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Enabling Broadband Connectivity in Emerging Markets: Xiocom Wireless

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Broadband access has surfaced as an important priority for telecommunications regulatory authorities in emerging markets as a global digital divide in broadband connectivity threatens to widen the economic gap with the developed world. This paper examines the impact wireless technologies can have in helping to close this gap and in so doing enable emerging countries to more effectively participate and compete in the global economy. The paper also looks at the role Xiocom Wireless can play, with its unique Xiosphere emgagement framework, in facilitating and accelerating the adoption of broadband wireless technologies in emerging markets.

The Global Digital Divide in Broadband Connectivity

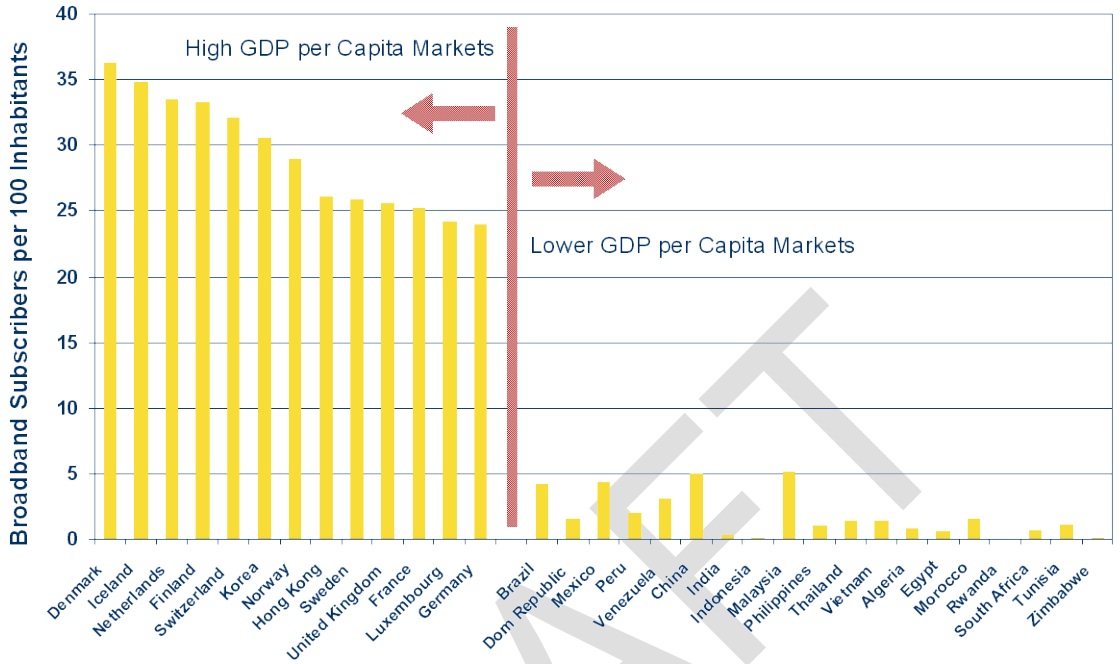
Recognition by public policy makers, telecom regulators and the private sector in emerging markets of the importance of broadband connectivity in enabling effective participation in the global economy is rising. Connectivity is considered an essential tool for improving local competitiveness and raising the productivity of the workforce. Consequently, policies to encourage the development of broadband infrastructure and services is increasingly being prioritized. Its importance is further heightened by the economic crisis enveloping the world today. Broadband connectivity is seen by many as an important element in what will eventually help drive the global economy out of the uncertain and turbulent times ahead.

As for concerns surrounding the lack of broadband connectivity in emerging markets, these stem from the significant divide that exists between high and lower GDP countries. While high GDP nations see broadband penetration between 15% to as high as 36% - with household penetration nearing as much as 100% in certain countries - the majority of low income countries have penetration levels of 5% or below. In fact, key emerging markets such as China and India see broadband penetration of only 5% and 0.3% respectively. Existing infrastructure remains severely limited despite what many see as rapidly rising demand and a growing market opportunity. Consequently, access to broadband service remains very low for many countries in the emerging world (see **Figure 1**).

Document number

FIGURE 1

Broadband Penetration Trends, 2007



Source: ITU, CIA Factbook, IDC, 2008

Wireless Technology: An Answer to the Digital Divide

Globally, the primary technology delivering broadband service today is DSL. IDC estimates that the technology accounted for approximately 66% of global broadband subscribers at the end of 2007. With the exception of the United States, which has relied equally upon DSL and CATV infrastructure, markets with the highest broadband penetration have relied heavily upon DSL. Readily available copper infrastructure in high GDP countries, with traditional telephone line penetration peaking at approximately 57%, meant that the developed world could provide DSL based broadband service with minimal investments to the network. Other wire-based technologies include CATV and optical infrastructure. Wireless technologies accounted for less than 2% of the global total.

In emerging markets however, traditional telephone line penetration levels are much lower than high GDP countries. Delivering broadband service via minimal investments to an existing copper infrastructure is a significantly smaller opportunity. CATV and optical networks are similarly underdeveloped. The case for utilizing wireless technology in delivering broadband service in emerging markets is therefore fundamentally premised on the lack of an existing copper network. In interviews with service providers, it was noted that without an existing network, it was a "no-brainer" to opt for wireless technologies such as WiFi or WiMAX. Greenfield implementation of a copper network was estimated to cost between three to five times more in terms of capex per subscriber than a wireless system. Opex costs, on the other hand, were deemed to be equal to if not be slightly lower.

Additional challenges noted by service providers relating to the deployment and maintenance of a wired network included:

- Propensity for theft: It is a well known fact that high copper commodity prices have made communication wires attractive to thieves. Incidences of theft and vandalism have historically been and remain high in emerging markets. Securing copper wiring, preventing theft and replacing stolen telephone lines continue to be a high cost item for service providers.

- Unpredictable costs: Service providers in emerging markets face lower site acquisition costs and less regulation than developed country peers. Low labor costs further add to the ability to accelerate network deployment. In the case of wired infrastructure however, additional elements add to the unpredictable nature of costs. In one example, a service provider delivering broadband access to urban areas in India noted that the cost for obtaining rights of way to install copper lines for a one square kilometer service area could escalate to as much as US$ 150,000. Its site acquisition costs for a base station, on the other hand, was far less and not even one-tenth of that amount.

- Time to market and business risk: A wireless network can be up and running within a matter of weeks. WiFi mesh technology can be provisioned in a matter of days. Deployment of wired infrastructure, while requiring similar levels of planning, logistics and resource management as a wireless network, demand greater human resources and is subject to higher business risk. According to service providers interviewed, the best case deployment of copper infrastructure is measured in terms of months. Another issue is business risk. One strategy employed to accelerate wired infrastructure rollout is deployment to real estate developments prior to their completion. The problem, common in emerging markets and especially during the Asian currency crisis of the late 1990's, is that many developments were never completed. WiMAX base stations and WiFi nodes can easily be re-located, while wired infrastructure essentially becomes a sunk cost once installed.

Xiocom Wireless: Enabling Broadband in Emerging Markets

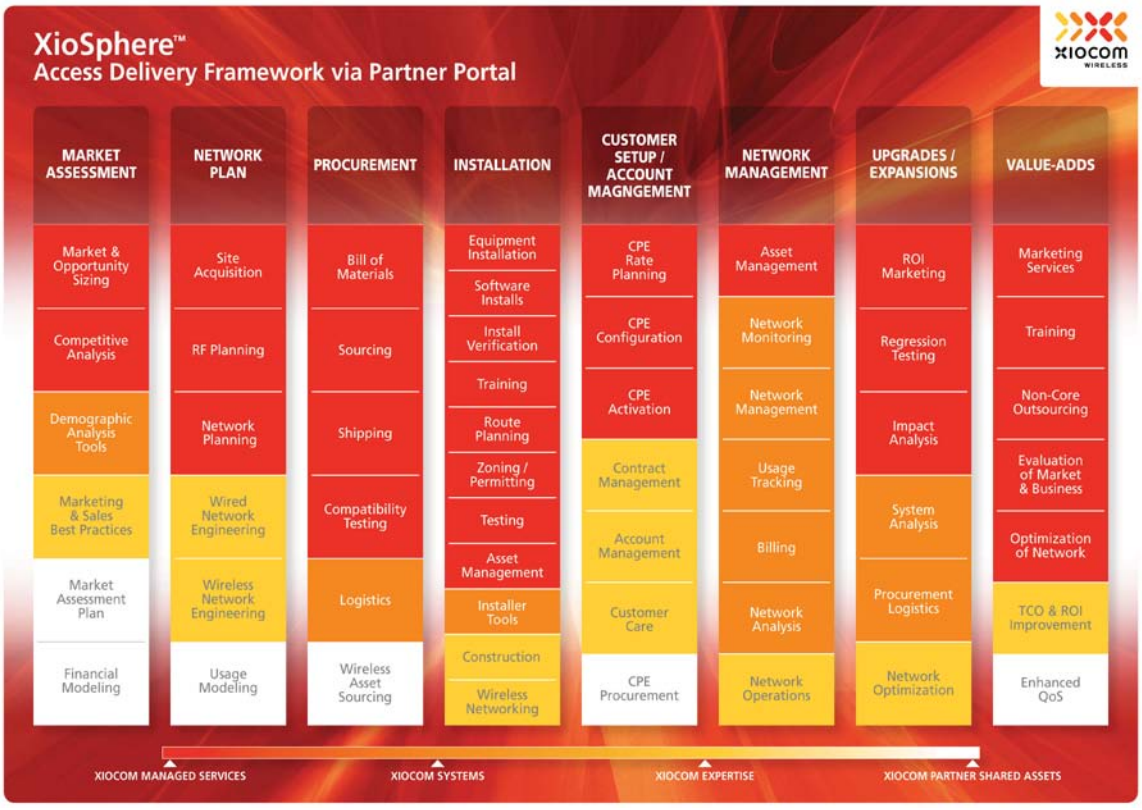
Xiocom Wireless was originally founded in 2002 as CityNet, a broadband service provider in Panama City, Florida. It has since morphed to become the integrated broadband wireless technology and services provider it is today. The company aims to bring broadband connectivity and services to emerging markets through its technology, networking know how, business modelling capabilities, financial resources, and global relationships. Organizationally, Xiocom is structured along operational, business development and product development responsibilities. Operations is responsible for developing best of breed network deployment and management processes that can be replicated across markets. The business development team is tasked with building the partner base and accelerating Xiocom's expansion globally. The product development group is tasked with go to market service feature and functionality development, as well as engineering and technology R&D. Xiocom is headed by CEO Jeff Spence, a long time Internet and technology executive, and is headquartered in Atlanta, GA.

Primary investors in the company include Columbus VC and Remgro. Remgro offers a network of commercial relationships across the globe that should help open doors and opportunities for Xiocom Wireless. Remgro is a South Africa based investment holding company with a long history of investments in high value brands across the globe. Its roots date back to the 1940s, though Remgro itself was officially formed in 2000 after a restructuring of the Rembrandt Group. It has a broad array of investments in tobacco products, banking and financial services, printing and packaging, motor components, glass products, medical services, mining, petroleum products, food, wine and spirits and various other trade mark products. Remgro holds a 44.4% interest in Xiocom.

Xiocom's value proposition is encapsulated within a framework the company describes as its complete wireless access solution, the "Xiosphere." The Xiosphere encompasses competencies in technology, network integration and management, and business modelling and execution. It comprises the full ecosystem of capabilities necessary for service providers to deliver applications and services in an effective, efficient and ultimately profitable manner. These capabilities are enabled by Xiocom's own internal resources as well as a global partner network it is building. The Xiosphere also builds upon the notion of the creation of a "toolkit" of processes, business models and applications and services. The toolkit houses best of breed information that is, via the partner portal, shared across its operations and partners in order to ensure that operational efficiency, creativity and profitability are maximized (see **Figure 2**).

Figure 2

The Xiocom Xiosphere



Source: Xiocom

In IDC's view, the Xiosphere represents a comprehensive picture of a broadband service provider's ecosystem and capability requirements. Each element in the Xiosphere speaks to an important facet of service operations that affects total costs of ownership, revenue generation and competitiveness, and ultimately profitability. Offered directly by Xiocom or through its partners, the access delivery framework is therefore likely to have broad appeal to a wide variety of service providers across the emerging world. It is especially relevant to typically leaner Tier 2 and Tier 3 wireless broadband operators seeking to challenge incumbents. Limited wireless technology and overall business

competency in the telecommunications and Internet sectors among many of these service providers means that Xiocom can offer significant value – accelerating their partner's business plans and through Xiocom's skill set, create a more level playing field vis-a-vis a well resourced and experienced incumbent operator.

The appeal of the Xiosphere is, however, not exclusive to start ups and second tier carriers. In IDC's experience, Tier 1 operators in emerging markets seeking to go beyond their traditional service base, such as mobile operators looking to provide broadband connectivity, are also likely to find significant value in Xiocom. Certainly, given their embedded infrastructure, existing relationships and base of operations, Tier 1 service providers are likely to be more selective in the Xiosphere elements where they see specific value. These companies already have strong market awareness and often concrete ideas for new applications and services. They are instead likely to be driven by time to market, capital and operational costs, and new technology concerns. Consequently, requirements are defined more so by the need for additional, nimble resources that can speed the time to market of the technology required to deliver the new applications and services they are seeking to deploy. Specifically, IDC views elements such as network planning and upgrades, installation support, and then eventually network optimization as the primary areas of appeal (see **Figure 3**).

Figure 3

The Xiocom Xiosphere: Appeal to Tier 1 Service Providers

(to be added)

Source: Xiocom, IDC, 2008

Not surprisingly, there was widespread agreement of the saliency of the Xiosphere in conversations with a sampling of service providers across a variety of tiers and geographies. Top of mind among service providers is "total cost of ownership" or TCO. Intensifying competitive pressures has resulted in tremendous operator sensitivity to both capital expenditure and operational cost metrics. Companies interviewed spanned both developed and emerging countries, but the sensitivity to TCO was equally strong regardless of the commercial environment. Operators in emerging markets naturally have to build their business cases on much lower revenue assumptions. Their thresholds for capex and opex span a scale that must support a business case wherein monthly average revenue per unit (ARPU) ranges from US$ 10 to US$ 40 a month (operators IDC spoke with from the Americas reported that the business case could support a US$ 40 ARPU – for most of the rest of the emerging word however, IDC views that the technologies must generally deliver on business cases of US$ 20 and below).

The market assessment and value-adds offered by Xiocom creates additional points of differentiation – though this point of differentiation appears to be narrowing. This is notion is derived from the fact that the typical partner most embedded in a service provider's operations, and for that matter holds the greatest mindshare, is its technology vendor. In the emerging world, this is comprised of "big box" networking suppliers such as Ericsson, Nokia Siemens, Alcatel Lucent, Huawei and Cisco. These vendors already provide tremendous support and advice relating to network planning, installation, operations and upgrades. Market planning and value adds were deemed a limited, albeit growing, area of support offered by these big box vendors. IDC views this assertion to be especially true for big box vendor's Tier 2 and 3 customer base. While technology vendors such as Ericsson and Alcatel Lucent are actively building their business and strategy consulting capabilities today, these resources are normally deployed to their high value, Tier 1 customers. A technology supplier such as Huawei, at least for the time being, has little to no capability in the market assessment and value-add areas.

Market assessment and value adds are therefore an area of differentiation for Xiocom, especially when engaging with potential Tier 2 and Tier 3 partners.

Most distinct and perhaps offering the greatest value is what Xiocom describes as the "Xiocom Investment: True Risk Sharing" value proposition. Essentially, where appropriate, this calls for a financial investment by Xiocom in the partnership. This catapults Xiocom beyond system integrator and technology vendor status to that of being the service provider itself. To be sure, it showcases the belief Xiocom has in the business it is pursuing. Historically, there have been very few examples of big box vendors engaging this far into the value chain. Motorola, in various iterations of its wireless technologies, has in the past invested in service providers in an effort to seed and jump start markets (this was for example the case in the trunked mobile radio market in select emerging countries). Companies such as Intel have also invested in operating companies, particularly in WiMAX related service providers in an effort to help spur the growth of the technology. These examples are few and far between. Also, amidst the economic turmoil, vendor financing is resurfacing as an issue and is increasingly being request by service providers.

Challenges

The fundamental challenges facing Xiocom are scale, market prioritization and brand recognition. The company is well resourced financially, but with its current base of less then 100 employees it will have to manage growth and expansion very carefully. Finding capable employees and partners across the globe will be difficult. Similarly, it will be important to prioritize the emerging markets it targets and therefore deploy resources effectively. The economic crisis enveloping the world today only amplifies this notion. Finally, conversations with services providers validated the fact that their top of mind partners are indeed the big box equipment vendors. This influences, not only the partners they choose, but also their view towards certain wireless technologies. While Ericsson and Nokia Siemens are known to every incumbent and start up service provider in the world, the Xiocom brand is still in the process of being built. Xiocom's investors as well as early success will be critical aspects for enabling this. Additionally, because of its emerging market focus, Xiocom should consider outreach to emerging country public policymakers and institutions such as the World Bank. This will help to expand its mindshare within this important constituency. Recognition and concern over the growing broadband digital divide and the potential impact this may have on economic growth is rapidly expanding within this group. In just the last month alone, a view has emerged in the public and private sector alike that, from a technological standpoint, ubiquitous broadband connectivity will be one of the key factors that will help the world rise from the global economic crisis.

Conclusion

Wireless systems offer the most economic and quickest to deploy technology for bridging the broadband connectivity divide between the developed and emerging world. With the vast majority of emerging countries seeing broadband access penetration levels of less than 1%, there remains a tremendous opportunity for both equipment vendors and service providers alike. Xiocom Wireless, through its unique and comprehensive Xiosphere engagement framework, stands to benefit from this opportunity. Its mix of technology, business, implementation and operational capabilities, the firm can play an important role in enabling the accelerated growth of broadband connectivity in the emerging world.