Wireless Communications: Still Alive and Kicking

by Robert E. Smith

Despite the cloudy economy, we can still make predictions about wireless infrastructure siting and deployment—and the implications might surprise you.

MY TOP THREE PREDICTIONS

1. More cell sites and towers are coming.

- Congress will pass a Broadband Stimulus Bill this year that will include grant monies for industry to field wireless projects.
- Recent Federal Communications Commission (FCC) auctions have reallocated frequencies and have positioned service providers so they can deploy new services.
- The emergence of WiMax by Clearwire will generate equipment deployment and new sites across the United States.
- The general status of infrastructure (cell sites) versus service subscribers has been trending in the wrong direction—infrastructure has been lagging. More sites are needed to serve the growing number of subscribers.
- Services are becoming more bandwidth intensive, and minutes of use are still rising. Site saturation and capacity issues are driving the need for additional sites.

Congress and the FCC's recent actions will create available grant monies for wireless projects and a need for additional equipment in the field. Part of the focus will be to shuffle service providers across existing markets to accommodate recent mergers, but the lion's share of this work will be to provide wireless connectivity to rural areas.

Funding levels currently riding within House and Senate versions of the bill are in the $1 billion range for wireless-only projects. The two bills also contain between $5 and $8 billion in additional funds for landline, hybrid, and other types of projects.

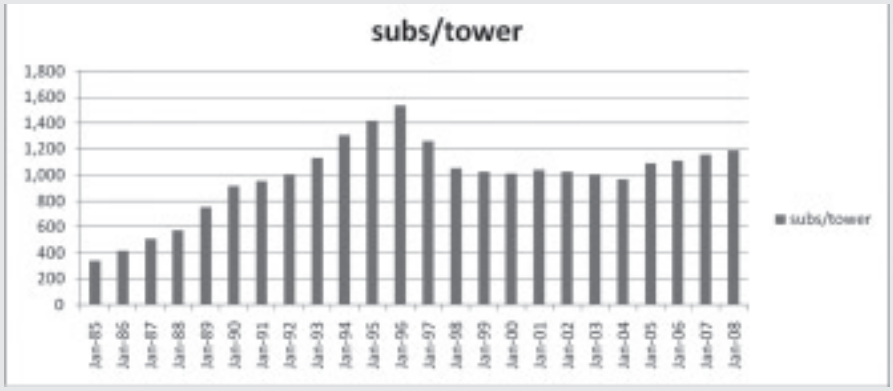
The business side of the wireless infrastructure industry points toward more infrastructure in the field and the creation of new sites to support services. New service offerings such as Clearwire's WiMax, bandwidth-intensive user services (streaming video, for example), and changes to providers' markets and frequencies have a nationwide impact and will generate demand for new infrastructure sites.

Further, the recent creation of new infrastructure sites has not kept up with the growth in subscribers. As the nation approaches 100 percent market penetration and then exceeds it (as Germany and Japan have), the gap in infrastructure sites will affect service delivery. New sites must be created to support the services offered.

Data from CTIA (the association for the country's wireless telecommunications industry) show that about 262 million customers are using some 220,000 cell sites across the United States. The history of the number of subscribers per cell site is shown in Figure 1.

Since January of 2006 there have been increases in the numbers of subscribers per cell site. Although this is not a specific growth indicator and it is not tied to any specific market, it does reflect a national trend indicating that infrastructure sites are having to, on average, support more users at a time when bandwidth usage and minutes of use are rapidly increasing. This kind of loading was last seen during 1993–1997, when the industry was attempting to keep pace with the rapid demand for services across the nation and towers and cell sites couldn't be built fast enough.

Figure 1. Numbers of Cell Phone Subscribers per Cell Tower Site, 1985–2008.



Source: Anvil Partners, LLC, www.anvilpartners.us. Data on the number of cell sites and on the number of subscribers is available online at www.ctia.org.

In the current economy, with its decreases in consumer spending and confidence, consumers are nonetheless electing to retain their wireless devices and cell service. More consumers are eliminating their landlines and are becoming wireless-only households. The most recent market research indicates that 18 percent of U.S. households are wireless only. The year 2008 also marked a watershed moment when more consumers preferred the Internet, not a newspaper, as their source of news.

One might surmise that the current economic winter will have average consumers tightening their belts, eliminating landline phones, and possibly cancelling newspaper subscriptions. As the wireless communications industry steadily marches toward mobile Internet and streaming video to the cell phone, those consumers who have cut the use of landline phones and newspapers may be spending some of those savings on enhanced mobile services. This further increases capacity loads and bandwidth demands on the existing infrastructure.

Bundling (cable plus telephone plus television—think Verizon, now the nation's largest carrier) may also act as a catalyzing agent to foster more of these shifts. As bandwidth-hungry applications are launched by the carriers to a growing market that already represents close to 90 percent of the U.S. population, demands on the infrastructure and networks will continue to spiral.

Even though consolidation in the industry seems to be in full swing, consolidation will not eliminate the need for equipment in the field or for the enhancement of existing equipment to support new services and growing capacity.

2. In terms of land use regulations, the courts have tended to ensure that localities retain local land use control. Recent judicial decisions will keep pressure building for additional infrastructure deployment as permitting processes can slow deployment.

- *Sprint v. County of San Diego* (9th Circuit) finally went through an en banc appeal only to find unanimously in favor of the county. Local governments should feel emboldened about exercising zoning controls (within reason) over this land use within their jurisdictions.
- The *Sprint* case will affect other circuits beyond the 9th—it has already been cited in the 1st, 2nd,

and 10th circuits. Communities across a large part of the nation may discover a newfound interest in controlling this land use.
- Many localities are just now discovering that they can engage and manage this land use, often securing additional benefits for the community.

The telecommunications industry has long regarded local land use regulation as an impediment to the timely deployment of wireless infrastructure. On several occasions, CTIA has petitioned the FCC rule-making process to federally preempt local permitting if the local permitting process takes too long. Referred to as "shot clock" language, most municipal leagues and local governments have steadfastly rejected such attempts by providing comment and input to FCC rule-making processes.

Recently, CTIA requested that such changes be made to the Broadband Stimulus Bill. Inclusion of shot clock language in the bill would be disastrous for many struggling communities. I think many localities would agree that 45 to 75 days just isn't enough time to appropriately process a discretionary zoning permit for this use.

Some providers have begun to ignore local permitting requirements, perhaps counting on the situation of resource-strapped local staff not being able to keep up with enforcement. Thankfully, in California, the Public Utilities Commission is stepping in to get to the bottom of things. The examples from the field are thought provoking and, given the stress many local administrations now face, sobering in light of the reduced resources and departmental limitations.

While the 9th Circuit decision in *Sprint v. County of San Diego* did fall to the locality's favor, local governments—times being what they are—may not be in a position to benefit from this decision unless they seek some help. Staff and resources might not be available internally to mine the decision and incorporate appropriate changes to local codes.

Many localities are using the current lull in development to examine internal plans, codes, and policies, but this issue area may be overlooked if staff and leadership are insulated or not aware of recent wireless infrastructure industry developments and opportunities.

Those localities that are including this issue in their planning evaluations and enhancements will find that modest efforts to engage and manage land use can result in significant benefits to the community. It is almost certain, however, that movement in this direction will be received by the industry as an increase in obstructions to timely deployment.

As with any other development activity, communities will be tasked with balancing the benefits of development against the costs and impacts, and they might well decide that finding the right balance requires additional expertise or assistance.

3. Localities are suffering under the economic strain and will be looking for relief. Many communities are:

- Struggling to maintain staff resources, departmental funding, and missions.
- Using the slow development cycle to focus on internal processes and revise codes and plans.
- Searching for new streams of revenues.
- Creating user fee–based services.
- Creating new economic development efforts.
- Focusing on e-commerce and technology.

In light of current economics, local governments are leaving no stone unturned in looking for relief and the hope for certainty in the future. They may find some rays of hope by looking to recession-proof industries and, in particular, the wireless infrastructure industry.

Localities that choose to engage their wireless infrastructure and manage this land use can find community benefits in the effort—from enhanced communications for post-disaster response and mitigation, to better site design and minimized visual impacts associated with sited facilities. Active land use planning can also lead to opportunities to market public lands and structures for siting of appropriate infrastructure (and receipt of lease revenues) as well as enhanced response to noncompliance and the conflict resolution efforts that are usually required to resolve such issues.

Opportunities to increase safety and provide resources to foster improved health, education, and business environments also grow out of the local government's efforts to engage this infrastructure and manage the land use. Such efforts also lead to stronger economic development environments as well as better defined and more effective e-commerce efforts.

The year 2009 will forever be remembered as a year of change, and it will come complete with good as well as bad changes, depending on the choices we make. It looks like more wireless infrastructure is on its way, and it appears that now might be a good time for localities to consider how to manage the deployment of that infrastructure.

For a variety of reasons, including the *Sprint v. County of San Diego* decision, most local governments will find that an examination of their codes and policies—if they were created before 2008—will uncover hidden opportunities to protect local character and aesthetics while encouraging many public benefits. **PM**

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