NewVenture
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A Business Case For
Mobile Broadband Data

WOCC2005

March 22, 2005

New Venture Partners

Over 50% of American Homes Have Broadband Access & Growing Quickly

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Broadband vs. Narrowband in the U.S.

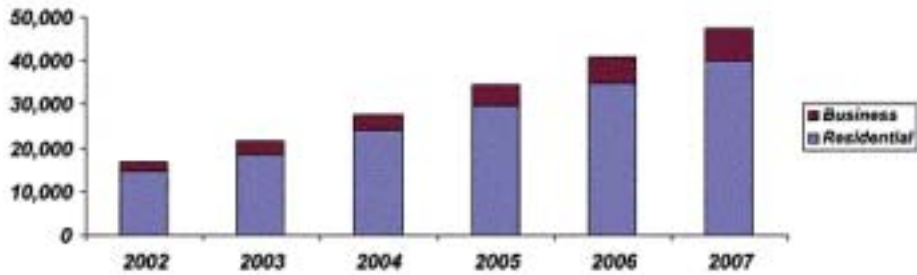|	Broadband	Narrowband
Feb. 2005	56%	44%
Jan. 2005	55%	45%
Dec. 2004	55%	45%
Nov. 2004	54%	46%

•**Total broadband is an aggregation of ISDN, LAN, cable modem, and DSL**

Source: Nielsen/Net Ratings, as of Mar. 17, 2005

Slide 1

This Is Also True In Europe and …

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	2002	2003	Growth
Switzerland	11%	24%	119%
Belgium	12%	23%	89%
Netherlands	13%	22%	71%
Denmark	15%	22%	48%
Finland	8%	18%	137%
Sweden	14%	18%	35%
Norway	9%	18%	107%
Austria	11%	16%	42%
Spain	5%	14%	202%
Portugal	7%	13%	92%
France	5%	13%	159%
UK	5%	10%	92%
Germany	9%	10%	19%
Italy	4%	9%	137%
Luxembourg	2%	7%	245%
Ireland	0%	2%	848%
Greece	0%		1140%
Western Europe	7%	12%	81%

*Excluding business lines

Base: Western European households

Slide 2

… And In Asia-Pacific

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Legend: Business, Residential

Years: 2002, 2003, 2004, 2005, 2006, 2007
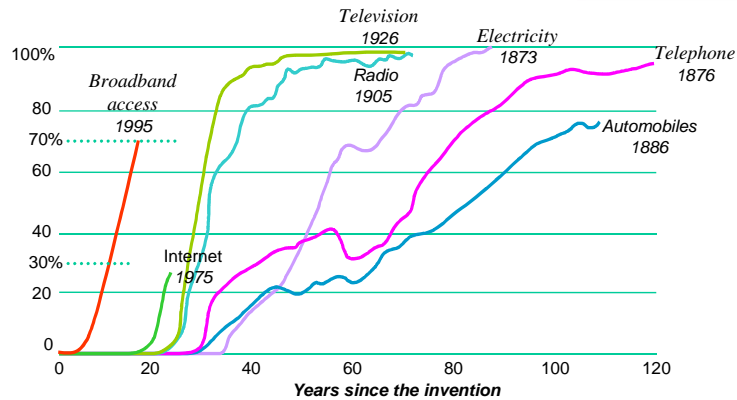
From IDC 2003

It's Happening Very Quickly

- The penetration rates of broadband access across the world considerably outpace the penetration rates of other technologies and systems that have become indispensable attributes of modern everyday life.
- **Industry analysts predict that in the nearest future broadband access in the developed countries will become an indispensable feature of life support infrastructure for hundreds of millions of people.**

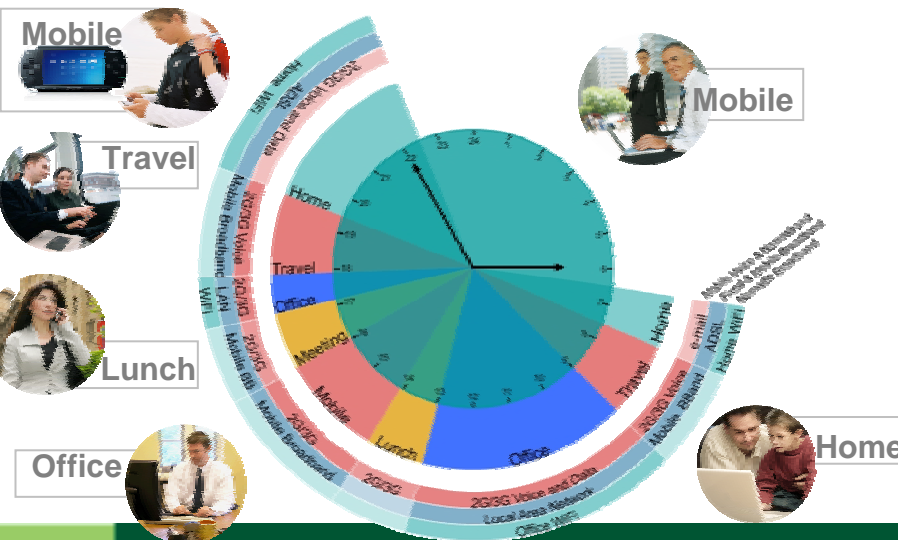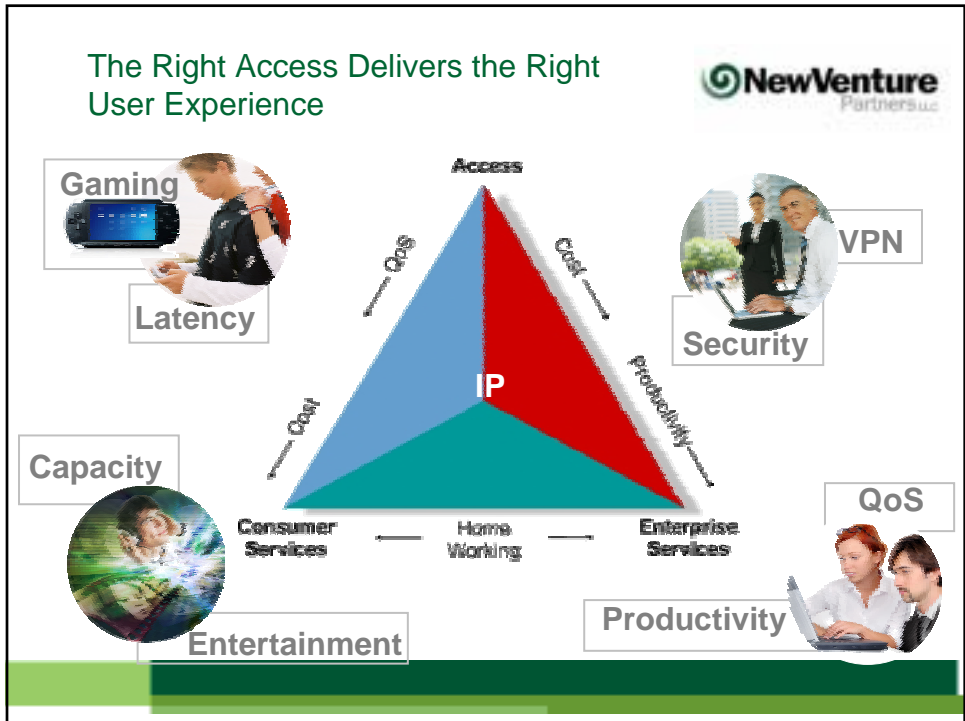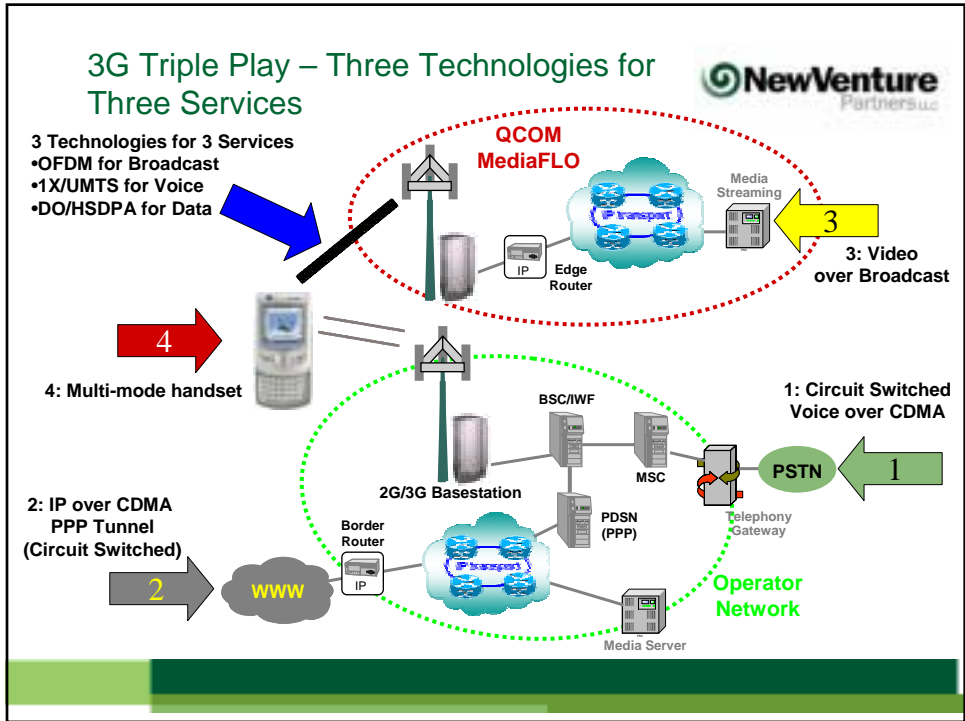Consumers Are Also Experiencing Wireless Broadband

- Consumer take up of Wi-Fi
  - 30 million worldwide users in 2004 (up from 9.3M in 2003)
  - 802.11g access prices declined 10%+ in 2004
- 10 million + homes in US have wireless networks
- 29% growth in global wireless Internet users in 2004
- More applications – gaming, email, video
- More devices – notebooks, handsets
- Lower cost to carriers and consumers

Mobile Broadband Opens Up New Markets & Customers

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Chat & Video Messaging

Gaming

VPN

Pictures

Telematics

News CNN

IP TV

Enterprise

It's Becoming a Multi-Access, Multi-Technology World

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Mobile

Mobile

Travel

Lunch

Office

Home

3G Triple Play – Three Technologies for Three Services

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3 Technologies for 3 Services
- OFDM for Broadcast
- 1X/UMTS for Voice
- DO/HSDPA for Data

QCOM MediaFLO

Media Streaming

3

3: Video over Broadcast

IP Edge Router

IP transport

4

4: Multi-mode handset

1: Circuit Switched Voice over CDMA

BSC/IWF

2G/3G Basestation

MSC

PSTN 1

Telephony Gateway

2: IP over CDMA PPP Tunnel (Circuit Switched)

Border Router

PDSN (PPP)

2 WWW

IP

IP transport

Operator Network

Media Server

The Right Access Delivers the Right User Experience

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Gaming

Latency

VPN

Security

Access

QoS

Cost

IP

Cost

Productivity

Capacity

QoS

Consumer Services

Home Working

Enterprise Services

Entertainment

Productivity

The World Is Adopting OFDM

OFDM will be the basis for Qualcomm's Multicast technology at 700MHz

WiMAX is based on OFDM Technology

WiFi is based on OFDM Technology

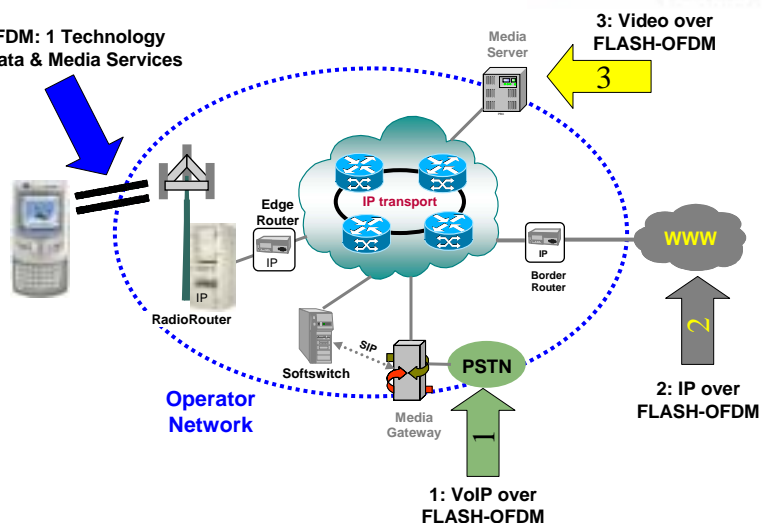**WiBro will use OFDMA Technology**

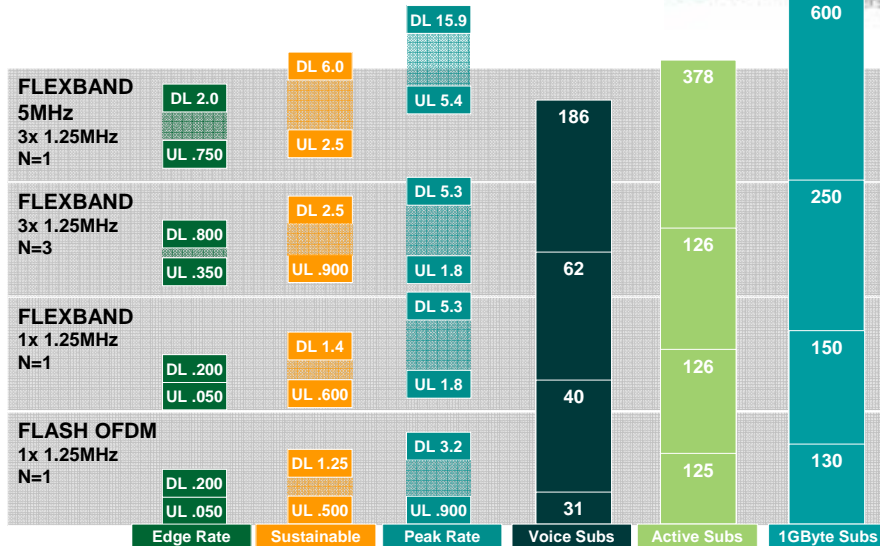**DoCoMo, Siemens, Motorola have all demonstrated high speed data using OFDM**

Flash-OFDM Triple Play – One Technology for Three Services

FLASH-OFDM: 1 Technology for Voice, Data & Media Services

3: Video over FLASH-OFDM

Media Server

IP transport

Edge Router

IP

RadioRouter

IP

Border Router

WWW

SIP

Softswitch

PSTN

Operator Network

Media Gateway

2: IP over FLASH-OFDM

1: VoIP over FLASH-OFDM

Flarion Flash-OFDM Sector Capacity

Summary

- The industry is migrating towards a Multi-Access, Multi-Technology world
- OFDM is the technology that will deliver mobile broadband to the mass market
- First: Mobilise the Computing Experience
- Second: Mobilise Consumer Data Access
- Users don't like change: Keep it Simple
- Access is key – How it is delivered is critical to revenue growth