

FACILITIES-BASED COMPETITION IN MASS MARKET TELECOM: A PERIOD OF RAPID CHANGE

**2007 Telecommunications Symposium
Washington, D.C.**

Sean C. Lindsay
Associate General Counsel
Qwest Communications

November 29, 2007

Competition in the mass market telecom segment has evolved beyond competition represented by CLECs utilizing RBOC wholesale service elements and now includes facilities-based competition by wireless carriers, cable television providers and telecom providers utilizing broadband internet (landline-based and wireless) connections.

The Decade of 2000: A Period of Rapid Change

- MCI launched “The Neighborhood” (2002).
- XO acquired Allegiance (2004).
- Verizon acquired MCI; SBC acquired AT&T (2005).
- Sprint acquired Nextel (2005).
- eBay acquired Skype (2005).
- AT&T acquired BellSouth (2006).
- Microsoft announced availability of Office Communications Server business VoIP product (2006).
- Cingular became AT&T Wireless (2007).
- Integra acquired Eschelon (2007).
- PAETEC acquired McLeodUSA (2007).
- Best Buy (a leading provider of consumer retail goods) acquired Speakeasy (a provider of internet access and VoIP) (2007).
- Comcast/Cox/Time Warner Cable/Advance Newhouse announced “Pivot” joint venture with Sprint/Nextel—providing integrated fixed/mobile entertainment, internet access and telephony (2007).
- AOL/Clearwire high speed wireless broadband internet distribution partnership announced (2007).
- Cable-based telephony continues double-digit growth rates (e.g.: Comcast 3Q07 earnings report showed in excess of 3.8 million telephone subscribers, with an 86% increase in Comcast telephone service revenue over 3Q06, and Comcast added 662,000 telephone service customers in 3Q07 alone).
- Municipality-supported broadband and WiFi deployments continue to proliferate.

The Decade of 2000 (cont'd)

What does this all mean to Qwest?

- Competitive forces are multifaceted—no longer limited to CLECs.
- Cable MSOs (e.g.: Cox, Comcast, Charter, Bresnan, Time Warner, Mediacom, etc.) are aggressively marketing service bundles, including telephone service, in Qwest's region and are increasing their access line bases at an extraordinary pace.
- Wireless carriers (e.g.: Verizon, AT&T, Sprint/Nextel, Cricket, etc.) are increasingly contributing to the erosion of Qwest's customer base.
- Competition in business markets significant from landline and VoIP-based competitors; competition in residential and small business markets significant from VoIP-based (cable MSOs and stand-alone) providers—with prices as low as \$17/mo—and wireless competitors.

Note: Verizon (VoiceWing) and AT&T (CallVantage) VoIP services are now available to any broadband subscriber in Qwest's region.

- New generations of competitors (e.g.: eBay/Skype, Best Buy/Speakeasy, Microsoft) are now direct competitive threats.

THE DECADE OF 2000: THE NUMBERS

(Data for Qwest's 14 State Region, unless noted)

	<u>2000</u>	<u>2006</u>
Qwest access lines	17.6m (all time high)	12.1m
CLEC access lines	1.4m	4.1m (FCC does not require VoIP-based providers to report in-service quantities)
No. of approved Qwest/CLEC Interconnection Agreements	163	1,250
No. of wireless subscribers	12.1m	27.1m (exceeds ILEC and CLEC lines <u>combined</u>)
Average number of wireless carriers/state	6	11
Wireless ARPM (<u>national</u>)	\$0.18	\$0.07
VoIP Providers (<u>national</u>)	n/a (primarily computer-to-computer)	100+
Broadband Subscribers	.85m	11.0m (each a potential VoIP customer)

(Sources: Qwest access lines – ARMIS 43-08; CLEC access lines – FCC Local Competition Report; No. of approved ICAs – Qwest; All wireless data – FCC Commercial Mobile Radio Services report; VoIP providers – www.voipreview.org; Broadband subscribers – FCC High Speed Internet Access Report)

THE DECADE OF 2000 (cont'd)

EFFECTS OF COMPETITION ON THE RBOC RETAIL SWITCHED ACCESS LINE BASE: 2000 VS. 2006

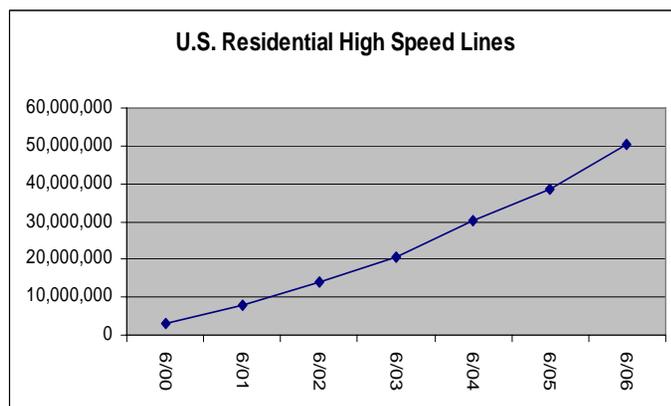
(source: ARMIS Report 43-08, Table III)

	Res. Line <u>Decrease</u>	Res. Line <u>% Decrease</u>	Bus. Line <u>Decrease</u>	Bus. Line <u>% Decrease</u>
QWEST	(3,723,000)	(32)%	(1,740,000)	(31)%
VERIZON	(10,761,000)	(28)%	(4,768,000)	(23)%
AT&T	(16,244,000)	(30)%	(5,766,000)	(20)%

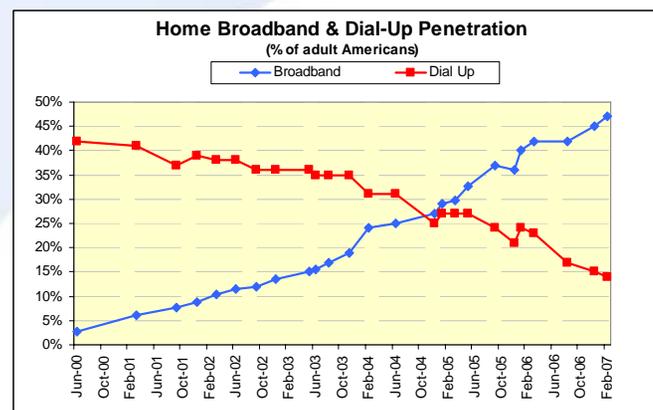
- Each RBOC is experiencing robust competitive pressure in the residential and business markets from a wide range of intermodal and intramodal competitors.

BROADBAND GROWTH REPRESENTS INCREASING FACILITIES-BASED TELECOM COMPETITION IN THE MASS MARKET

- Residential high speed lines in the U.S. have increased from 3.2m in 2000 to 58.2m in 2006, an increase of over 1,700%.
- Roughly half of U.S. households now subscribe to broadband internet service, and that trend continues its upward trajectory.



Source: FCC High-Speed Services for Internet Access Report, January 2007



Source: Pew Internet and American Life Project: July 2007

- In 2007, 63% of adults ages 18-29 use broadband internet at home, and 59% of adults ages 30-49 do so. These demographics will continue to drive broadband internet adoption.
(Source: Pew Internet and American Life Project: July 2007)
- Availability of a broadband internet connection enables the customer to purchase VoIP-based service from a myriad of providers; from cable telephony providers to stand-alone VoIP companies (e.g.: Vonage, Packet8, AT&T CallVantage, Verizon VoiceWing, Net2Phone, etc.) in lieu of landline voice telephone service from an ILEC.

WIRELESS SERVICE IS INCREASINGLY A FULL SUBSTITUTE FOR TRADITIONAL LANDLINE SERVICE

- Since 2003, FCC CMRS data shows a steady upward trend in “cord cutting.”
- Latest federal findings: As of 12/06, **11.8%** of households in the U.S. with telephone service have only wireless phones. (Source: CDC National Health Interview Survey, 5/2007).

Percentage of U.S. Households With Only Wireless Telephone Service



- Percentages are significantly higher in certain population segments, e.g.:
 - Age group 25 -29: 29.1%
 - Households classified as “poor”: 22.4%

AVAILABLE DEVICES FACILITATE “CORD CUTTING”

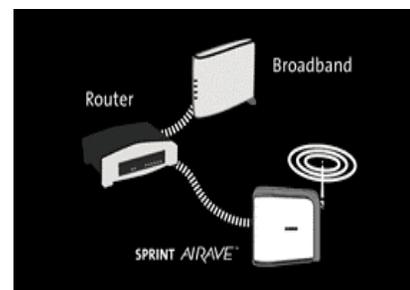
T-Mobile Hotspot @ Home

- Introduced nationwide in 2007
- Integrates in-home cell calls with VoIP
- Base station purchase \$49.99, service \$9.99/mo.
- At home calls not counted against monthly cell plan minutes
- Significantly improved in-home cell call quality



Sprint AIRAVE

- Introduced 9/07 in Denver, Indianapolis
- Phased nationwide deployment in 2007 and 2008
- Integrates in-home cell calls with VoIP
- Base station purchase \$49.00, service \$15.00/mo.
- At home calls not counted against monthly minutes
- Significantly improved in-home cell call quality



Dock 'n Talk

- Available nationwide
- Allows cell phone to be connected to existing in-home inside wiring to activate all existing standard telephones
- Allows any in-home standard telephone to make/receive calls via the subscribers preexisting cellular service
- Purchase price \$125.00



WiFi: IT'S HERE AND IT'S GROWING

WiFi

- Enables wireless broadband internet access at up to [54 Mbps](#).
- Factors: limited range, but simple and low cost to deploy.
- Numerous WiFi providers are now serving each state in Qwest's region, i.e.: Spokane Hot Zone, Roadrunner Wireless (Rio Rancho, NM), TCT West (WY), Wireless Minneapolis.
- Over 150 municipal WiFi networks have been deployed in the U.S., with over 200 more in planning stages (source: MuniWireless.com)
- Wireless VoIP handsets are now readily available for use in WiFi applications in lieu of traditional landline voice telephony.

WiFi (cont'd)

- Skype announced on 1/4/06 the availability of its “WiFi phone” enabling use of Skype VoIP service without a PC (contains on-board modem enabling VoIP calling). Price: \$99.99.
- WiFi phone will enable Skype to “multiply by 10 the number of Skype users across the world.” (source: Skype press release) Skype had 220 million users as of Oct. 2007.
- Skype purchased by eBay 10/05 for \$2.5 billion – a very formidable union and one well attuned to the mass markets.



NETGEAR® NETGEAR Skype WiFi phone

WHAT IS IT?

A mobile phone that enables you to make free Internet calls to anyone else in the world who has Skype.
[More Frequently Asked Questions](#)

TELL ME MORE!

Sign up and we'll let you know when this phone will be available and how to be one of the first to get your hands on it.
[Sign Me Up](#) [High Resolution Photo](#)

Calls anyone on Skype, anywhere in the world for free, without using a PC.

Makes calls wherever you have Wi-Fi access.

Communicates with ordinary phones worldwide for pennies per minute.

Manages your contact list and displays who's available to talk.

- Vonage now offers a similar VoIP WiFi phone at \$80.00 after rebate.

WiMAX is “WiFi on Steroids”

- Enables wireless broadband internet access at up to [72 Mbps](#).
- Fixed or mobile applications.
- Greater range than WiFi: up to 6 miles from base station.
- Lower cost to deploy (fewer base stations required).
- International Telecommunications Union (ITU) certified WiMAX standards in 10/07—allows industry to proceed to deployment under unified standards.
- In 10/07 (one week after ITU announcement), Cisco purchased Navini Networks (a major manufacturer of WiMAX networking equipment) for \$330m.
- Remaining issues: spectrum, CPE compatibility, etc.
- Yet another means of complete bypass of “last mile” wireline loop.
- Sprint has committed \$5b to WiMAX (“XOHM”) deployment through 2010, with initial market launch in 2007 in Chicago and Baltimore/Washington D.C., followed with broad commercial launch in 2008.
- Numerous deployments, system trials now underway.

WiMAX AS **CURRENT** VOICE/INTERNET ACCESS ALTERNATIVE

clearwire®

- Founded in 2003 by Craig McCaw, headquartered in Kirkland, WA.
- Pre-WiMAX service, utilizing 2.5 GHz licensed spectrum.
- Clearwire wireless broadband service now available in 16 states.
- Wireless broadband internet plans: from \$14.99/mo for 768k to \$44.99/mo for 2.0 Mb.
- Wireless VoIP available at \$29.99/mo. (unlimited local/LD plus over 15 features).
- Direct substitute for landline-based voice and internet access services.

EMERGING TECHNOLOGIES

Broadband Over Power Lines (“BPL”)

- Uses the AC power distribution network to support the simultaneous transmission of power and broadband data, using the unused bandwidth of existing power lines into homes and businesses. Requires use of a special “modem” that plugs into a standard AC power outlet to access the broadband internet capability. Can provide broadband internet capacity of up to [200mbps](#). (source: Wikipedia).
- Many BPL trials underway, e.g.: Meridian, Idaho; Boise, Idaho; Wenatchee, Washington; etc.(source: www.bpldatabase.org)
- Clear potential for loop bypass and another enabling technology for expansion of VoIP service.

Ultrawide Wireless Broadband

- Utilizes natural gas pipelines into homes/businesses.
- Currently in developmental stage.
- Provides broadband transmission capacity of approx. [100 Mbps](#).
- 70% of U.S. households and 35% of businesses are served by natural gas.
- Estimated deployment cost: \$500/customer (less than DSL).

(source: C/Net News.com, 11/11/05)

CONCLUSIONS

Rapid change in the telecommunications industry is a given and will continue to drive heightened facilities-based competition and innovation in the mass markets. As these competitive pressures continue to escalate, incumbents and new entrants alike will be driven to deliver the best telecom service value, and the customer will be the ultimate winner.