Pipeline
Knowledge Is Power

www.pipelinepub.com Volume 5, Issue 8

Emerging Wireless Carriers: Opportunities for OSS & BSS Vendors

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Introduction

As industry analysts and consultants here at NPRG, we're like radar operators. A significant amount of our time is spent scanning the broad horizons of the communications industry—alert to changes, threats or opportunities that might affect technology vendors, service providers or a myriad of other vested industry participants. One of the areas actively being tracked at our Chicago offices is the emerging wireless arena, because, in spite of the extraordinary promise pent up within the space, a cloud of confusion continues to envelop the sector. This article will look to clarify the shape and disposition of the emerging wireless market, clearing up misconceptions as well as providing some brief insight into a market ripe with opportunity.

Emerging Wireless: What Is It?

While the term encompasses really all things wireless, with the exception of cellular service, this emerging arena is anything but well understood. The lack of a common understanding derives primarily from two factors. First is the embryonic nature of the space. Any technology sector, in its formative stage, is a blur of activity that makes it at best challenging for casual observers. In a haze of constantly whirring change, it becomes difficult to identify the moving parts that might otherwise constitute a coherent whole. The challenge then is to pinpoint, with any level of precision, where opportunities might unfold.

The second factor causing misapprehension of emerging wireless is the more mundane and endemic disease afflicting the body politic of telecommunications. Like any other self-respecting telecom sector, emerging wireless has given rise to its own alphabet soup of acronyms, a mass of terms being used arbitrarily and interchangeably, as well as a dizzying array of abbreviations. While this linguistic knot will untie itself as the sector matures, it allows the market to languish, awaiting coherence.

While we won't be able to address all the sub-sectors that constitute emerging wireless, we will provide detailed data and analysis on the two most prominent iterations—Fixed Wireless and Broadband Wireless. Our hope is that you emerge from having read this article with a clear sense of what distinguishes one from the other, the relative size of each market, and a full appreciation of the as yet untapped opportunity that awaits technology vendors—especially OSS providers.

Broadband Wireless

NPRG defines "broadband wireless" as internet access services (1 Mbps and above, symmetric or asymmetric) provided wirelessly in the licensed and unlicensed spectrum below 6 GHz. Broadband wireless typically involves point-to-multipoint distribution with one base station providing data access to many, often hundreds, of unique subscribers.

For years, a large number of wireless internet service providers, or WISPs, provided basic internet connectivity to underserved communities, particularly in rural areas. The advent of more robust and higher-speed point-to-multipoint wireless technologies, most notably pre-standard versions of WiMAX (the industry marketing name for an evolving IEEE standard), have enabled WISPs and new entrants to deliver DSL-like speeds.

While broadband wireless has yet to break through to the mass market or find a killer app, the sector's show horse, Clearwire, appears to be getting off the ground finally. The company cut deals with Sprint in 2008 that brought Clearwire additional financial backing, as well as access to significant network assets. The company also launched its mobile WiMAX deployment in Baltimore, with more metropolitan rollouts planned for 2009.(Clearwire currently offers pre-WiMAX service in about 50 markets.) The rest of the sector has matured as well, as multiple acquisitions have begun the process of rolling up some of the smaller providers, all towards building up a significant number of regional presences.

A point of interest for technology vendors will be the sheer number of broadband wireless providers in operation. NPRG estimates that there are some 2,200 of these carriers serving markets of various sizes and drawing in a significant pool of potential customers who have moved away from wireline service. (Source: *Broadband Wireless Sector Analysis Report (2008)*, New Paradigm Resourced Group, Inc., Chicago, IL.) While few of these providers currently have deep pockets, most of them certainly have significant back office challenges.

Table 1: Broadband Wireless Sector Snapshot (2008)	
Total # of Service Providers	~2,200
Total Sector Revenues	$150 million
Customer Base	Residential moving into Business

Source: New Paradigm Resources Group, Inc.

Fixed Wireless

Fixed wireless telecommunications involves wireless transmission of service to and from fixed locations, at frequencies above 10 GHz. By sticking to more reliable licensed spectrum in the higher-bandwidth microwave or millimeter wave frequencies above 10 GHz, fixed wireless remains distinct from other wireless technologies operating in unlicensed spectrum below 6 GHz.

Fixed wireless is capable of providing carrier-grade bandwidth and reliability, and does so at price points appropriate for that level of service. Microwave, of course, has been deployed for years in cellular backhaul and long-distance relay applications. On the retail side, the technology has by and large been deployed towards achieving physical network diversity, and as a redundant backup for large enterprises, especially in verticals where bandwidth is mission-critical, such as finance. This group of end-users require levels of service comparable to those of carriers and are willing to pay.

Fixed wireless is now getting a second look from enterprise, thanks to stiffer internal and external requirements for data backup and disaster recovery. A wide range of documents—email, contracts, CAD files, blueprints, sales quotes, contact lists, health records, databases, recorded phone conversations, to name a few—are now archived electronically. All this is done in order to meet standards set for litigation preparedness and regulatory compliance, making the storage and retrieval of these resources a primary consideration in IT planning. Following several high-profile disasters that destroyed companies' on-site storage, various industry organizations advise, and some legislation (*e.g.*, Sarbanes-Oxley Act in 2002) mandates, that companies maintain certain levels of disaster planning, in particular public corporations.

Table 2: Fixed Wireless Sector Snapshot (2008)	
Total # of Service Providers	~40
Total Sector Revenues	$110 million
Customer Base	Carriers; Enterprises

Source: New Paradigm Resources Group, Inc.

Table 3: Comparing Fixed Wireless and Broadband Wireless Technologies

	Fixed Wireless	Broadband Wireless
Spectrum	Above 10 GHz	Below 6 GHz
Licensed?	Yes	No
Network	Point-to-Point	Point-to-Multi-point
Bandwidth	Up to 1 Gbps	Up to 10 Mbps (typical)
Range	Up to 5 miles	Up to 30 miles (with reduced throughput)

Source: New Paradigm Resources Group, Inc.

The Opportunities

These emerging wireless sectors present an opening for several groups of technology vendors. However, current circumstances present OSS/BSS providers with excellent opportunities. We've watched first-hand as other telecom sectors go through similar growth cycles. Most have cursed the day they decided to develop back office systems in-house. Disparate spreadsheets and home-grown databases managing various parts of carriers' operations can quickly became albatrosses round the necks of these firms, hindering growth, creating customer care challenges and generally wreaking havoc with their brands as well as their reputations for providing competent service.

The evolution of emerging wireless providers presents three opportunities for Operational and Business Support System developers:

1. **Diversifying product sets.** Early stage emerging wireless providers typically offer a single service, internet access, at one speed with the same basic features to all its customers. For a rural WISP selling shared Wi-Fi service to perhaps a hundred residential customers, either as a community service or hobby, that is all that's necessary. Likewise, fixed wireless providers delivered cookie-cutter services to early adopters, using the same gear for all deployments.

   As more ambitious emerging wireless providers increase their market penetration and target more varied segments, especially different-sized businesses and industry verticals, they must satisfy more diverse customer needs. Broadband wireless providers are introducing more flavors of data service, adding voice and even video so as to operate more as full-fledged telecommunications competitors, rather than just bare-bones access providers.

   Fixed wireless companies now partner with multiple equipment vendors to provision scalable bandwidth and specialized services, with equipment pairings customized to customers' needs. Moreover, many broadband and fixed wireless companies must sort out blended product portfolios and hardware platforms resulting from acquisitions, a necessary hurdle for every growing technology sector.

   Existing systems often prove inadequate at handling this increased complexity. Spreadsheets and standard bookkeeping packages may have handled customer tracking well in the past, but come apart at the seams when pushed too far. Robust OSS platforms can handle multiservice portfolios with ease, making room for vendors to enter the space in a big way.

2. **Establishing scalable sales and provisioning platforms.** The sector is growing, but emerging wireless providers have been through the wringer enough times and have experienced more than a round or two of growing pains. At least in fixed wireless, many key players were in some form or other a party to the precipitous collapse of their sector when the telecoms bubble burst. The survivors, who either have good memories or sufficient foresight, will recognize that increased sales activity cannot be thought of as an extraordinary event: it must be planned for, and the successful firms will be those ready to take advantage of the situation when it happens.

   High growth may be in these companies' future, and they want to be prepared. OSS/BSS platforms that scale easily as providers grow would be the very definition of a competitive advantage.

3. **Bolstering customer care.** Many wireless startups are so pleased to get their technology working outside beta tests, to have the engineering perfected and then a growing number of paying customers, that customer service gets lost in the shuffle. So much time and effort is put into landing new customers and provisioning service that proper follow-up is neglected, service calls are not tracked properly, and opportunities to sell add-on services are missed.

   Carrier-class OSS and billing solutions enable emerging wireless providers to retain existing customers (minimize churn) and differentiate themselves from the impersonal and disinterested customer service for which larger carriers are notorious. Both broadband and fixed wireless providers often begin as local startups that are a recognized part of their communities, and even regional roll-ups have a bond with their communities that national players do not. It is imperative that these entrants continue to provide the high-touch customer care that first wins them notice: it is one of their greatest assets.

4. **Implementing industry-recognized platforms.** Having achieved substantial scale, some emerging wireless providers receive late stage funding in order to put in place an exit strategy. These funds are meant to improve operating efficiency and ultimately maximize the valuation of their business, especially in the eyes of investors or potential suitors. In these situations, providers will be open to incorporating new OSS/BSS platforms that may bring greater legitimacy to their back office systems.

   A high-growth wireless company that schedules provisioning and tracks customer pricing on spreadsheets may be an enticing value proposition, but prompt questions and second thoughts from investors during due diligence. Providers that demonstrate they are employing industry best practices, alongside systems similar to those used by the big boys, will have a much more convincing case to make.

Parting Thoughts

We have borne witness to the increasing importance of wireless service in buoying the economy. Confidence is growing in the reliability of both broadband and fixed wireless solutions. Unforeseen and unpredictable events will occur in the near term that can thrust these service sets over a critical threshold and into the realm of general acceptance. When this occurs, service providers can ill afford any missteps in customer care, service provisioning, network monitoring, or the like. Investing in scalable, extensible, and flexible back office support systems will be essential as emerging wireless providers prepare for future growth.