



100101101011000
10101101010

10010110101100010100110101

IP Telephony Services: What is Actually Available Today?

Alistair Woodman

Director of Marketing Packet Telephony Group,
Cisco Systems



Agenda

- **Why Packet Telephony?**
- **Market Opportunity**
- **Who Is Doing It and Why?**
- **Overview of Available Solutions**

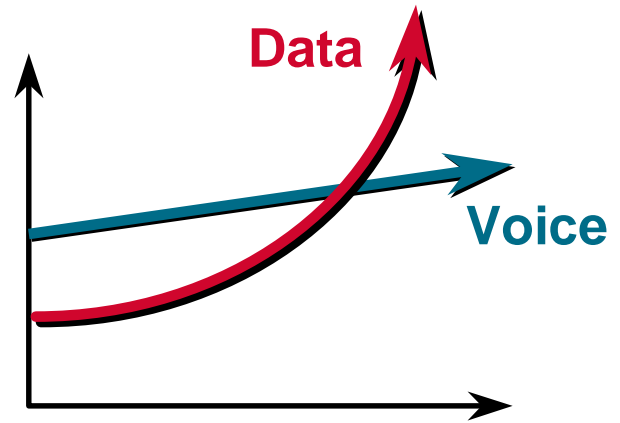


Why Packet Telephony?

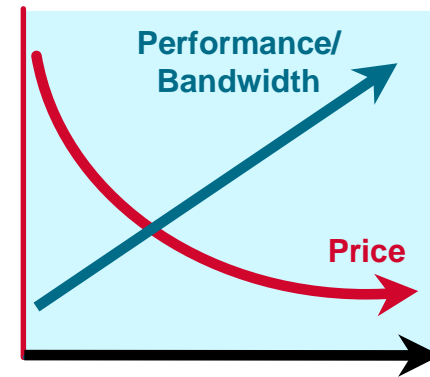
(a.k.a. Voice over IP, packet voice,
voice/data convergence,
Voice over ATM/Frame Relay/DSL/cable, ...)



Major Market Forces



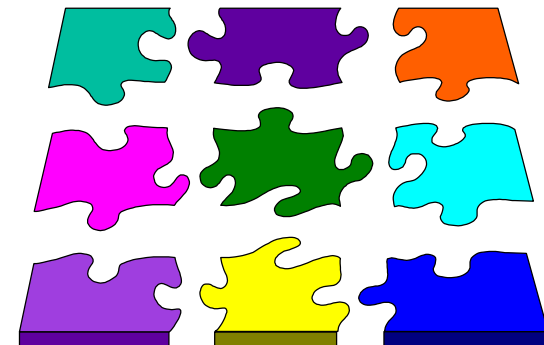
Internet Explosion



Technology

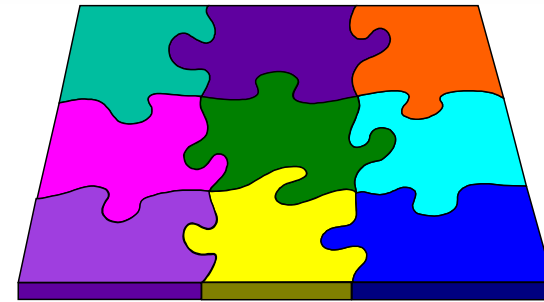
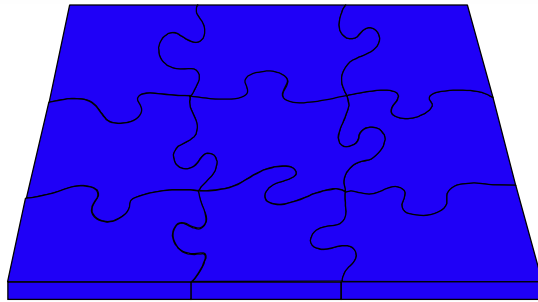


Global Deregulation



Open Standards

Open Standards Change the Model



Traditional Telephony

- Proprietary
- Closed
- Inflexible
- Monolithic
- Extremely expensive
- Old world speed

Packet Telephony

- Public standards
- Open systems
- Flexible
- Teams & partners
- Inexpensive
- Internet time

Market Transition = Opportunity

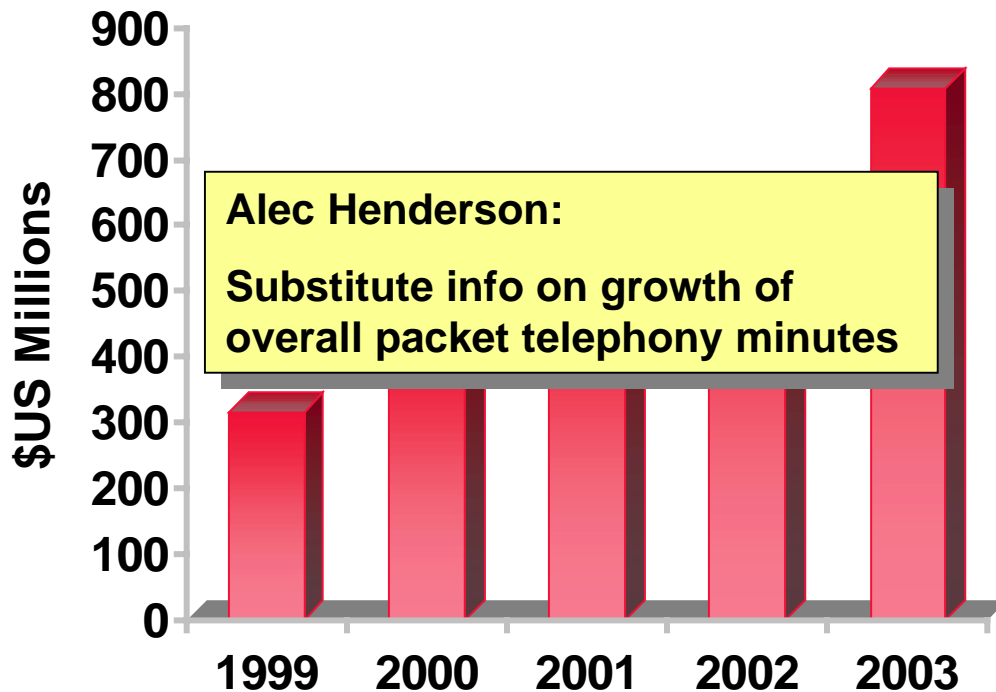
A man in a white shirt and tie is holding a large orange pipe over a colorful landscape. The landscape is divided into sections of blue, green, and yellow, with a blue sky above. The man is standing on a blue section, and the pipe is arched over the other sections.

Market Opportunity



U.S. ISP Infrastructure Market Revenue 1999-2003

US ISP Infrastructure Market Revenue
IP Telephony Gateways and Gatekeepers



“ Spending on ASPs (infrastructure) is expected to grow from less than \$1B today (in July 2000) to \$11.3 in 2003. ”

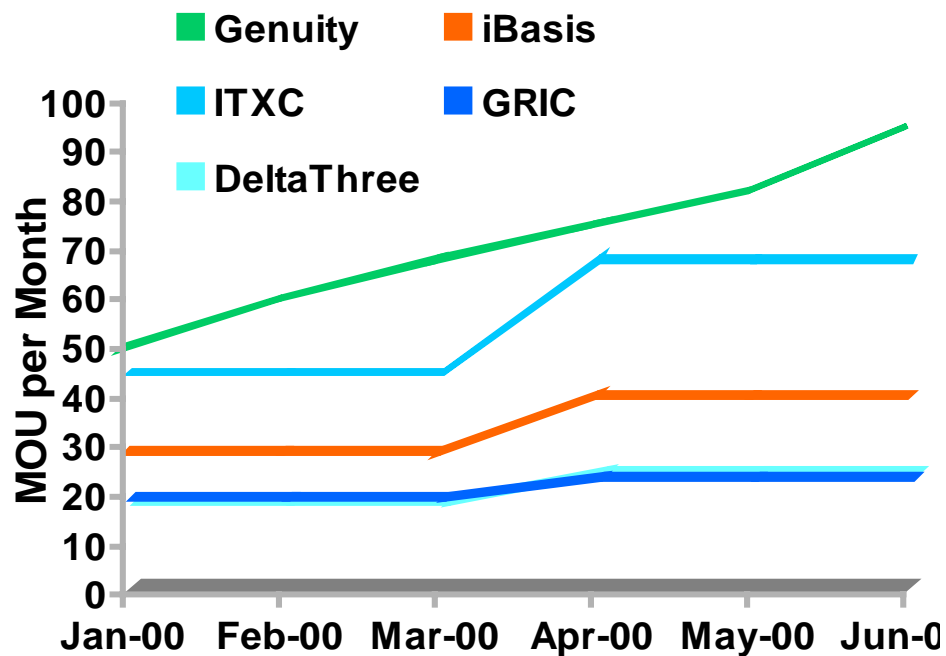
Forrester Research,
July 2000

Probe Research, Inc., IIM 1999, Vol 1. No. 12

Measures of Success

Minutes of Use

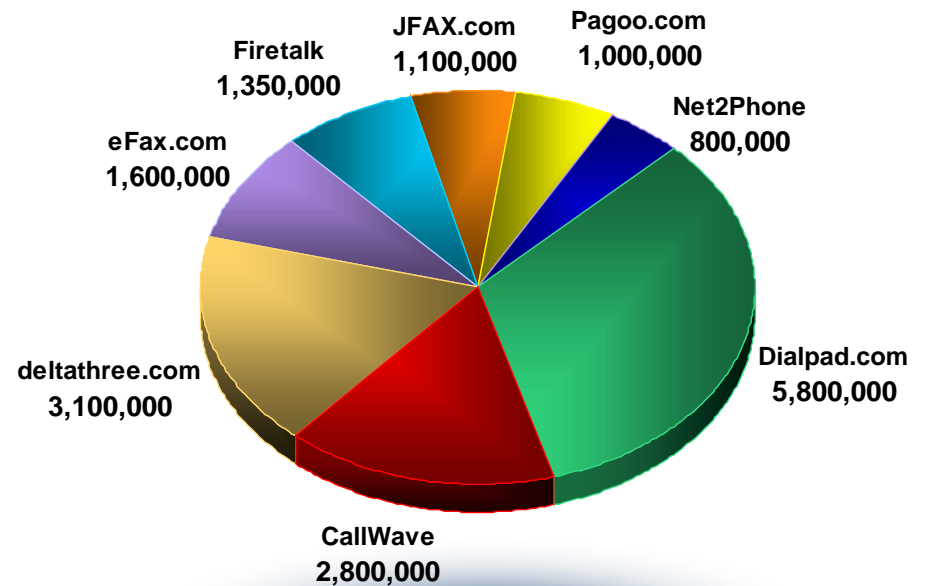
VoIP Wholesalers



Source: Service Provider Press Releases and Earnings Reports

Subscribers

Q2 2000 Subscriber Base



Source: Portal Research, Voice over Packet Network, Vol 1, No 5 May 2000, Copyright Probe Research

The Opportunity for the SP

- **Penetrate new markets**—Pre-paid calling service, WEB-hosted calling services
- **Maximize available market and increase revenue**—by interconnecting with major PSTN carriers to get minutes, compete aggressively for international voice market share
- **Reduce costs**—with competitive infrastructure costs for transport and access to lowest termination prices for international calls
- **Create attractive services**—build service with international reach by interconnecting with the world wide network of Cisco VoIP wholesalers, peers and clearinghouses
- **Minimize risk**—leverage existing infrastructure, reliability, global reach

A man in a white shirt and red tie is holding a large orange pipe over a colorful landscape. The landscape is divided into blue, green, and yellow sections. The man is standing on a yellow section, holding the pipe over a blue section. The pipe is curved and extends across the top of the image.

Who's Doing It and Why?

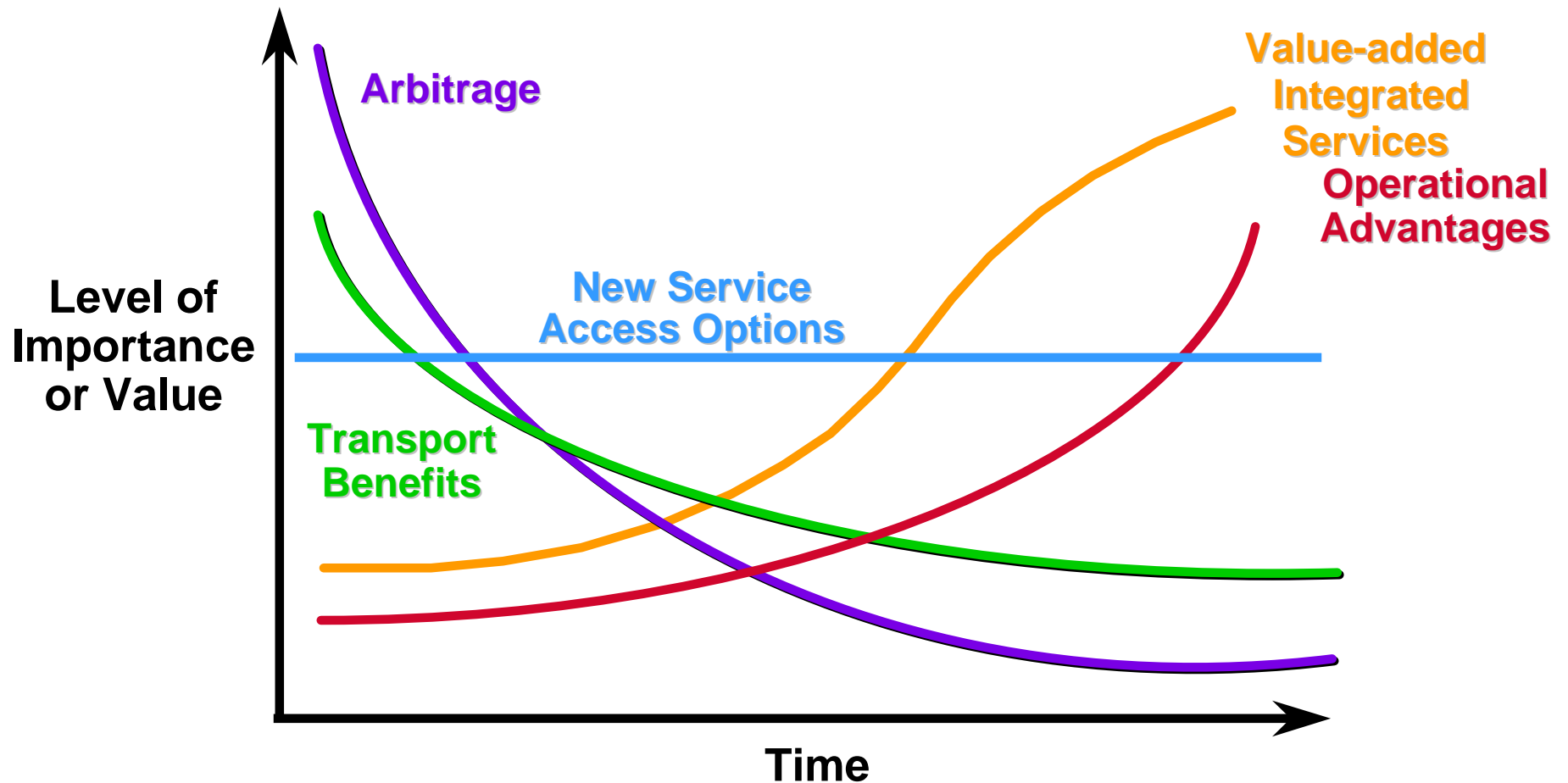


Both New and Established Carriers



Plus all 4 alternate carriers in China

The Packet Telephony Drivers



Wholesale Business Models

- **Aggregation**

Collect traffic from multiple originating providers, aggregate, and deliver to termination providers you select

Who's doing it: greenfields, resellers, dial-around/callback operators, international ISPs

- **Hosting**

Host subscriber services, such as ASPs requiring call termination to PSTN for calls originating on Internet

Who's doing it: ISPs, high-quality IP networks, hosting specialists, WWW site designers

A man in a white shirt and tie is holding a large orange pipe over a colorful landscape. The landscape is divided into blue, green, and yellow sections. The pipe is curved over the landscape.

Overview of Available Solutions

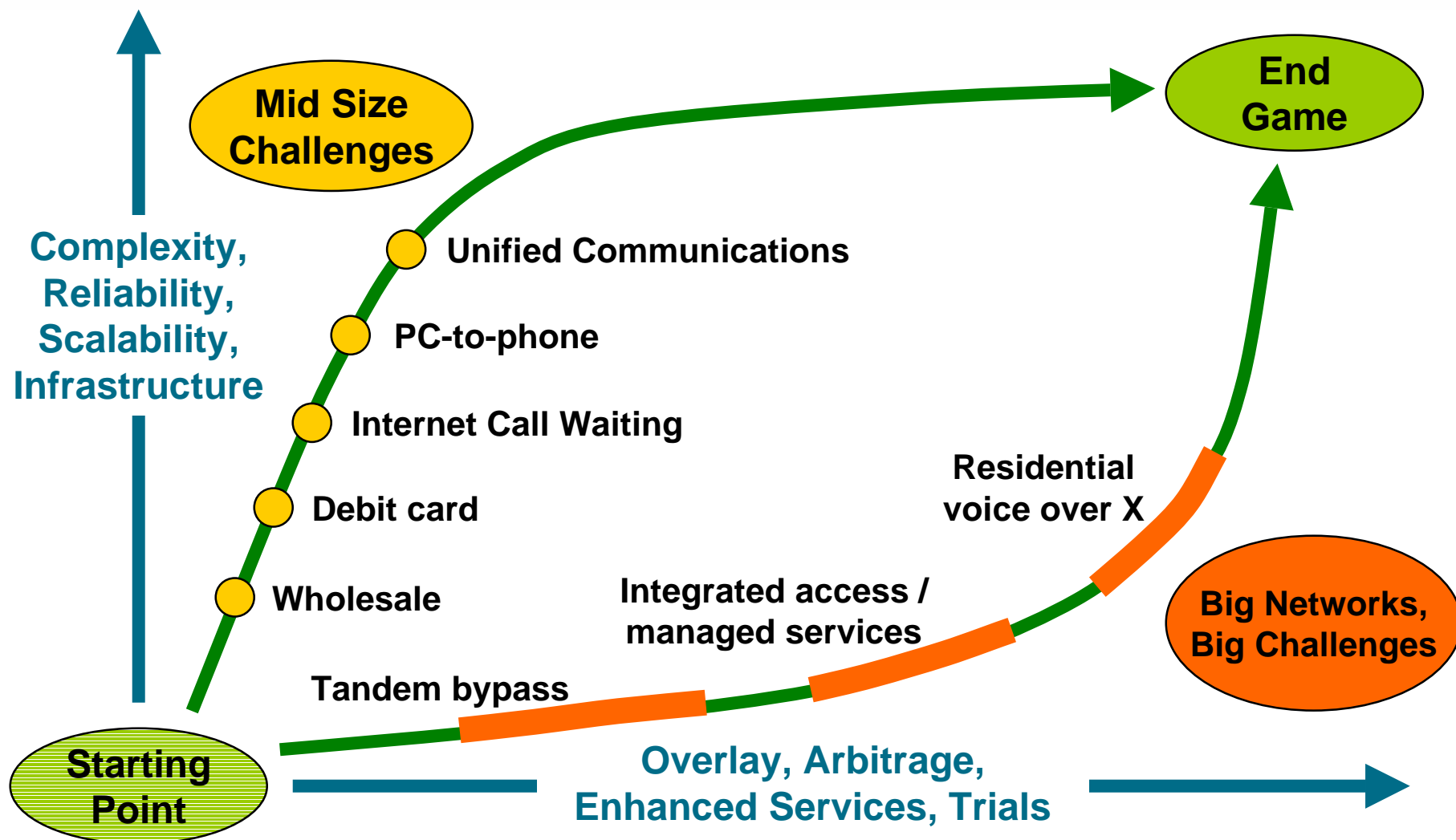


Course Number

100082001101

© 1999, Cisco Systems, Inc.

Different Opportunities to Insert



Aggregation and Resale VoIP = Least Cost Route

Caller Pays
\$\$\$\$\$\$

Keeps \$

Keeps \$\$

Keeps \$\$\$



Subscriber

IXC



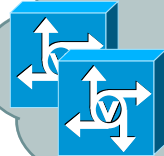
TDM Wholesaler



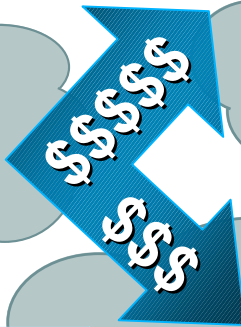
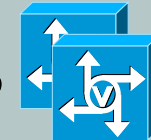
PTT



ITSP A



ITSP B



Caller Pays
\$\$\$\$\$

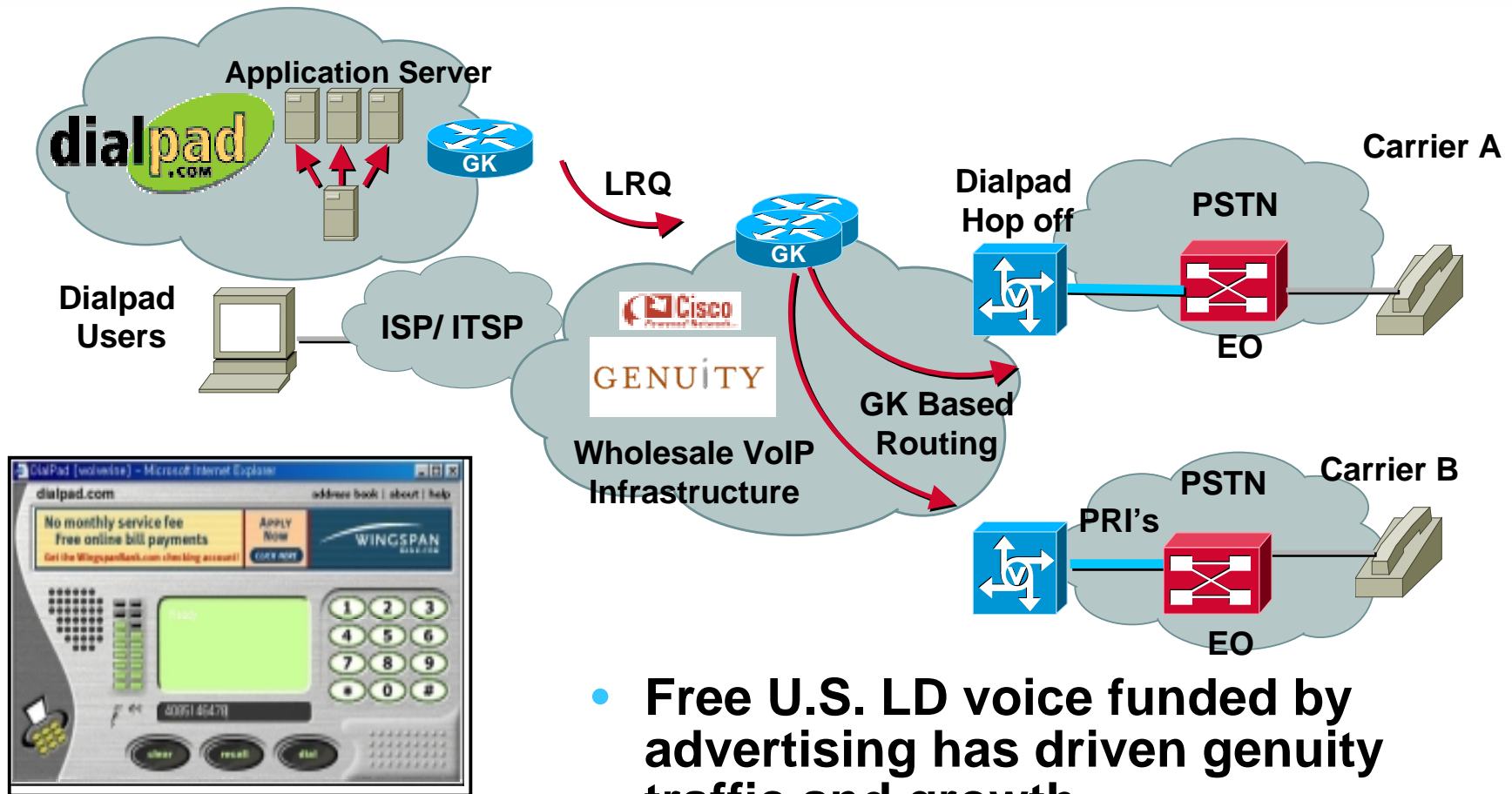
Keeps \$\$

Keeps \$

Keeps \$

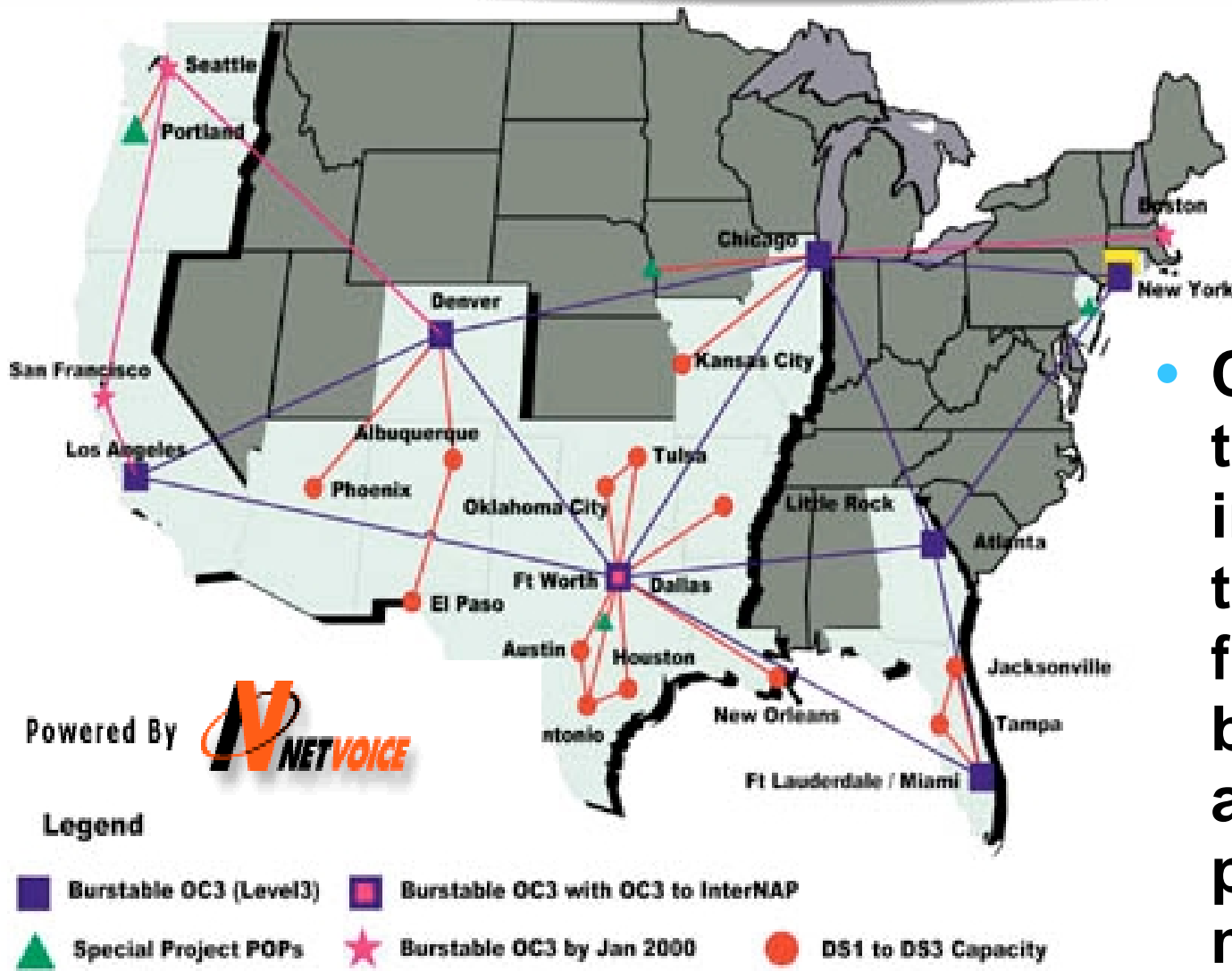
Keeps \$

Case Study #1—Genuity Hosting for Dialpad.com



- Free U.S. LD voice funded by advertising has driven genuity traffic and growth
- Announced as CPN in June 2000

Case Study #2—NetVoice Aggregation and Resale



- Collecting traffic for international transport from IXCs to build traffic, adding pre-paid, UC for margins

Voice Portals— Ideal Target for ISPs



- Rapidly building subscriber bases with free services, viral marketing



- Business models include advertising-supported free calling, usually with additional paid services like voicemail, follow-me



- ASPs are essentially marketing organizations, but will build own solutions in absence of vendor-provided solution; several of these are application providers to voice-enable other web sites

- ISPs provide WEB hosting and gateway to PSTN, ASP pays wholesaler a flat rate per minute

HearMe

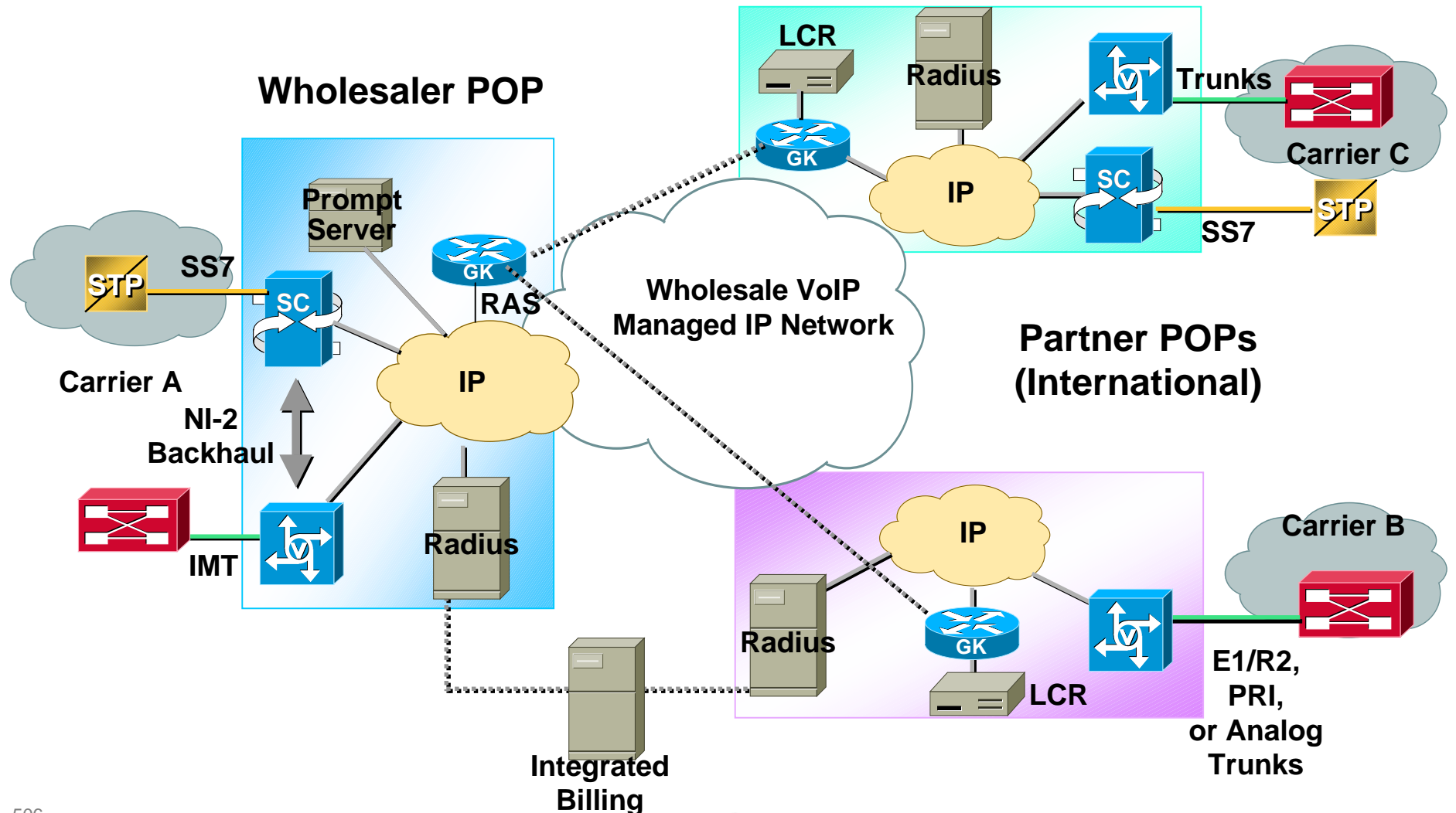
Live Voice and Internet Telephony Products



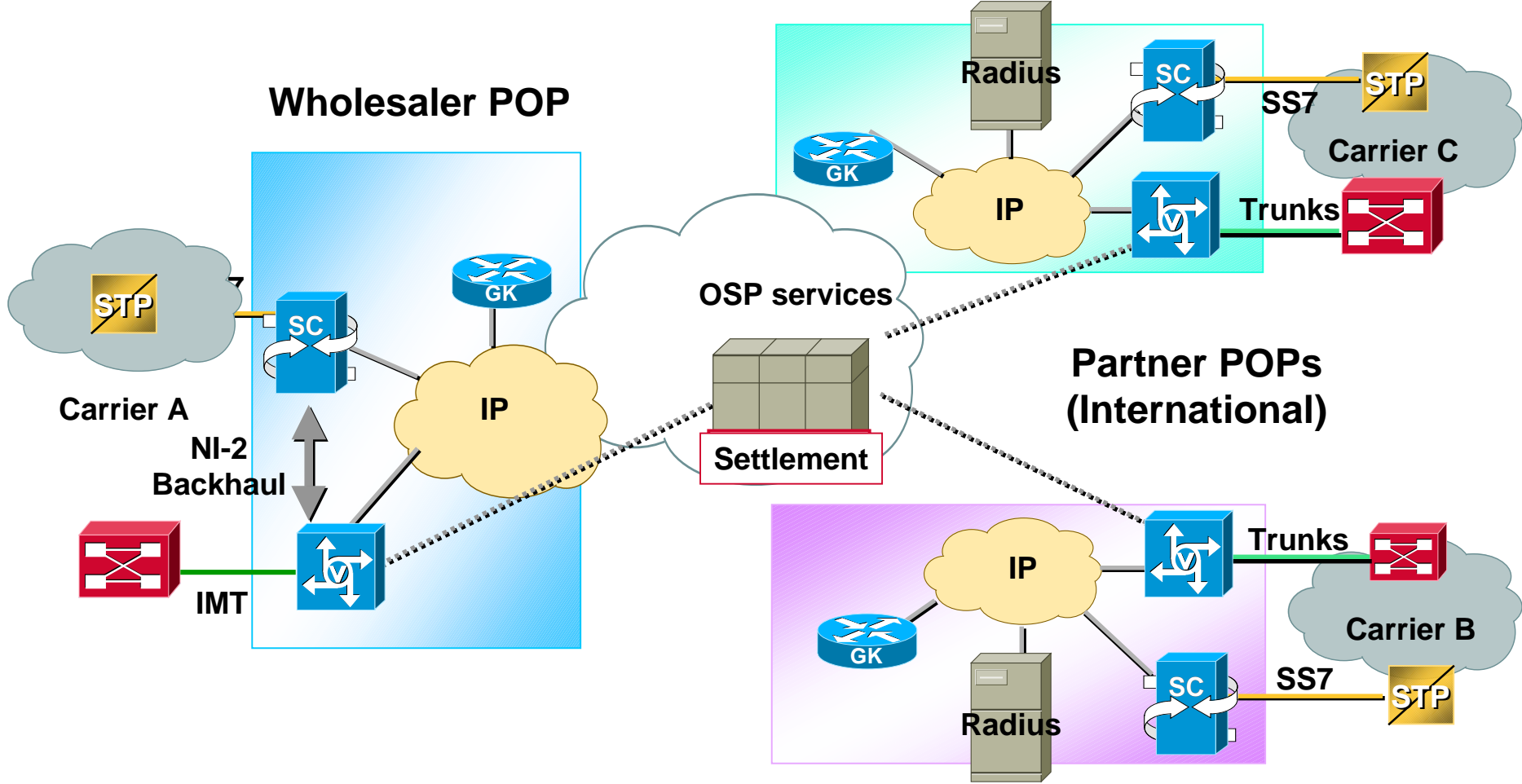
www.cisco.com



Carrier Interconnect Trusted Peers



Carrier Interconnect Open OSP Clearinghouse



CISCO SYSTEMS



EMPOWERING THE
INTERNET GENERATIONSM