

The Coming Revolution in Voice Communication Services

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Traditional Voice Services

- Voice is one of the oldest forms of communication
- Voice communication is part of nearly every aspect of our daily lives
 - Business and personal
- We integrate voice communication with:
 - What we see
 - What we read
- The concept of a phone call is defined by technology

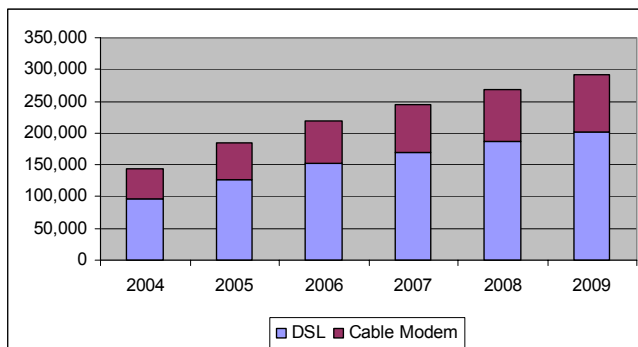
*It's time to change the way we think of
voice communications*

VoIP Changes Everything

- VoIP disrupting telco business models
 - Creating opportunities for alternative carriers
 - Lower IDD and national LD rates
- Driving deployment of new IP technologies
 - Lower carrier operating costs
- Generating new services that integrate voice into many different applications

Broadband Access Forecast

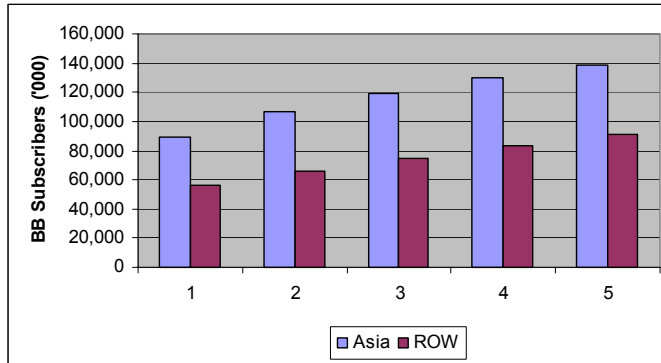
Worldwide BB subscribers (in Thousands)



• *BB access will continue to grow; enabling VoIP applications*

Asia Broadband

Asia BB subscribers as compared to ROW



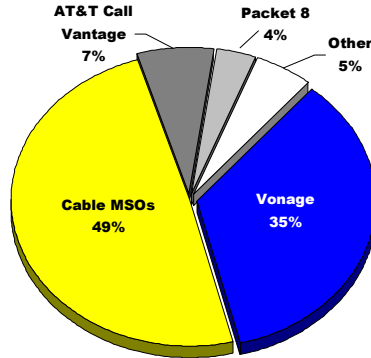
• *High BB access growth forecasted for Asia*

VoIP Market Overview

- Large increase in US VoIP subscribers
 - Cable MSOs deploying VoIP
 - Emulates POTS
- 10.8 million VoIP subscribers worldwide at YE 2004
 - Asia/Middle East have most subscribers
- VoIP market segmentation
 - Pre-paid VoIP calling cards/Post-paid subscriptions
 - Free peer-to-peer VoIP services
- Mass migration to VoIP not happening
 - Cannibalizes existing voice revenue
 - LD cost savings only benefit

2004 Consumer VoIP

US IP Telephony Market Share



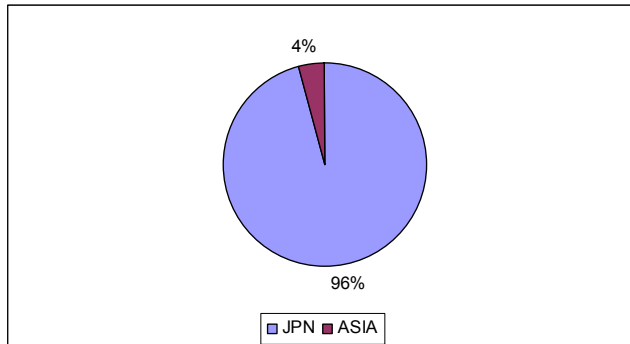
2004 Subscribers

1.1M US

Source: In-Stat, 9/05

Asia VoIP Market

2004 VoIP Subscribers

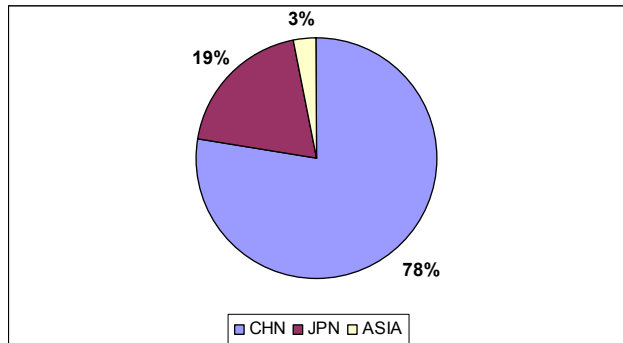


•Japan is where the VoIP subscribers are in Asia

Yahoo BB in Japan – 4.4M

Asia VoIP Market

2004 VoIP Minutes

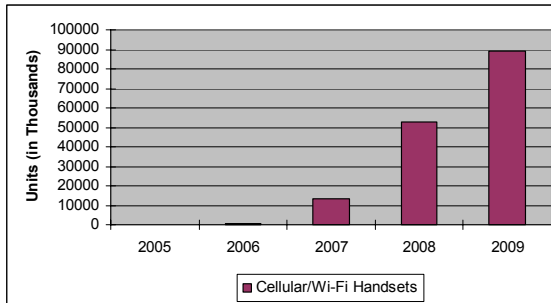


• *China uses VoIP more than any country in Asia.*

Fixed/Mobile Convergence

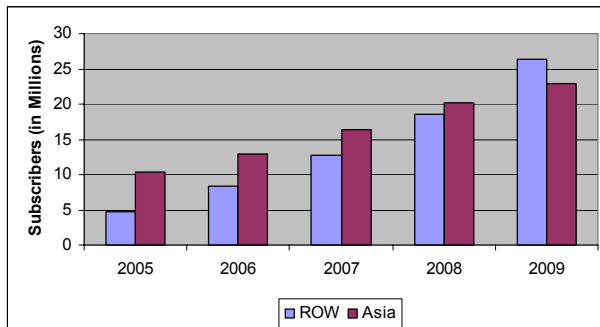
- Dual-mode cellular/Wi-Fi network services
 - Single handsets for cellular and VoIP calls
 - Seamless roaming between networks
- Mobile Virtual Network Operator (MVNO)
 - Wireline carriers can enter cellular markets
- Unlicensed Mobile Access (UMA)
 - Cellular operators can enter VoIP markets

Cellular Wi-Fi Forecast



- Rapid adoption of dual-network services as handset prices decline
- 70% of handsets will go into consumer markets

Global VoIP Forecast



- Japan and China will dominate the Asian VoIP market.
- US will lag behind both Asia and Europe

Nearly 50 million VoIP subscribers worldwide by 2009

2009 Consumer Market

2009 US VoIP Market = \$3.2B

Worldwide View:

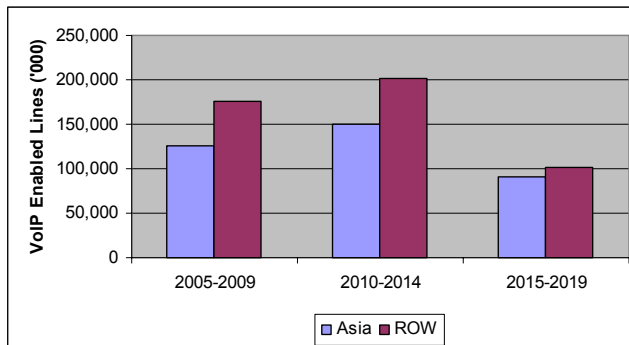
in Millions	2005	2009
Main PSTN Lines	917.60	1,101.12
BB Subscribers	184.00	292.00
VoIP Subscribers	22.90	118.70
WiFi CPE Devices	33.82	113.78
Cellular/WiFi Handsets	0.001	66.65
WiFi Phones	0.42	19.88

Source: In-Stat 7/05

BB+WiFi Gateway+Cellular/WiFi Set = Mass Migration to VoIP

2005-2019 View

VoIP-enabled lines worldwide 2005-2019

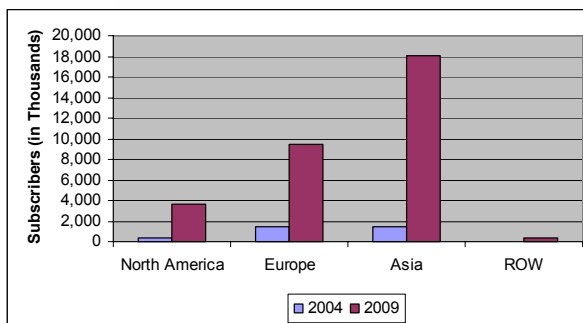


•In 2019, 30% of all worldwide PSTN lines will still be operational

Next-Gen Voice Applications

- Voice will be integrated with many other applications
 - On-line applications (eBay, Google, etc)
 - On-line gaming (such as xBox)
 - Home networking (such as security)
 - Entertainment (Interactive VoD services)
 - Telematic (automobiles)

Telco TV Forecast



• *111.5M homes passed by 2009*

• *In-Stat expects over 100,000 TelcoTV subscribers in China by year-end 2005.*

• *In 2009, China and Japan will dominate the Asian IPTV market.*

Market Impacts

- Migration from per event pricing to flat rate
- Bundled rates
- Voice will be more than just calls
 - Consumers will select applications, not carriers
- Voice QoS, features and functionality will be defined within the scope of the application/service

Predictions

- Consumer VoIP will be more of a mobile service than a wireline service
 - Dual network integration
 - Cellular/VoIP minutes or flat rate VoIP pricing
 - National brands
 - Proliferation of MVNOs
 - Wireline/wireless networks remain separate
- Wireline carriers will not receive bulk of VoIP future revenue
- Wireline and wireless carrier subsidiaries will ultimately merge into single organizations

Value of In-Stat Research

- *What new voice services will end users want?*
- *What are consumer preferences for content applications?*

- **IMS & Fixed/Mobile Convergence Research Service**
 - Focus on future SIP, IMS, FMC services from a new product development perspective
 - Customer preferences, features, functions, network requirements, competition, pricing and bundling
 - Demand-side survey data in every report
 - Collaborative effort across all research practices

IMS/FMC Research Topics

- **2006 Research Coverage**
 - SIP/IMS-based Business Services
 - Enterprise IT Applications Enhanced by IMS-based Services
 - Consumer Spending Available for Next-Gen Services
 - SIP/IMS-based Personal Consumer Services
 - 3G+ Mobile Personal Consumer Services
 - Next-Gen Household Services
 - Dual Network Services
 - End-User Experience

Also New for 2006

Wireless Broadband Research Service

- Covers both Wi-Fi and WiMAX
- Complementary and competing applications
 - Wireless broadband access
 - Point-to-point backhaul
 - Hot spots vs. Hot zones
 - Mobile handsets
 - Consumer electronics
- Time frame for applications migrating to new technology

In-Stat Research Coverage

- | | |
|-----------------------------|-------------------------|
| ■ Semi-conductors | ■ Business/Res Services |
| ■ Networking Equipment | –VoIP |
| –Wireline | –Broadband Access |
| –Wi-Fi, WiMAX | –Integrated V/D |
| –IMS/FMC | –IP Centrex |
| –Enterprise | ■ Entertainment |
| ■ Mobile Devices & Services | –Music |
| ■ Multi-Media Devices | –Video Games |
| –BB CPE routers/gateways | –IPTV |
| –PCs, PDAs | ■ Market Segmentation |
| | –Vertical markets |
| | –Demographics |

Other Research Services

- China/APAC market research reports
- Multi-Client Studies
- Custom research studies
 - US, Asia and Global
- Consulting
 - Strategy and Planning
- Semiconductor Forums
 - US and Taiwan
- White papers
- Newsletters