higher speed requirements of emerging technologies.

The drive to meet these needs has led to a proliferation of new cell towers, indeed, a "tower industry" has arisen to meet the demand for suitable base station sites. In the early days of wireless cellular development most carriers owned their towers and allowing other users, especially competitors, on their towers was not considered. However, as the number of towers grew, the word collocation became a common term in wireless lexicon. The acceptance of collocation resulted because of many reasons. One is that the wireless carriers saw an opportunity to reduce their infrastructure investment and free up cash for other uses. Another is the tower owners need to secure multiple tenants on each tower to meet return on investment goals. An increasing resistance to the construction of new towers from local groups and jurisdictions has also played a significant role in many areas.

Seeking out existing structures first when looking for new base station sites is becoming the dominant strategy. While this helps in solving the problems mentioned above, it creates new challenges. Often, the network RF design must be altered many times during the site selection process. Sometimes, the existing structures are located away from the search circle center and/or will not support the base station antennas at the height that was used for planning the system. This can result in less than the optimal coverage that is desired. The ability of existing structures to support the weight and wind loading requirements of the lines and antennas must be determined. This means that a structural analysis is required, adding to the cost of the site. When sharing a site with other emitters, interference is a consideration.

While it might seem that regulatory compliance is less complicated on a collocation site, the opposite is often the case. For example, the FCC and OSHA rules regarding human exposure to non-ionizing RF energy require that all emitters, even those belonging to others, on a site be considered. FCC rules that mandate the protection of AM broadcast station patterns are another area where lack of compliance by one tenant on a site can lead to action against all collocated licensees as well as the tower owner. More local jurisdictions are requiring submission of documents to attest to the fact that the site is in compliance with all rules and regulations. Many require third party review of the compliance activities.

The drive to seek out existing structures first has produced some "outside the box" solutions that would have never been considered in early network builds. Water tanks, smoke stacks, church steeples and bell towers have become acceptable for most carriers. Many are collocating on power line towers and AM,

FM and TV broadcast towers. While each of these presents its unique set of challenging considerations, they are all viable candidates for wireless collocation. With proper planning and design, all are being used successfully to support wireless base stations.

Collocating on an existing structure is a good solution for many sites; however, there are some situations where a new tower is needed. The challenge in those cases is to convince the jurisdictional authorities that no existing structure will meet the requirements and that only a new tower will work. An increasing number of zoning and planning groups are insisting that a third party assessment of the need for a new tower be submitted.

Lawrence Behr Associates, Inc. (LBA) has served the wireless, broadcast and tower industries for 39 years. The services and hardware that LBA delivers are focused on the areas of collocation, compatibility and regulatory compliance. AM CoLoSiteSM utilizes our proprietary services and hardware, the CoLoPole^(tm) and CoLoCoil^(tm), to overcome problems associated with traditional methods of collocating on hot AM broadcast towers. LBA's intermodulation studies and interference resolution services help ensure compatibility of all services at shared sites. Our AM pattern protection/detuning services and hardware, as well as RF/NEPA electromagnetic environment analysis document compliance with FCC rules. Foundation Wizard^(tm) non-destructive foundation testing often supplies the "missing piece" for complete structural analysis, defining what is underground and assessing the conditions of those foundations.

From: wxz_3

You indicated in the opening remarks that licensees should be concerned with collocated tenants at a shared site for regulatory compliance. Can you give an example of why that is important?

LBA

Yes, I can think of two examples and I'm sure there are others. Perhaps some participants can add from their own experiences or knowledge. Of course, you should always consult with your legal advisors and regulatory compliance personnel. The first example that comes to mind regards the FCC RF/NEPA rules for limiting human exposure to RF. The assessment requirements, detailed in FCC Bulletin OET-65, state that all emitters on a site must be considered. These requirements have established what is commonly called the "5% rule". This refers to the requirement that if an area of a site has RF levels that exceed the maximum permissible exposure (MPE) level, then each licensee who contributes more than 5% of MPE to that area is responsible for mitigation actions. Therefore, each licensee must know the specifications for all other emitters at the shared site (and sometimes from nearby sites) in order to ensure their own compliance.

Another example is compliance with the FCC rules that mandate protection of nearby AM broadcast station patterns. These requirements are addressed in 47 CFR 22.371 and discussed in several other FCC documents. The rules apply to tower "construction or modification", so that modification of the tower by adding lines and antennas must be considered. There is also a requirement for "continued maintenance" of any required detuning hardware. Therefore, action by new tenants on the tower must be accommodated to ensure that the detuning system remains effective.

From: Penelope

When do you not recommend co-locating?

LBA

In general, there can be disadvantages. Collocation is frequently useful, but not a universal principle. Loss of control, access, interference and structural are all possible downside concerns.

From: Doug Janette

Certain co-locations are exempt from historic Section 106 review, based on the Nationwide Programmatic Agreement dated March 16, 2001. What about the other nonhistoric portions of NEPA review? Are there any efforts to exempt co-locations from the other NEPA items?

LBA

I do not know of any specific efforts to exempt other NEPA requirements. The RF exposure and other areas of NEPA are specifically applicable and should be studied completely.

From: Donna

When locating on a collocation site that is shared by many wireless carriers, an intermodulation (IM) study is often required before permission to locate there is given. Sometimes, the IM study will show "hits" to other existing users receive channels when we know that we are collocated with that same user on other sites without any interference problems. Why is that?

LBA

While there may be other reasons for this, two situations come to mind that can produce this result. First, some basic intermodulation (IM) studies calculate only the mathematical possibilities for IM products to form without any consideration of factors that can limit the harmful effects of those products. These limiting factors include antenna patterns, physical separation of antennas, antenna pointing angles and equipment filtering. The second possibility results from the fact that all frequencies in use at the site under study must be considered. In this case, the new site being studied may have different additional frequencies in use from those in use at the site where no problem exists. These different transmit

frequencies may combine with your frequencies and produce IM products that will interfere with the receive channels that are not affected at the other site.

From: Tom

Given the somewhat slower rate in subscriber growth and the current state of the economy, do you think the majority of tower companies will invest in new towers or will most try and find alternative solutions to coverage and capacity (such as co-location)?

LBA

Certainly, the tower companies will attempt to lease up existing inventory as much as possible. Carriers will look for the lowest cost approach, which in most cases calls for collocation. It is inevitable that a significant number of towers will need to be built or existing structures that have been under-utilized in the past, such as AM radio towers, will have to be used.

From: Leslie

What do you see as the three greatest savings/efficiencies of co-location vs. new site acquisition? Greatest challenge to completing a co-location project?

LBA

In the savings category, time to market certainly tops the list. In many cases, avoidance of capital cost. Typically, multi-user sites may be more controlled and secure. As for the challenges, coordination with all parties is a major concern.

From: bgb

What is the trend for collocation fees being paid to the landowner for multiple carriers on the same tower?

LBA

It seems the trend that as landowners become more educated about tower leases they are looking more closely at compelling payment for additional users.

Moderator

Wow, what incredible participation from the audience! Keep those questions coming.

From: Tom T.

When there is a project where the carrier and tower company have worked with the community and the structure owner/provider (i.e. church congregation for use of church steeple) and everyone agrees on and benefits from the project (carrier gets more coverage/capacity, site manager gets business, the church gets a new, improved steeple and some compensation) - why do outside interests (zoning/activists, etc.) have a say in the project if the private structure owner has agreed and is amenable - especially when it is stealth?

LBA

Because "all politics is local". The increase in situations such as these, points up the absolute need for a highly skilled zoning/permitting team to manage the local process. This includes such non-technical essentials such as public relations and legal.

From: Danny

How can a small tower company improve its bargaining power with a large carrier, is it merely a function of real estate?

LBA

As with any small business, the ability to offer faster and more flexible response, tailored services and local attention.

From: Gordon B.

Have you worked on projects requiring FAA approval? If so, how are you finding their turnaround time since Sept. 11? Anything we can do to expedite the process?

LBA

Our observation is that the FAA is completely inundated. The process can be expedited by using the right expert. There has been a trend to file virtually every site with FAA. Simple analysis may exclude filing in the absence of company policy to file everything.

From: Stewart

From your experience, what are the most common reasons antenna projects are denied at the local zoning level?

LBA

Imprudently chosen locations coupled with poor planning and presentation - going on the cheap! Our best advice is to set up expert help and backup.

Moderator

For more information on this and other hot topics---Sign up now to attend the 5th Annual PCIA Tower and Site Management Forum taking place in Hollywood, Florida, May 15 -17. For more information on this conference click on the box to your right or visit www.somaonline.org.

From: SteveP.

Why is regulatory compliance less complicated in co-location situations?

LBA

In a well-developed site, the framework exists for dealing with regulatory challenges. However, the reality is often not that and can be more complicated. There are a lot of legacy issues on collocation sites.

From: Tom T.

Follow-up - I too believe that PR is a GOOD thing, especially on the local level. But sometimes it seems as if it is a catch-22 - where if you build it (and talk about it out loud!), they (activists) will come. Are there some best management practices that we can incorporate to try and make for smoother sailing through the zoning/building permit process?

LBA

This is a good follow-up question. Every location is different. This points up the need to develop a focused strategy for each locality and jurisdiction. Again, the right zoning/permitting team is critical.

From: KKing

You mentioned that it's possible to locate wireless antennas on hot AM radio towers. Can you really do that? We've always heard that wireless network designers and site acquisition personnel should stay away from AM towers.

LBA

We've heard that too, but we have guided many wireless service providers to successfully establish base station sites with antennas mounted directly on active AM towers. LBA has participated in several dozen such projects. One reason that AM towers have been avoided is the FCC requirements for pattern protection mentioned previously. A result of keeping base station sites away from AM stations is that many of the "dead spots" where signals are weak are around AM towers. There are an estimated 10,000 AM towers nationwide. Many of these are located in urban areas where additional base station sites are needed. Innovative RF designers and site acquisition folks are using this "secret" resource. With proper planning and design, wireless base stations can exist and be very compatible with AM stations, often in a very cost-effective manner when compared to other alternatives.

From: vango23

Your thoughts on in-building coverage? Has your company worked on any in-building projects?

LBA

Yes, we have experience in this area. We have been intensively studying such requirements with our clients and we expect to see rapid development beginning within the next year.

From: Leslie

There are so many different aspects to wireless infrastructure projects - especially on the regional/local level. Are you aware of any guide or set of information that exists to help small tower owners keep up with the nuances of localities?

LBA

That is the challenge. We recommend joining and participating in SOMA. Every locality is so different in its requirements. Again, using expert advice and constant monitoring of local affairs relating to regulatory and siting matters is always prudent.

From: Moderator

Thanks for your insights today. We can always count on LBA for their industry expertise. Please tell the audience how they can get in touch with you with any further questions.

LBA

Thank you, Sean and all the support team at PCIA. And thanks to everyone who participated with questions. Please call me, Mike Britner, at 800-522-4464 to discuss any aspect of this or e-mail me at mbritner@lbagroup.com. We invite you to visit LBA's website at WWW.LBAGROUP.COM/ASSOCIATES where you will find extensive White Papers and Technical Notes on the subjects we have discussed.

Also, we will be attending the SOMA meeting at Hollywood, Florida next month. We encourage you to visit with our team there and view our display. Lawrence Behr, CEO of LBA Group, will be a panelist on Wednesday morning at the pre-conference program.

Moderator

Please remember that transcripts will be available, just log-on to the Infobank, at <http://mcommunity.pcia.com/infobank.htm>. **DON'T FORGET: You Don't Want to Miss the 5th Annual PCIA Tower and Site Management Forum May 15 - 17, 2002 at The Westin Diplomat Resort and Spa, Hollywood, FL. Register before April 24th to receive the advanced Rate!**

For more information and to register go to:

http://www.pcia.com/industryconnect/somaforum2002_info.htm.

If you have any questions regarding the PCIA Tower and Site Management Forum or SOMA please feel free to contact me at sullivas@pcia.com or 703-535-7408.