Cisco Systems

connections 2000

Changing Business Models, Panel Discussion

**Pathnet
Concentric
ARC**

Agenda

- "Emerging Packet Based Inter-Exchange Carrier" Definition
- Services offered- Changing the Wholesale Business
- Economics of the Model
- Essential Architecture – Cisco Powered Network
- Pathnet Partnership benefits

Pathnet's New World

The first national *Wholesale Convergent Communications Services Provider* serving high growth segments in underserved markets

- **Building Backbone Since 1995**
- **Target market segment ISP wanting to be to CLEC's and CLEC wanting Internet services**
- **Enables partner to avoid CLEC regulator hurdles**
- **Why Pathnet….why now?**
  - **Customers need critical mass in customers, breadth of product and geographic reach**
  - **Customers need a national alternative to traditional suppliers and "doing it yourself"**

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Pathnet Partnership benefits

-Extend your Footprint
-Reduce your Capital/Recurring Cost
-Add Convergent Services
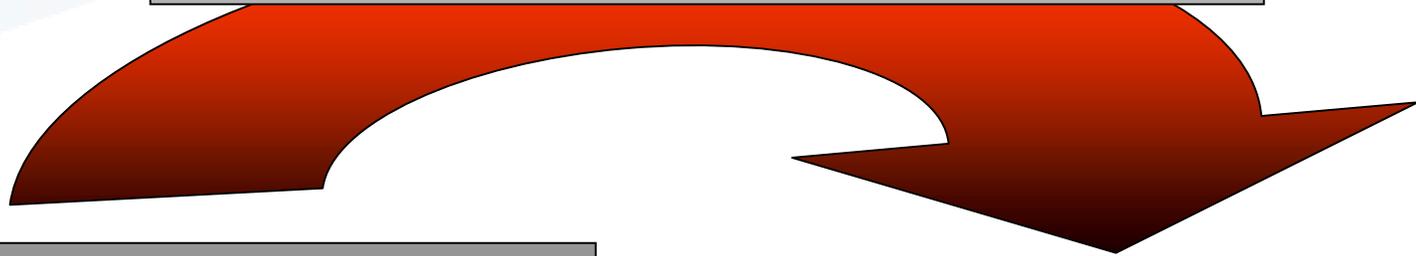
No longer a required focus

Reduce Telecommunication reoccurring expenses

Acquiring Direct Local Loop Access

Getting UNE transport Access price points

Deploying a DWDM Optical Backbone Connectivity

Number Plan administration

Network surveillance

Now you can focus on:

Acquiring new customers
Adding more products/services
Reduce existing dial Pops
Rapid Increase in market coverage
Leverage lower cost backbone technology
Futures such as VOIP for Local and LD

"Packet Based Inter-Exchange Carrier"

Newton's definition: A telephone company that is allowed to provide long-distance telephone service between LATA's but not within any one LATA

A New Carrier Model Offering Local and Long Distance Packet Based Voice Call routing Services (including 911/ Operator Services, LNP, Number Administration, etc.) combined with Virtual Private Networking, Internet Access, Video Conferencing, IP Minutes of Use Exchange Access for long distance delivery, Unified Messaging and advance IN features.

Products
Wholesale Products Value Stack

Retail

Convergent Services
(xDSL, VOIP, Packet Transport)

Local Access (Local Loops,
Switched Access, Dial Internet "PRI")

Long-haul Private Line

| Conduit | Dark Fiber |

Construction Services

Rights of Way

•Virtual Access
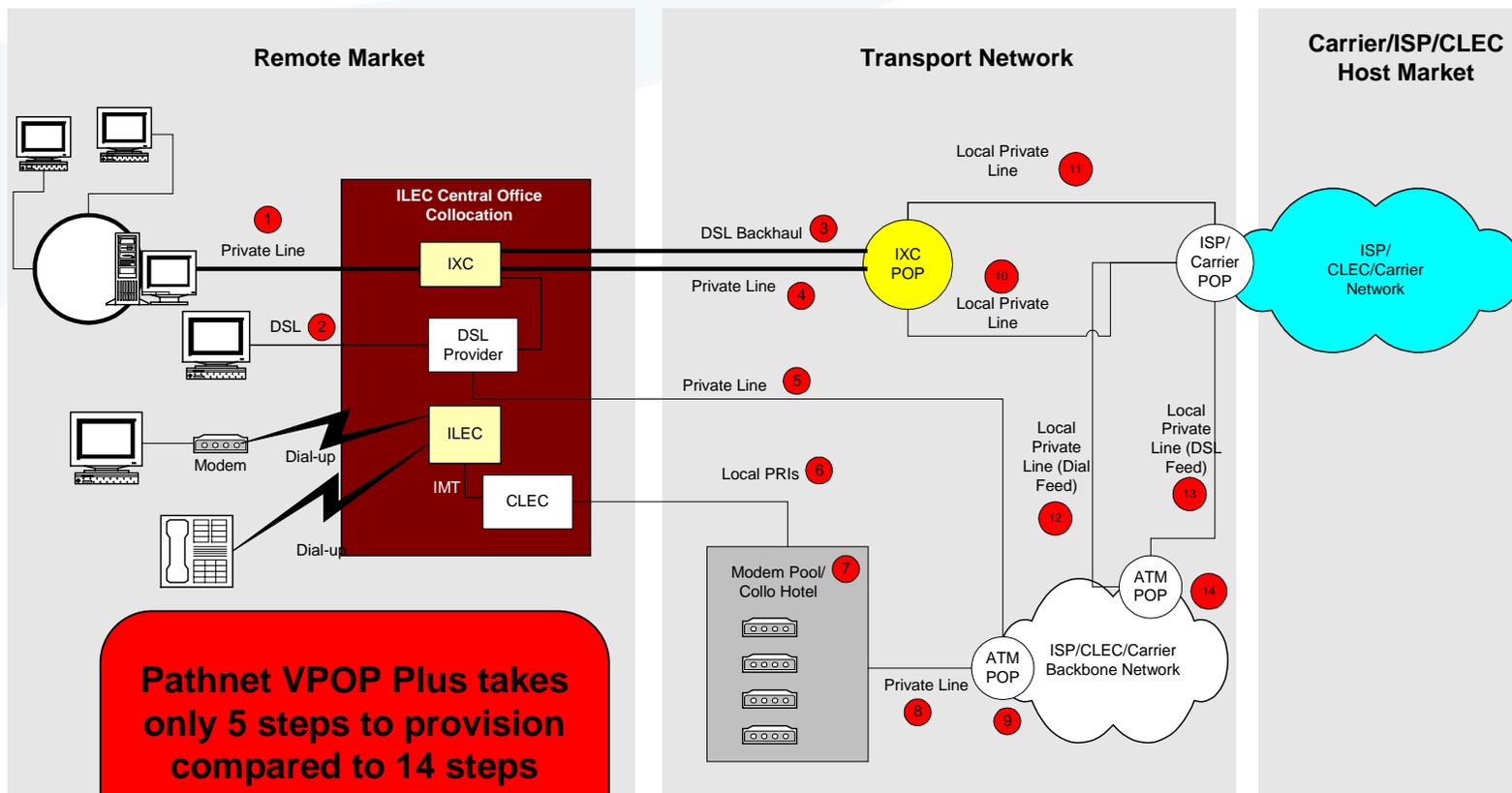•Virtual Backbone
•Voice over IP

Pathnet
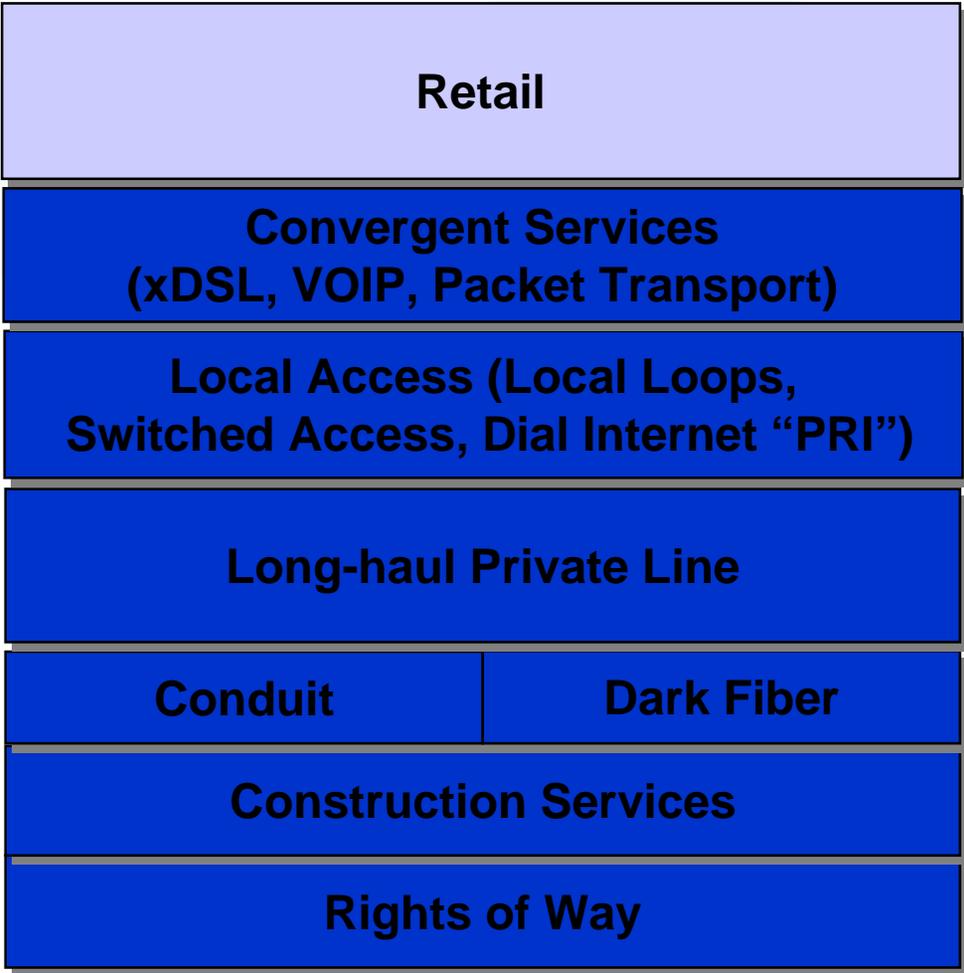
Traditional
DLEC Products

Traditional
CLEC Products

Traditional Long
Haul Products

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Old World Alternative

Traditional Network Service Architecture

Pathnet VPOP Plus takes only 5 steps to provision compared to 14 steps with "Old World" providers!

VPOP Plus is Simple and Easy to Provision…

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CISCO SYSTEMS
EMPOWERING THE
INTERNET GENERATION

Pathnet Network

Carrier/ISP
Existing POP
Mux

Server
Voice switch
NAS

Pathnet
SuperPOP

City A — End User Premise

City B — End User Premise

2 Virtual Node to connect to a city

City C

1 DS-3 or OC-x virtual backbone connection. Dial modem, dedicated TDM and xDSL multiplexed over common connection

DS-1 and DS-3 dedicated connection

xDSL dedicated connection

Switched modem access

End User Premise

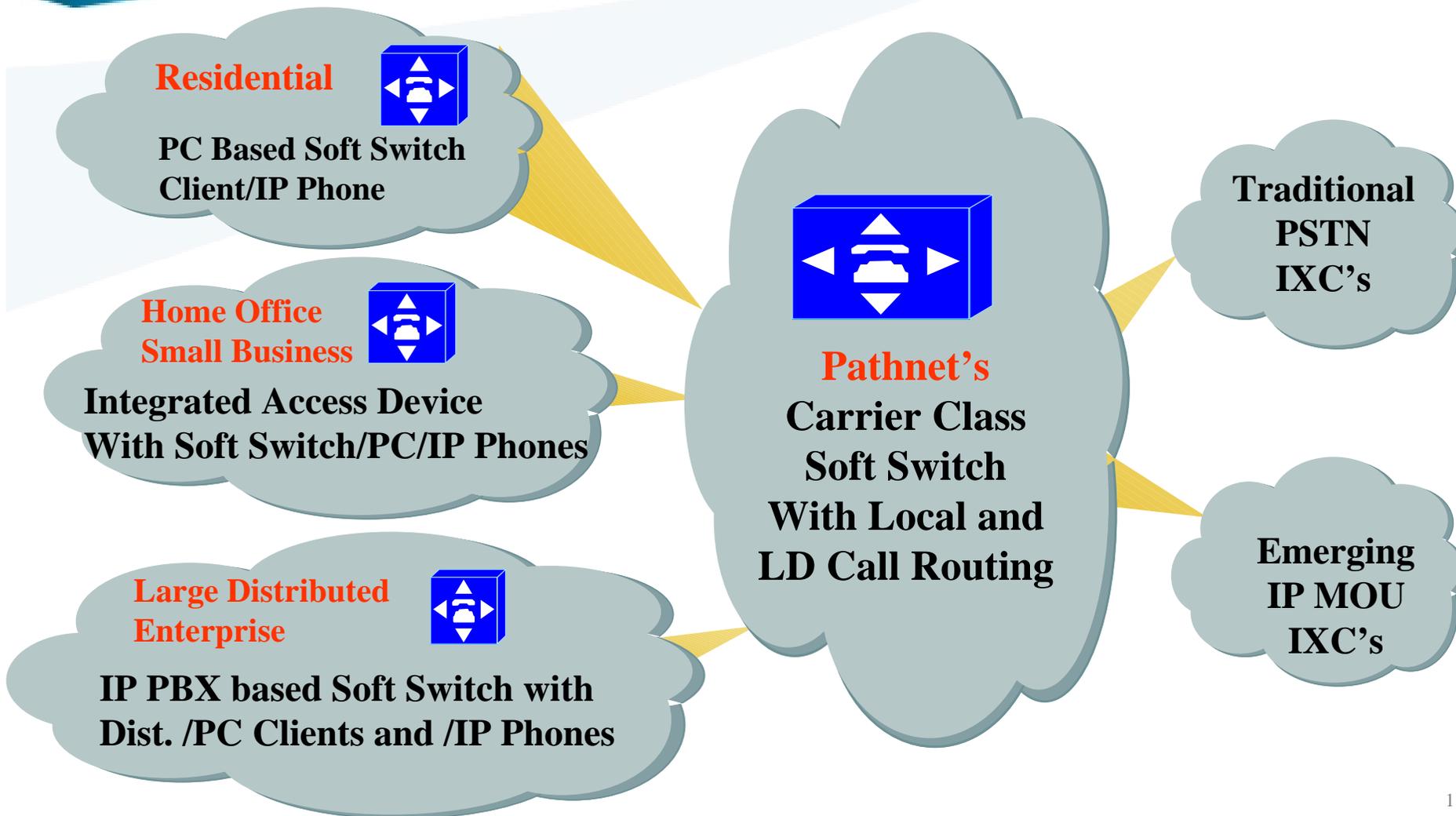End User Premise

End User Premise

3   **4**   **5**

Leasing the infrastructure to support dial, DSL and dedicated access takes only 5 steps with VPOP Plus vs. 14 with traditional providers

End user access connections

Distributed Soft Switches

(The "PSTN world" is now in software)

Residential

PC Based Soft Switch
Client/IP Phone

**Home Office
Small Business**

Integrated Access Device
With Soft Switch/PC/IP Phones

**Large Distributed
Enterprise**

IP PBX based Soft Switch with
Dist. /PC Clients and /IP Phones

Pathnet's
Carrier Class
Soft Switch
With Local and
LD Call Routing

Traditional
PSTN
IXC's

Emerging
IP MOU
IXC's

Economics of the Model

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- **Wholesale within Wholesale**

- Build versus own- none of the larger ISP's own their Own backbone or local facilities (wholesale lives on)

- 1999 3.6 Billion in Dial Access Sales with a CAGR 30% to reach 13.6 Billion in five years*

- The Peak in growth is still on the horizon

- Wholesale aspects- price reduction in monthly fees offset by technology (Soft Switch)

- Soft Switch IRR (2000 IRR estimates 250% versus 90%)*

- Traditional cost per port on Class Five Switch ($238) versus Soft Switch ($85)*

*Source – Morgan Stanley Dean Witter

Take a quick look at the numbers...

VPOP Plus PRI Dial Access vs. Alternatives

Cities served	Subscribers nationwide	PRI's required	Back-haul $/month per subscriber	Organic expansion $/month per subscriber	VPOP Plus $/month per subscriber	Savings
10	2,000	12	$ 10.25	$ 43.96	$ 6.60	33 %
10	5,000	30	$ 10.25	$ 20.38	$ 5.38	45 %
10	10,000	60	$ 10.25	$ 12.52	$ 4.18	57 %
10	20,000	119	$ 10.25	$ 8.59	$ 4.01	52 %
10	50,000	298	$ 10.25	$ 7.28	$ 3.79	39 %

VPOP Plus PRI Delivery Option Produces savings of up to 50%

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CISCO SYSTEMS
EMPOWERING THE
INTERNET GENERATION

•**Distributed Soft Switch**

• **QOS access ATM**

•**Transport QOS-DWDM, MPLS**

• **Facility Collocations**

•**Packet Switching core**

•**Migration from PRI to VOIP**

•**Integrated operational support**

Our Optical Core- Will make the difference

Future Wireless

LNP

UNE

PRI

VPN

Optical Core

Aggregation

VOIP

Wholesale Partner

DSL

Packet Switching

LOCAL/LD

911

Edge Services

Microwave

USER Aggregation

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