



PRESENTS

**NETWORLD INTEROP**



# MAKING BROADBAND MULTIPOINT WIRELESS REAL & COST EFFECTIVE

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Dean S.K. Chang

Director, Product Management

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Email: [dchang@apertonet.com](mailto:dchang@apertonet.com)

Phone: (408) 719-9977

# Comparison of Wireless Data Networks

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*1990's*

## Wireless LANs

- Vertical Markets
- Enterprise
- Home Networking

## Point To Multipoint

- Broadband
- Mega-cell  
architecture

## Point To Point

- Backhaul for  
cellular
- Enterprise

# Wireless Data Networks

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*2000's*



**Wireless  
LANs**

**Point  
To  
Multipoint**

**Point  
To  
Point**

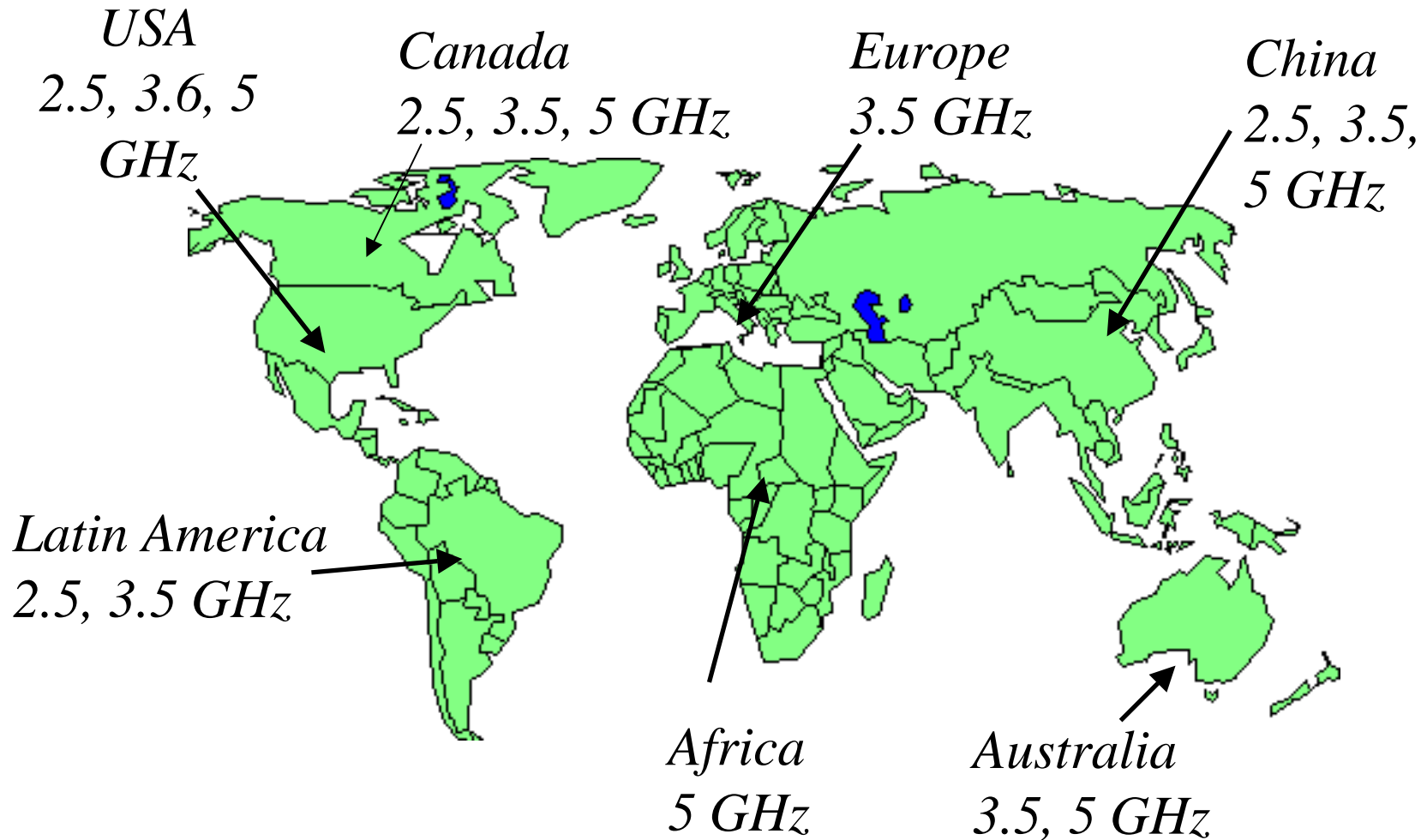
- **Vertical Markets**
- **Enterprise**
- **Home Networking**
- **Wireless MAN**

- **Broadband**
- **Multi-cell**
- **Multi-sector**
- **NLOS**

- **Backhaul for Cellular**
- **Enterprise**
- **3G Backhaul**

# Worldwide Market Opportunity

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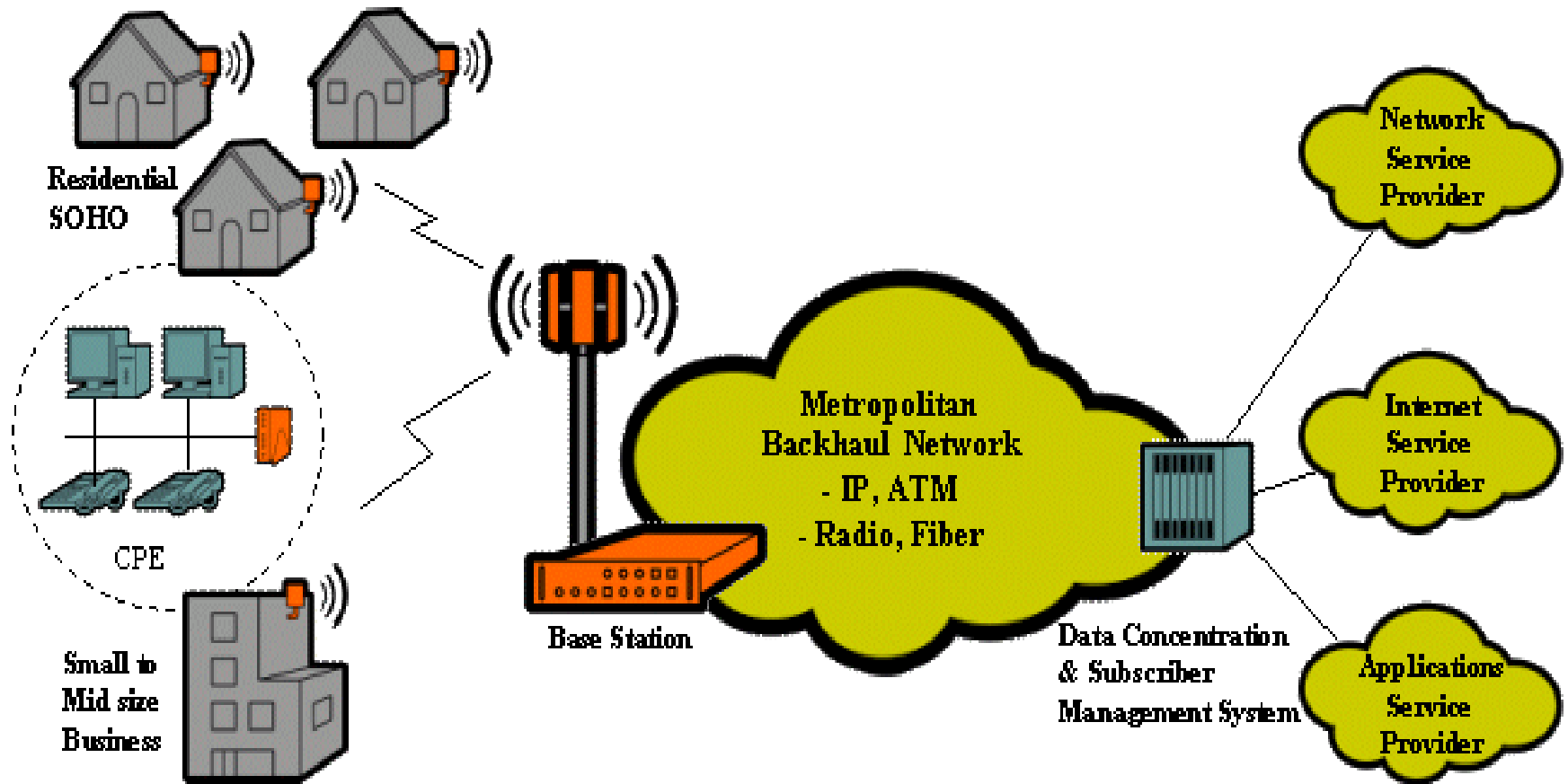
# Data Only Requirements for P-MP

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- **IP based**
- **Multi-Cell Network**
- **LoS, OLoS & Non-Line-of-Sight Operation**
- **Adaptive PHY (Antenna, Radio & Modem)**
- **Advanced MAC Scheme**
- **End-to-end QoS Management**

# Data Only Architecture

## *Internet Service Delivery*



# Internet Access Requirements

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- **QoS for Multiservice**
  - Modify various parameters such as jitter and latency
  - Support for video, voice and data
- **Bandwidth Guarantees**
  - Min rate guarantee
  - Peak rate regulation
- **SLA (Service Level Agreements)**

*Differentiated Services*

# Standards

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- **IEEE 802.16**
  - 2 PHY modes Single Carrier and Multi-carrier
  - MAC optimized for wireless
- **ETSI HiperMAN and HiperACCESS**
  - Reviewing baseline proposals
- **Industry Consortium Groups**
  - Broadband Wireless Internet Forum (BWIF)
  - OFDM Forum
  - TDD Coalition

*Multi-vendor Interoperability*

*Lower cost due to economies of scale*