

Wireless Broadband Infrastructure for Innovative Applications

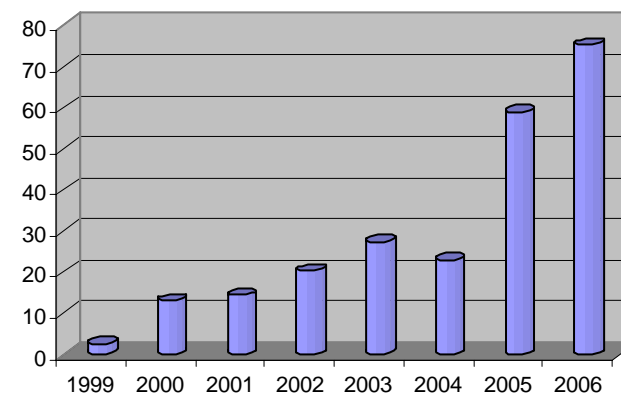
Lionel Chmielewsky, Senior Vice President, Proxim International

Global Forum, Venice, November 5, 2007

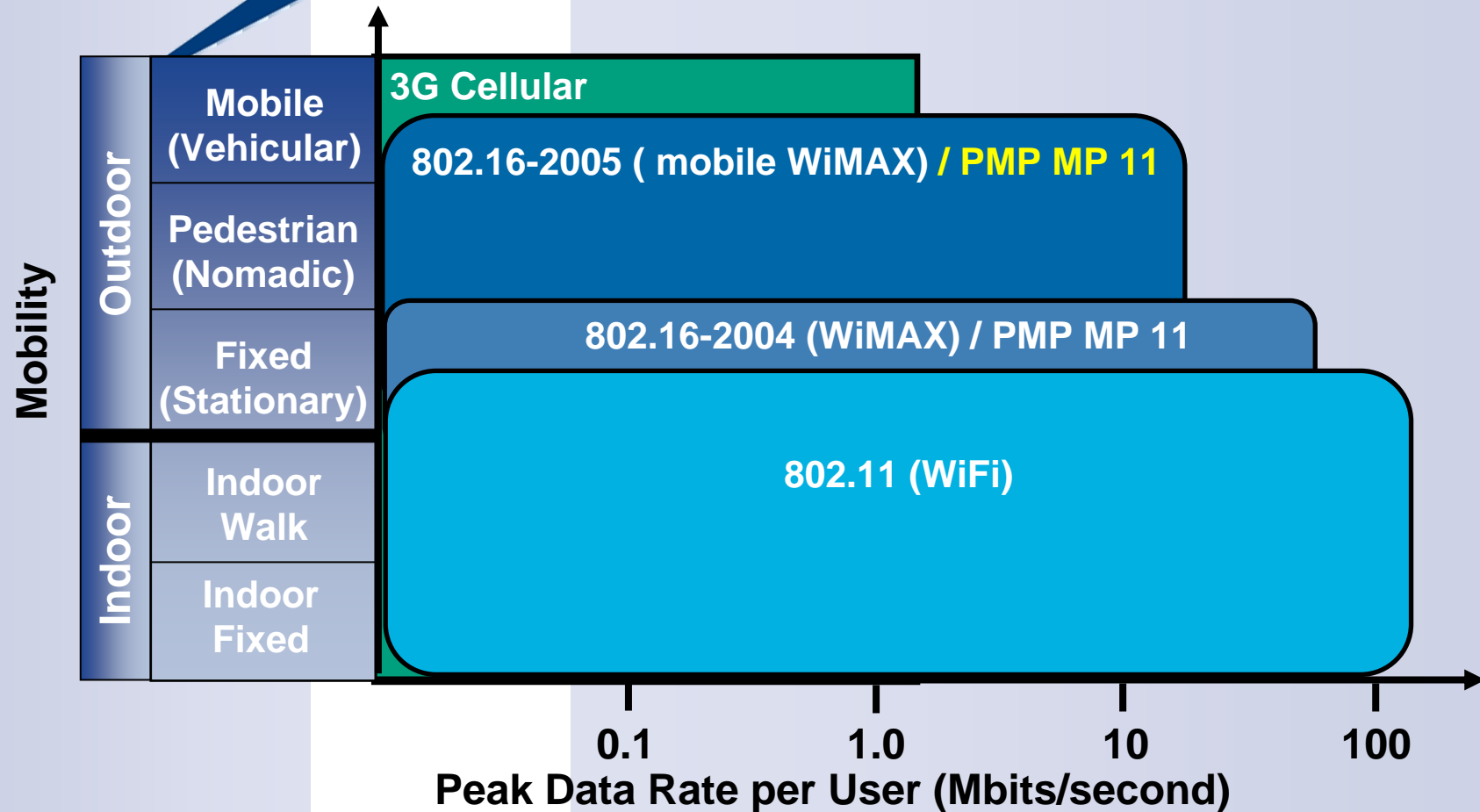
- Who is Proxim?
- The Wireless Technologies?
- The Benefits of Wireless Technologies
- What type of applications?

- A global pioneer in scalable, broadband wireless networking systems for Service providers and Private Networks
- Corporate Facts
 - Headquarters: San Jose, International HQ: Paris Employees: 240
 - More than 25 years of expertise in Wireless Networks
 - 2 Billion \$ in cumulative R&D investment
 - Stock symbol: PRXM (NASDAQ)
 - Fastest growth company by NetworkWorld, Product Innovation Award WiMAX Solutions by Frost& Sullivan
- End-end solutions
 - WiFi, Mesh and Wimax
 - Voice, Data, Video
 - Licensed and Unlicensed
 - Founding Member: Wimax Forum, WiFi Alliance..

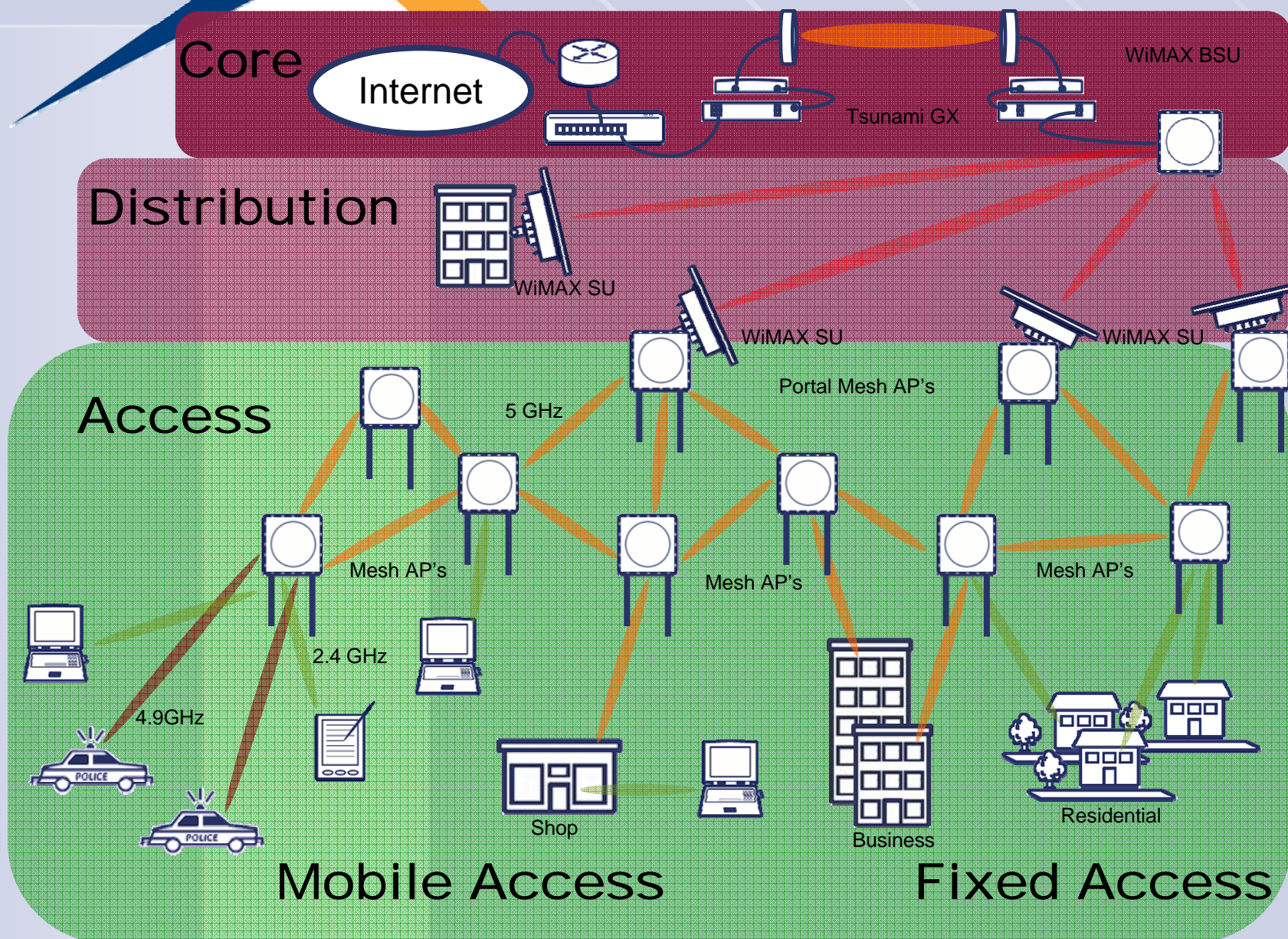
Annual Revenues (\$M)



2G, 3G, WiFi and WiMAX positioning



- Market is converging onto the 802 standards
- WiMAX extends the coverage of Wi-Fi
- 3G best suited to high mobility/low data rate applications



Why Wireless?

- Enables nomadicity and mobility
- In areas without infrastructure, wireless capex a fraction of wireline
- Flexibility
 - Easy to evolve wireless to fit changing needs and environment
 - Enables rapid setup and teardown for special events, emergencies, etc

- More 300 million Wi-Fi clients have shipped to date
- Dual-mode handsets accelerating Wi-Fi client shipments - 200+ million dual-mode handsets expected to ship by 2010 (In-Stat)
- Apple alone shipped 1 million dual-mode iPhones in 74 days

- 1. Bridging the Digital Divide
- 2. Security and Surveillance
- 3. Municipal Network
- 4. Mobility Application
- 5. Emergency solutions
- 6. Solutions for Education and Hospitals

1. Bridging the Digital Divide

- Fixed
 - Africa has an average of 3 fixed lines per 100 people.
 - The Americas region has an average of 34 fixed lines per 100 people.
 - Europe and the CIS has an average of 40 fixed lines per 100 people.
- Mobile
 - The G8 countries (14% of the world's population) accounts for 34% of the world's total mobile users.
- Internet
 - There are the same number of Internet users in the G8 countries than in the whole rest of the world combined,
 - The entire African continent has fewer Internet users than France alone.
 - More than 40 countries have less than 10Mbps of international Internet bandwidth, whereas in France, a 8 Mbps high-speed Internet package is available for just EUR 30 a month.
 - There are still 30 countries with an Internet penetration < 1%.

Customers

- Serves residential, business and cyber cafe users in India
- Owned and operated by Sify

Solution

- Unlicensed band point-to-multipoint network

Applications Enabled

- Broadband access
- VoIP



2. Security and Surveillance

- Problem
 - Protect Bay Area's transportation infrastructure consisting of 7 bridges and 2 tunnels
- Solution
 - Multipoint Subscriber Units connect IP cameras to Multipoint Base Stations
 - Redundant Point-to-Point from bridges to Caltrans office
 - Constant, reliable surveillance that can survive harsh outdoor environments
 - Cost and time savings vs. fiber, designed for outdoors



Case Study: *Umatilla, OR*

Customers

- Serves U.S. Chemical Weapons Depot and 9 cities in the area
- Owned and operated by EZ Wireless

Solution

- Network composed of unlicensed band point-to-point, point-to-multipoint and Wi-Fi mesh

Applications Enabled

- Video surveillance
- First responder communications
 - Police
 - Port authority
 - EMS
 - Military
- DMV access to patrol cars

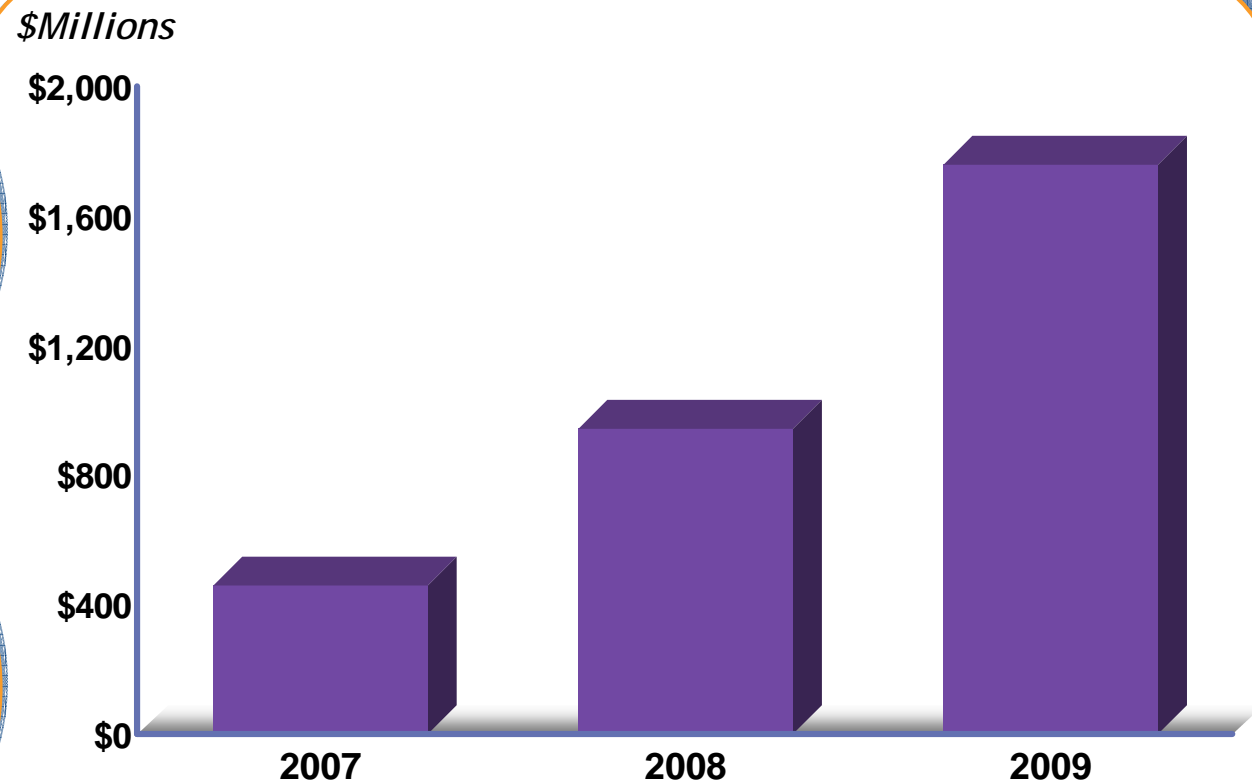


3. Municipal Networks

Muni Wireless Spending Growing

U.S. Municipal
Wireless Spending
projected to be
more than \$3B
over next
three years

40% to 50%
of the spending
is for equipment



U.S. Municipal Wireless Spending

Source: MuniWireless

Case Study: Bellwood, IL

The “Digital City” Project

Bellwood, IL Profile

- A suburb of Chicago in Cook County, IL
- Population of 20,535
- Land area of 2.5 mi²

Problem

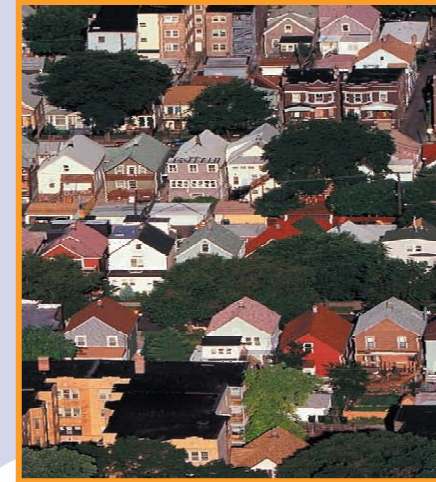
- Empower public safety and enhance the quality of life
 - IP-based security and surveillance system
- Provide city-wide Wi-Fi to residents
- Increase municipal productivity
- Attract and enable commerce

Solution

- Citywide Wi-Fi mesh network with unlicensed band point-to-multipoint backhaul

Results To Date

- Crime down 15% year-over-year
- 911 calls reduced by thousands year-over-year
- Tri-fold increase in home values
- Significant increase in city revenues



- No license fees
- No administrative costs or delays
- Deployment and configuration flexibility
- Interference concerns mitigated by intelligent radio technology

4. Mobility Applications

Case Study: *Rail Transit in KyeongSan*

Customer

- Owned and operated by KyeongSan Transit

Solution

- Unlicensed band point-to-multipoint network

Applications Enabled

- Mobile video surveillance with cameras in cars of operator-less train



5. Emergency Solutions

Challenge

- Population of over 10 million people
- Very low broadband penetration of 0.1% of the population as of January 2004
- Host of the summer 2004 Olympic games
- Needed to accelerate broadband deployment in Athens and across the country for businesses, hotels and residents.

Solution

- Phase I: Deploy 120 wireless hot spots with wireless backhaul at Athens hotels and outdoor areas for the summer Olympic games as well as to surrounding cities
- Phase II: Deliver last mile access to core business customers including hotels, vacation villages, airports, exhibitions and conference centers across Greece
- Phase III: Includes an additional 350 hot spots, wireless backhaul and last mile access to businesses and residences.



6. Solutions for Education and Hospitals

Case Study: *Indian Business Academy*



Customers

- Serves students, faculty and visitors
- Owned and operated by Indian Business Academy

Solution

- Unlicensed band point-to-multipoint network and indoor Wi-Fi access points

Applications Enabled

- Campus-wide broadband access

Results

- Dramatic improvement in student productivity



Case Study: *Kadlec Hospital*

Customer

- Serves hospital staff and patients
- Owned and operated by Kadlec Hospital

Solution

- Wi-Fi access points and clients with 802.1x security

Applications Enabled

- Broadband access while maintaining compliance with U.S. health care record privacy regulations (HIPAA)



Conclusion: How can Wireless Help to Implement Innovative Applications?

- License or License Free
 - Giving chances to everyone to step in: 2.4 GHz & 5 GHz (mostly unlicensed) , 3.5 GHz (mostly licensed)
- Fast and secured Deployment
 - Can start from "green-field" or interface with existing networks (Satellite, Fiber etc...)
 - End to End Solutions
 - Indoor and Outdoor Applications
 - Pico cell approach, low consumption (< 12 W/BS) and Higher throughput efficiency
 - Can use alternate power sources (Solar, wind), No rack mounting, No air conditioning required
 - Highly secured (AES, Encryption.....)
 - Can connect up to 50 new subscribers per day per team

Conclusion: How can Wireless Help to Implement Innovative Applications?

- Quick Return on Investment
 - Typical Capex per Indoor Subscriber is @ 300 USD for Wimax
 - Typical Capex per Outdoor Subscriber is @ 450 USD for Wimax
 - Typical Payback on a turnkey network (WiFi and Multipoint):
 - Between 5 to 10 months (expected revenues per subscriber \$25/Mbps) for developed countries
 - Between 10 to 15 months in countries under development

Thank you !

Questions?

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