

VoIP Technology

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Presentation Outline

- 1. Overview**
- 2. VoIP Application**
 - Web Call Center
 - Enterprise Voice Solution
- 3. Technology Challenges**
 - Network Architecture
 - Hardware
 - Software
 - Protocol
- 4. VoIP in 3G**

Overview

PSTN Replacement?

- **In 1994:** Concept Originated from Israel
- **In 1996:** ITU-T Published H323 for
Multimedia Communications
- **In 1999:** H323 v2
- **Short Term:** Call Cost Reduction
- **Long Term:** Point-of-Service Applications



VoIP Application

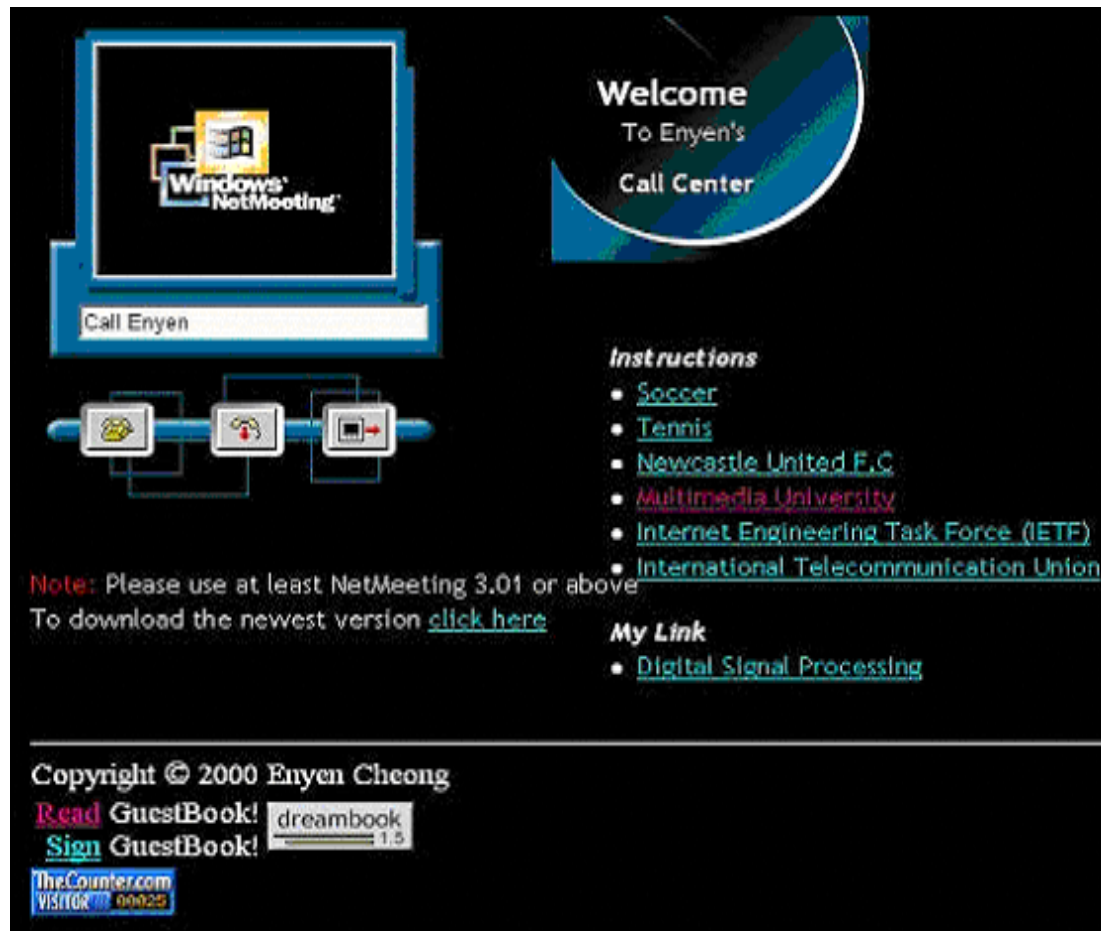
Web Call Center

- Advance Integrated Application
- E-Commerce/M-Commerce

Benefits

- Convenient & Efficient
- Enhance Customer Support Services
- Cost & Time Saving

Network Layout



Web Call Center

1. H323 Compliant Software
2. Active-X Functionality
3. Dial Pad Option
4. Speed Dial



VoIP Application

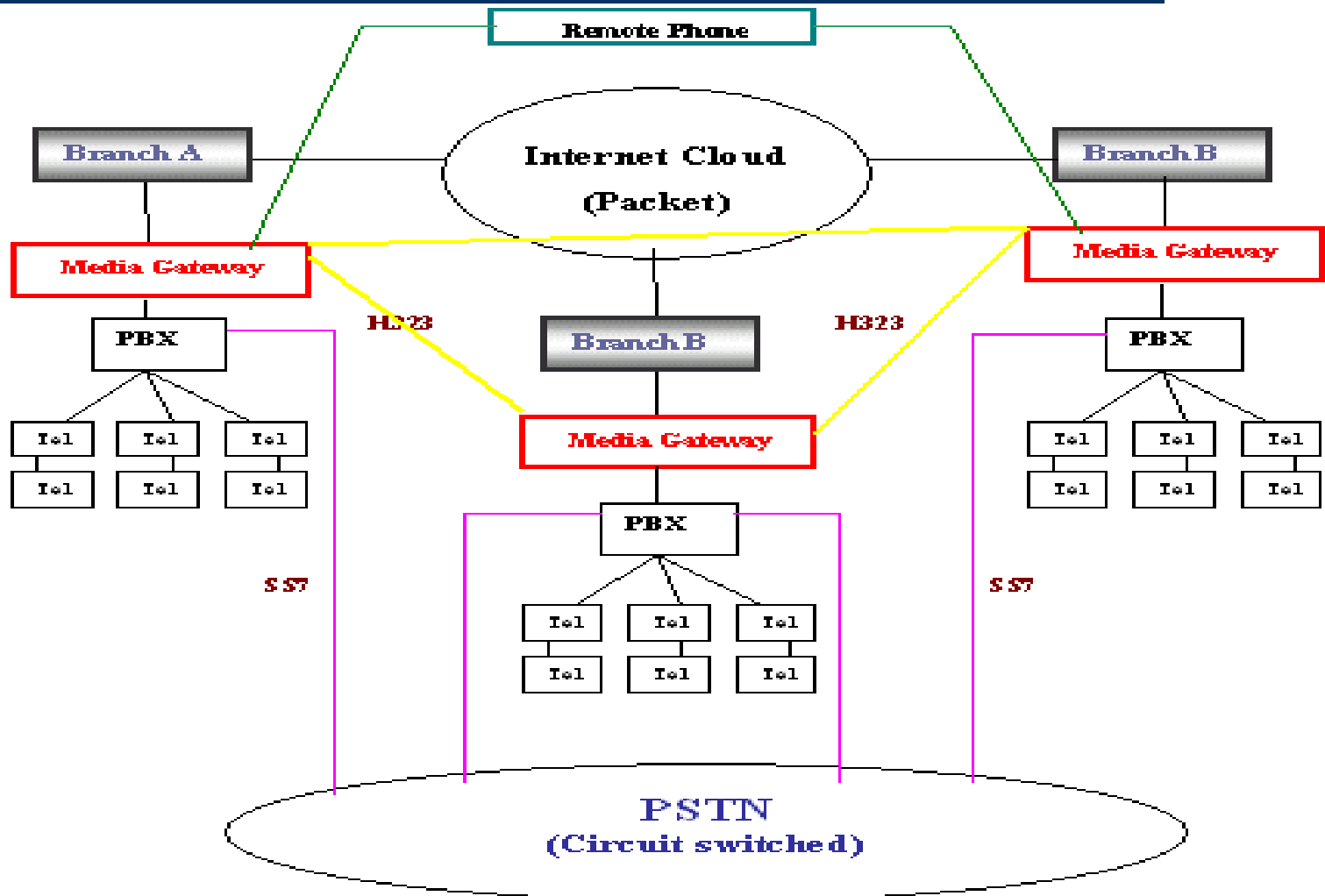
Enterprise Solution

- Branch Interlink
- Trunk Call Bypass

Benefits

- Economy of Scale
- Consolidate Network Infrastructure and Facilities

Network Layout



Technology Challenges

Network Architecture

- Transparency
- Bandwidth Efficiency
- Real Time Transport
- QoS

Technology Challenges

Hardware Equipment

(Media and Signaling Gateway)

- Reliability
- Scalability
- Interoperability
- Availability
- Performance (DSP)
- Intelligence

Technology Challenges

Software

- Network Management
- Provide Processing Functionality
 - i. Call
 - ii. Voice
 - iii. Packet
- Billing and Accounting

Protocol Issue

Protocols

1. H323 (ITU-T)
2. SIP (IETF)
3. MGCP
4. SIGTRAN

Signaling

- System Signaling No.7 (SS7)

Solutions

- Packet Loss (max 10%): QoS in Network
- Delay/Latency: Packet Priority, High Speed Network
- Jitter: Dynamic Buffer
- Echo Cancellation (50ms): Software
- Silence Suppression (50%): Noise Detector
- Audio Compression: G711, G723, G729a etc
- Fax Capability: Tone Detector

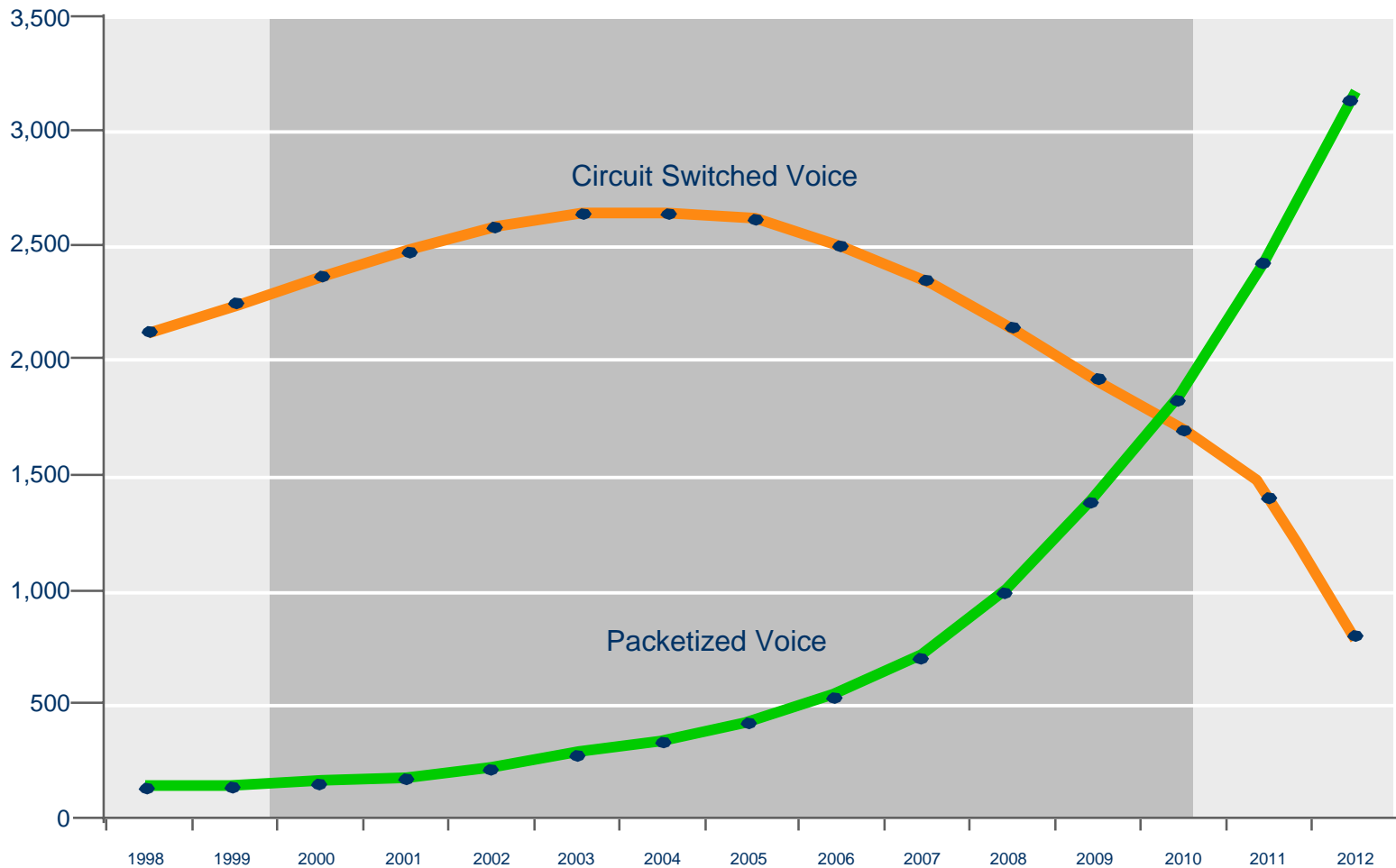


VoIP and 3rd Generation System

- Packet Based Technology
- Broadband Communications
- Licensing
- 3G/IP Equipment instead of SS7/IP
- iPBX



Circuit to Packet Evolution



Source:
Alcatel
2000



End of Presentation

Thank You