

---

**Wimax:  
Transforming the Economic Landscape...  
and Forging a New Breed of Millionaires!**

**Trinity Investment Research  
Winter 2007**

---

---

# Wimax:

## Transforming the Economic Landscape... and Forging a New Breed of Millionaires!

The reason you're reading this report is because you are a member of *Untapped Wealth* and you have the desire to make a lot of money. My co-editor, Eric and I have been talking non-stop about a "new breed" of technology that will change the world we live in. The technology is called WiMax and a little known company that goes by the name of **Clearwire Technology (CLWR)** is the first company to take the technology public. I will cover Clearwire thoroughly, but first, you need to know about WiMax, the technology.

The technology is best described by the WiMax Forum (formed in June 2001 to promote conformance and interoperability of the IEEE 802.16 standard, officially known as WirelessMAN) as "a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL."

In layman's terms, WiMAX would operate similar to WiFi, but at much higher rates of speed, over further distances, and for a greater number of users. WiMAX could "potentially erase the suburban and rural blackout areas that currently have no broadband Internet access because phone and cable companies have not yet run the necessary wires to those remote locations."

A WiMAX system consists of two parts:

- A WiMAX tower, which is similar in concept to a cell-phone tower — A single WiMAX tower can provide coverage to a very large area — as big as 3,000 square miles.
- A WiMAX receiver — The receiver and antenna could be a small box or PCMCIA card, or they could be built into a laptop the way WiFi access is today.

A WiMAX tower station can connect directly to the Internet using a high-bandwidth wired connection. It can also connect to another WiMAX tower using a line-of-sight, microwave link. This connection to a second tower (often referred to as a backhaul), along with the ability of a single tower to cover up to 3,000 square miles, is what allows WiMAX to provide coverage to remote rural areas, where hi speed broadband has never been able to penetrate.

Through line-of-sight antennas, the WiMAX transmitting station will send data to WiMAX-enabled computers or routers set up within the transmitter's 30-mile radius (2,800 square miles coverage). This is what allows WiMAX to achieve its maximum range.

The biggest difference isn't speed...it's distance! WiMAX outdistances WiFi by miles, it leaves it in the dust. WiFi's range is about 100 feet. WiMAX will cover a radius of **30 miles** with wireless access. The increased range is due to the frequencies used and the power of the transmitter.

### WiMAX Could Boost Government Security

In an emergency, communication is a predominant factor for government officials at any level. In order to try to resolve the cause of specific problems, find out what happened, assess the damage and potential injuries, coordinate rescue and or cleanup operations. A refinery explosion or terrorist attack could sever the cables that we, as a society, heavily rely on, from connecting leaders and officials to vital information networks they need to potentially save lives.

WiMAX could be used to set primary and

---

back up communications systems that would be nearly impossible to destroy with a single attack because they would be protected and isolated. A handful of WiMAX transmitters would be set up in range of strategically constructed command centers, but as far from each other as possible.

Each transmitter would be in a bunker hardened against bombs and other attacks. No single attack could destroy the entire WiMax infrastructure; essentially, the officials in the command centers would remain in communication all the time, no matter what the circumstances may be, unlike with fixed line communication, which is used now, and can be damaged with a single pinpoint attack.

## Hooking Up WiMax In Your City

A town wide or city wide blanketed coverage of wireless Internet access sounds fantastic, right? However, when we get down to it, companies aren't just going to go around setting up WiMAX base stations out of the sheer kindness of their hearts. Who's going to foot the bill for WiMAX?

In short, this totally depends how it will be utilized. There are two ways WiMAX can be implemented:

- As a zone for wireless connections that single users go to when they want to connect to the Internet on a laptop (the non-line-of-sight "super WiFi" implementation); or
- As a line-of-sight hub used to connect hundreds of customers to a steady, always on, high-speed wireless Internet connection.

Under the "super WiFi" plan, cities would foot the bill to construct WiMAX base stations that will be set up in key areas for business and commerce alike, and then allow people to use them for free.

This is already being done in the form of WiFi, but instead of putting in a bunch of WiFi hot spots that cover a few hundred square yards, a city could pay for one WiMAX base station and cover an entire financial district. This could entice different businesses to move to those locations, thus increasing the commerce in these areas.

Then again, we may see some companies set up WiMAX transmitters and then make people pay for access as they would for any high-speed connection, whether it is DSL or cable.

Regarding WiFi strategies, it is very similar, but a much wider area would be covered. Instead of hopping from one hot spot to another, WiMAX-enabled users could have Internet access anywhere within 30 miles of the WiMAX base station. Let's see WiFi do that! These companies might offer unlimited access for a monthly fee or "pay as you go" plans that charge on a per-minute or per-hour basis.

This high-speed wireless idea has the potential to be far more revolutionary and highly explosive in all parts of the country, including rural areas, which haven't been able to see high-speed net access without spending an arm and a leg to hook up satellite broadband.

If you have high-speed Internet access now, it probably goes something like this:

- The cable (or phone) company (whether you use DSL or Cable internet) has a line that runs into your home;
- This line goes to a cable modem, and another line runs from the modem to your computer;
- If you have a home network, it goes to a router and then on to the other computers on the network; and finally,
- You pay the cable company a monthly fee, which reflects the expense of running cable lines to every single home in

*(Continued on next page)*

---

the neighborhood, you are helping foot the bill in the big picture.

The likely WiMAX Scenario Coming to a Town like Yours would be something like this:

- An Internet service provider (ISP) like America Online, Earthlink or Net Zero, sets up a WiMAX base station 10 miles from your home;
- You would buy a WiMAX-enabled computer, thanks to Clearwire and their contract with Intel (they will soon be standard), or upgrade your old computer to add WiMAX capability (most likely an Intel chip); and
- You would then get a special encryption code that would give you access to the base station, sort of a log on. The base station would send data from the Internet to your computer, for which you would pay the provider a monthly fee.

The cost for this service could be much lower than current high-speed Internet-subscription fees because the provider never had to run cables. (I have already heard reports of WiMax only costing \$20-\$28 per month)

If you have a home network like most Americans, things wouldn't be much different than status quo.

Your WiMax enabled router would receive information from the base station, from there the router would then send the data to the different computers on your network. You could possibly combine WiFi with WiMAX by having the wireless router send the information to the different stations as well.

WiMAX is coming and poses a threat to all ISPs in existence. "The WiMAX protocol is designed to accommodate several different

methods of data transmission, one of which is Voice Over Internet Protocol (VoIP). VoIP allows people to make local, long-distance and even international calls through a broadband Internet connection, bypassing phone companies entirely. If WiMAX-compatible computers become very common, the use of VoIP could increase dramatically. Almost anyone with a laptop could make VoIP calls."

**Intel executives have called WiMax one of the biggest potential disruptive technologies in the world. With WiMax, Intel aims to duplicate its successful Wi-Fi strategy.**

We're not the only ones who are raving about this technology. Chip builder, Intel has the same big picture idea as we do; so much so they have invested \$600 million in Clearwire! Check out this excerpt from an article printed in *businessweek.com*

*"Intel's goal is to help build a nationwide service that equips notebook PCs for fast Web access and Internet-based calling over vast swaths of the U.S."*

*INTENSE RACE. The surprise announcement of Intel's second investment in Kirkland (Wash.)-based Clearwire in recent years is a big shot in the arm for WiMax, a technology that blankets large areas with wireless broadband.*

*It's likely to accelerate efforts by big-name wireless carriers to offer competing technology. "The U.S. is now going to get a high-speed wireless broadband network sooner than it would have," says Intel Executive Vice-President Sean Maloney, who spoke to BusinessWeek in an interview."*

---

## Moving On To The IPO at Hand, ClearWire

From the company's recent filing:

*We build and operate next generation wireless broadband networks that enable fast, simple, portable, reliable and affordable Internet communications. Our wireless broadband networks cover entire communities and deliver a high-speed Internet connection that not only creates a new communications path into the home or office, but also provides a broadband connection anytime and anywhere within our coverage area. We intend to evolve our network and the services we provide to facilitate a greater range of mobile communications services than we currently offer.*

*Our current service is both competitive with and complementary to existing wireline and wireless networks. Our subscribers may access the same rich content, applications and services as subscribers of wireline broadband services, while also experiencing much of the freedom and flexibility that large scale wireless networks enable. We believe our network combines some of the best features of cellular, cable modem, digital subscriber line, or DSL, and wireless fidelity, or WiFi, networks into a single service offering that legacy networks do not currently match. As our capabilities evolve, we also expect to develop and offer additional innovative and differentiated products and services. Our recently introduced voice over Internet protocol, or VoIP, telephony service is one example of a service that complements our current wireless broadband offering. Our current wireless broadband Internet access service is:*

■ **Fast.**

*We offer connectivity speeds that typically exceed cellular networks and are competitive with wireline broadband offerings.*

■ **Simple.**

*Our services are easy to acquire and use, with no software or professional installation typically required.*

■ **Portable.**

*Unlike wired networks, our customers can access our network from anywhere within our coverage area.*

■ **Reliable.**

*We use licensed radio frequencies, or spectrum, which enables us to minimize interference common on certain wireless networks that use unlicensed or shared radio frequencies.*

■ **Affordable.**

*We offer a value proposition that is competitive while recognizing the unique benefits of our service offerings.*

*We were founded by telecommunications pioneer Craig O. McCaw, our Chairman, in October 2003, and we launched our first market in August 2004. By December 31, 2006, we offered our services to more than 9.6 million people in the United States and Europe.*

*(Continued on next page)*

*Our network in the United States is deployed in 34 markets across more than 350 municipalities and covers an estimated 8.6 million people. Our markets range from major metropolitan areas to small, rural communities, and all sizes in between. As of December 31, 2006, we also offered our wireless broadband services in Brussels, Belgium and Dublin, Ireland, where our network covers approximately 1.0 million people.*

*Subscribers have rapidly adopted our services as we have grown from approximately 1,000 wireless broadband Internet subscribers as of September 30, 2004 to approximately 206,200 as of December 31, 2006. We estimate that the average monthly increase in our subscriber penetration rate, calculated by dividing the number of new subscribers by the number of households covered by our network, ranged between 0.5% and 0.7% for each of the twelve months ended December 31, 2006. We believe that substantially all of the households we cover have access to cable modem and /or DSL Internet services, leading us to conclude that our rapid subscriber growth rates reflect the mass market appeal and robust customer demand for our differentiated services, even in the presence of highly competitive wireline broadband alternatives.*

*Our advanced wireless broadband network currently relies on network infrastructure equipment that is based on proprietary non-line-of-sight, or NLOS, Orthogonal Frequency Division Multiplexing, or OFDM, technologies. We have committed to deploy networks based on the IEEE mobile Worldwide Interoperability of Microwave Access 802.16e-2005, or mobile WiMAX, standard once mobile WiMAX equipment is commercially available and meets our requirements. As with our current network infrastructure equipment, we expect mobile WiMAX to support fixed, portable and mobile service offerings using a single network architecture. In addition, as mobile WiMAX is a standards-based technology, we expect manufacturers to eventually offer a number of handheld communications and consumer electronic devices that will be enabled to communicate using our mobile WiMAX network, including notebook computers, ultramobile personal computers, or PCs, personal data assistants, or PDAs, gaming consoles, MP3 players, and other handheld devices. However, because mobile WiMAX technologies have not yet become commercially available, we cannot assure you that we will be able to deploy mobile WiMAX technologies in our network or that mobile WiMAX will be competitive with other available technologies.*

*We are an early stage company, and as such we are investing heavily in building our network and acquiring other assets necessary to expand our business. As a result, we have a history of operating losses and expect to have significant losses in the future. As of December 31, 2006, our accumulated deficit was approximately \$458.6 million, and our total indebtedness was approximately \$755.7 million.*

*We believe our cash and short-term investments afford us adequate liquidity for the next 12 months, although we may raise additional capital during this period if acceptable terms are available. We also expect to require substantial additional capital in the long-term to fund our business and our success and viability will depend on our ability to raise additional capital on reasonable terms.*

---

## **Industry**

*We believe the U.S. broadband market offers significant long-term growth potential. According to IDC's U.S. Broadband Services 2006-2010 Forecast (September 2006), the U.S. residential broadband market is expected to grow at a 14.3% compound annual growth rate between 2006 and 2010. According to that same report and IDC's June 2006 Internet Commerce Market Model, Version 10.2, broadband penetration is expected to exceed 68% of U.S. households by 2010, up from 36% in 2005, as dial-up subscribers migrate to broadband connectivity and people with no Internet access become broadband subscribers. Based on those same reports, the worldwide broadband market is expected to experience similar growth trends. In its November 2006 Worldwide WiMAX Forecast, Gartner Dataquest estimates that the size of the North American WiMAX market will increase from approximately 30,000 connection installed bases in 2006 to 21.2 million in 2011, and the worldwide market will increase from 180,000 connection installed bases in 2006 to 84.8 million in 2011. In addition to growing broadband demand, the rapid growth of mobile email products, as well as sales of notebook computers and ultramobile PCs, leads us to believe that subscribers will increasingly favor Internet access that provides for the portability offered by our existing network and, once commercially deployable, the mobility offered by WiMAX.*

*As wireless broadband becomes more widely available, we believe demand for mobile applications will dramatically increase, including demand for email, web browsing, VoIP telephony, streaming audio and video, video conferencing, gaming, e-commerce, music and video downloading and file transfers. For instance, the U.S. VoIP-based broadband telephony market is expected to grow from 4.3 million households in 2005 to 22.5 million households by 2010, according to Jupiter Research's Broadband / Voice Over IP (September 2006) report, representing approximately a 39% compound annual growth rate. The worldwide VoIP telephony market is expected to experience similar growth trends, according to iSuppli's August 2006 Wired Communications Topical Report.*

## **Business Strategy**

### **■ Deploy our service broadly and increase our subscriber base rapidly.**

*We intend to deploy our network throughout the United States and internationally in markets that we find attractive. We believe that this broad deployment will enable us to rapidly increase our subscriber base. We are contractually committed to use commercially reasonable efforts to deploy mobile WiMAX networks in the United States if and when that technology meets certain requirements. If this occurs, we expect to deploy mobile WiMAX networks in our new markets in the United States and in other countries and, over time, migrate our existing markets to the same technology.*

### **■ Build our spectrum position.**

*We intend to continue acquiring spectrum in the United States and in other countries, thereby increasing the number of markets in which we are able to offer our services.*

*(Continued on next page)*

---

■ **Enhance portability and mobile service offerings.**

*We will continue to focus on enhancing the portability of subscriber equipment and to work with vendors to introduce devices that will allow us to offer fully mobile services, whether based on our existing Expedience network or on our planned mobile WiMAX network. We intend to introduce a PC Card for our Expedience network in the second half of this year that will facilitate greater mobile access to our services. We further believe that commercial deployment of mobile WiMAX will lead to the development and availability of mobile products that are compatible with our planned mobile WiMAX network.*

■ **Offer premium value added services.**

*We intend to generate incremental revenues, leverage our cost structure and improve subscriber retention by offering a variety of premium services. We currently offer VoIP telephony services in 13 markets, and plan to expand this offering to other markets in the future. We also plan to offer other premium services and applications, which may include WiFi hotspots, public safety services, security services, and subscription-based technical support. We believe that our planned mobile WiMAX deployment will enable us to offer additional premium services that take advantage of the capabilities of this technology.*

## **Underwriting**

Clearwire is being underwritten by some of the biggest names in the industry as follows:

### **Joint Lead Managers**

- JP Morgan
- Merrill Lynch
- Morgan Stanley

### **Co-Managers**

- Bear Stearns
- Jefferies
- Wachovia Securities
- Stifel Nicolaus

- Citigroup
- Raymond James
- ThinkEquity Partners

## **Finances**

Income levels for the past 3 years have been amazing, and on the rise. For the 12 months ending December 31, 2004, Clearwire brought in \$15 million. In 2005, the results for the same period, the company raked in \$33.4 million. Last, and most important, for the year ending in 2006, CLWR brought in \$100 million, a huge jump from the \$33.4 million from the year prior.

These amazing jumps just show which direction Clearwire is headed; and it's plain to see it's going straight up.