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October 23, 2002

VIA ELECTRONIC SUBMISSION

Ms. Marlene H. Dortch
Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: **Ex Parte Communication**
CC Docket No. 02-33
CS Docket No. 02-52

Dear Ms. Dortch:

On October 22, 2002, Donald E. Cain, Jeffrey A. Brueggeman, James K. Smith, Ahmad Ansari, Cliff Yackle and myself on behalf of SBC Communications, Inc. met with Jeff Goldthorp, Richard Hovey, and Behzad Ghaffari of the Office of Engineering and Technology. The purpose of our meeting was to discuss technical issues addressing broadband ISP access for wireline and cable networks. The attached presentation formed the basis for our discussion.

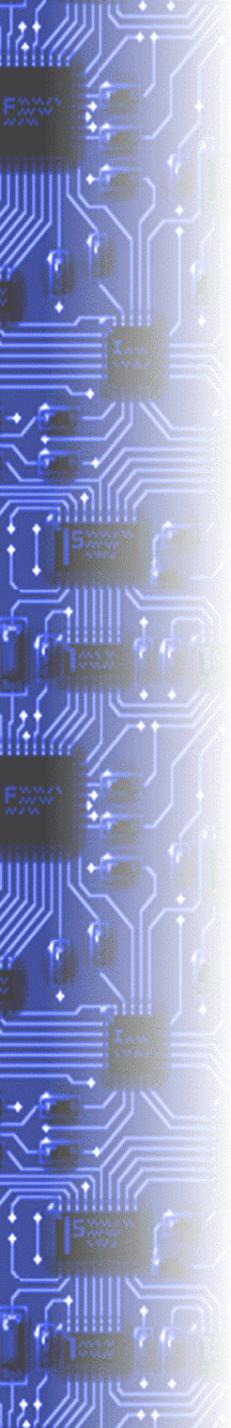
Pursuant to Section 1.1206(b) of the Commission's rules, this letter and the attached presentation are being electronically filed in each of the proceedings identified above.

Please call me if you have any questions regarding this matter.

Sincerely,

A handwritten signature in blue ink that reads "Jonathan J. Boynton". The signature is written in a cursive style with a large, looped initial "J" and a distinct "B".

Attachment



Multiple ISP Access to Cable and Wireline Broadband Networks

Technical Analysis

Ahmad Ansari, Ph.D.
Lead Member of Technical Staff

Cliff Yackle
Lead Member of Technical Staff

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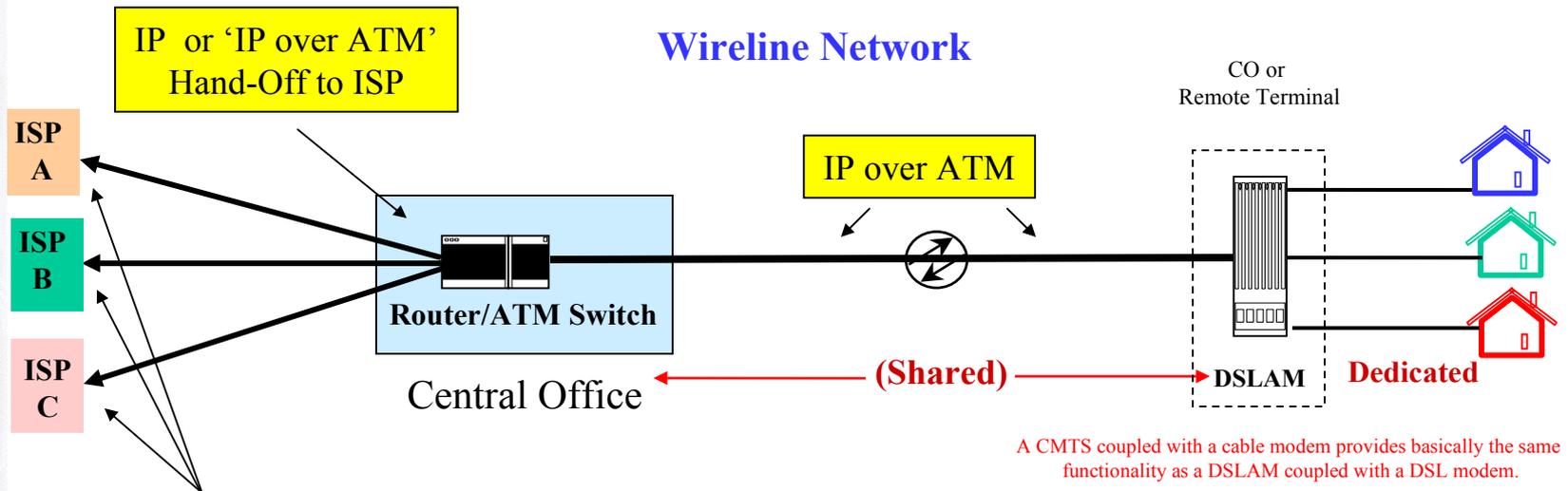
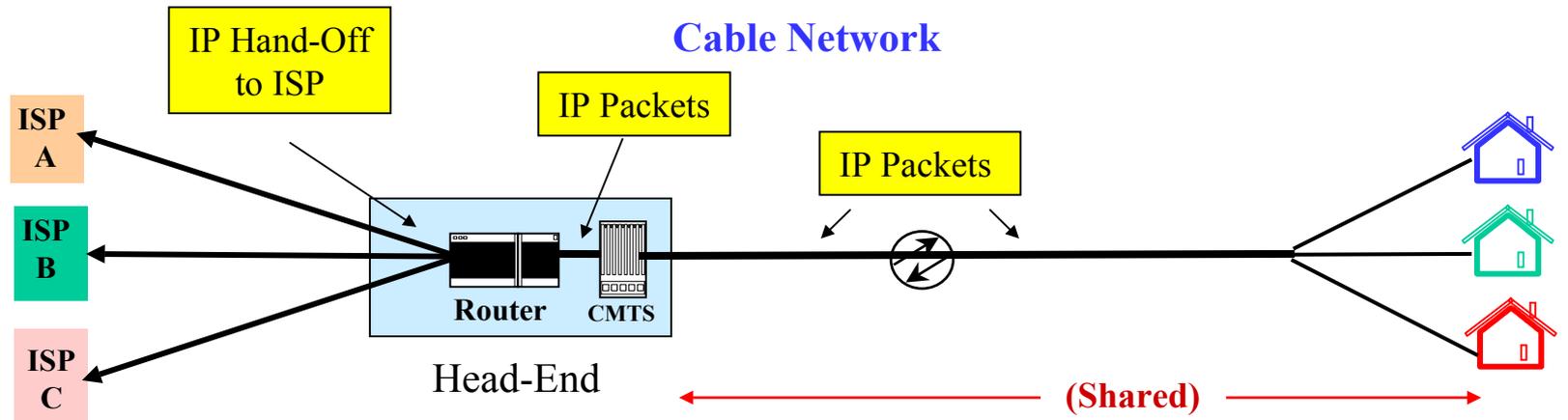


Overview

There are no technical or operational differences between wireline and cable networks that justify disparate ISP access requirements:

- Both are shared-packet networks
- Multiple ISP access is dependent on headend/central office configuration, not the last mile architecture
- Last mile architectures will converge with fiber closer to the home
- Routing methodologies are not unique to wireline or cable
- ISP access creates similar costs and operational issues for cable and wireline

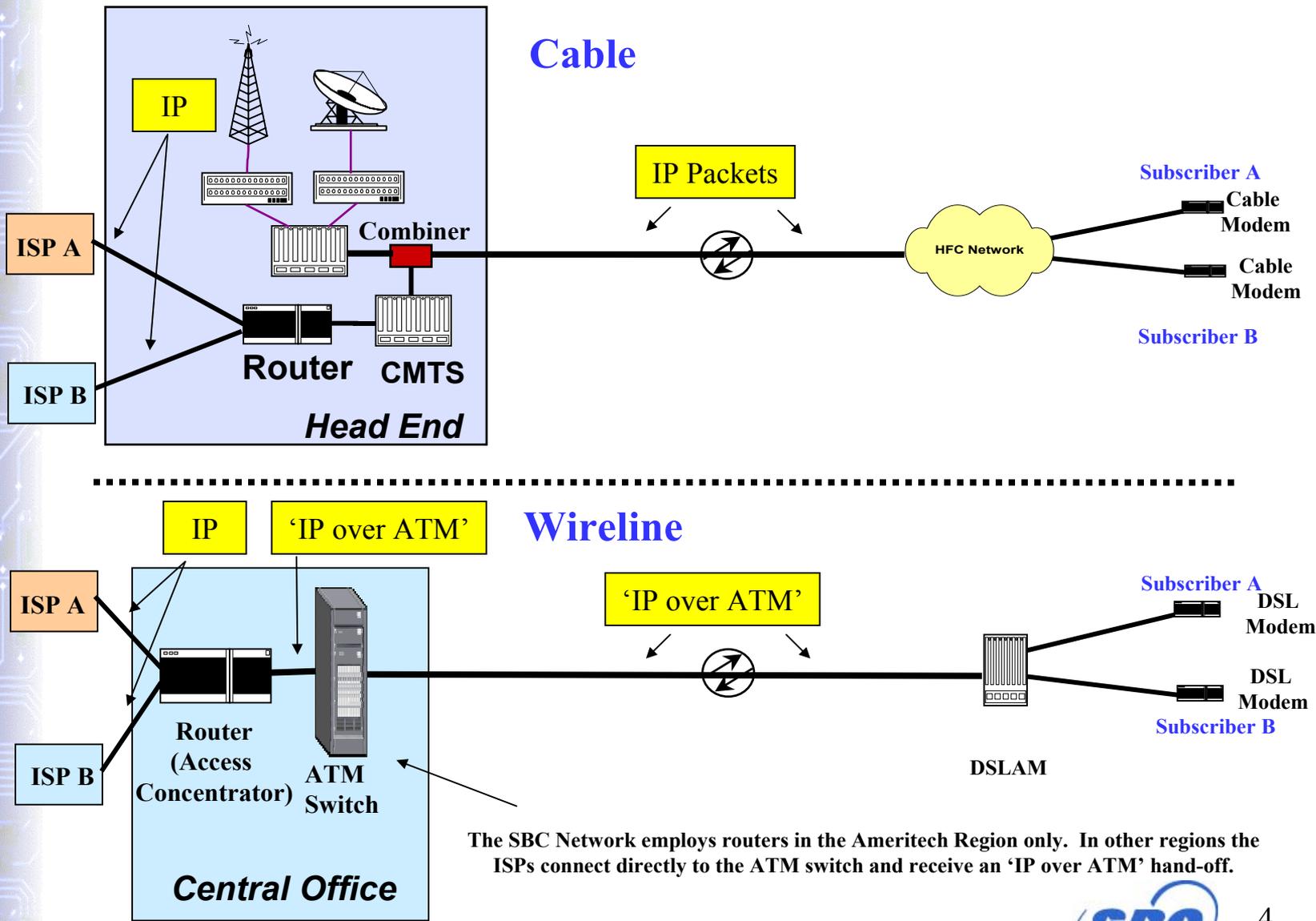
Cable & Wireline: Shared Packet Networks



If handed an 'IP over ATM' bit stream, the ISP strips off the ATM overhead - leaving it with IP only.

A CMTS coupled with a cable modem provides basically the same functionality as a DSLAM coupled with a DSL modem.

The Last Mile Architecture has No Bearing on ISP Access



The SBC Network employs routers in the Ameritech Region only. In other regions the ISPs connect directly to the ATM switch and receive an 'IP over ATM' hand-off.

Cable and Wireline Networks are Scalable

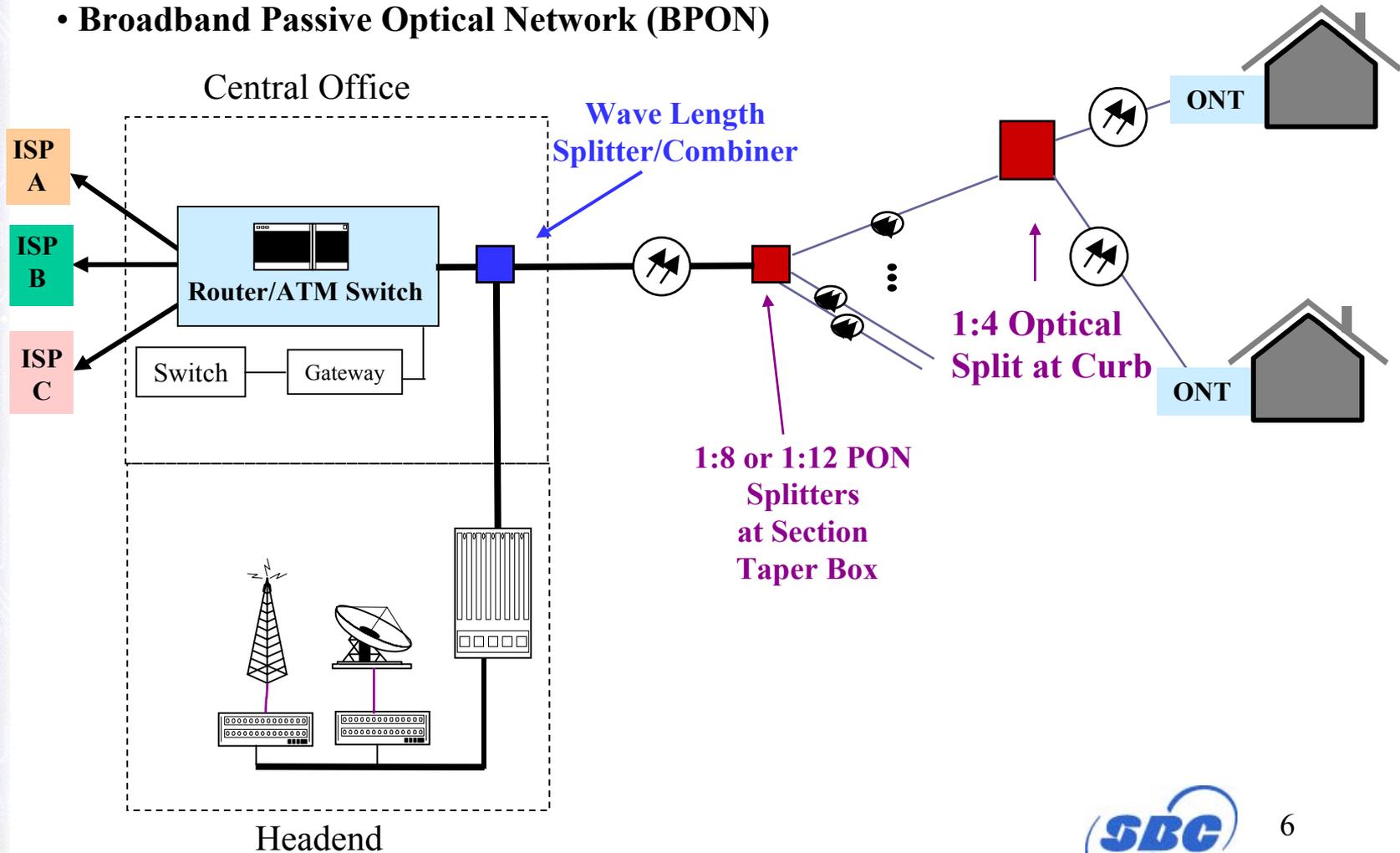
Cable and wireline networks are:

- LARGE networks
- Designed by professionals trained in the issues of performance and scalability
- Supported by world class vendors
- Supported by national and international standards
- Both are scalable at great cost and effort

Wireline and Cable are Converging Toward FTTH

--- Current Differences are Short Lived ---

- **Broadband Passive Optical Network (BPON)**



Routing Methodologies are Not Unique to Cable or Wireline

For IP-based Networks

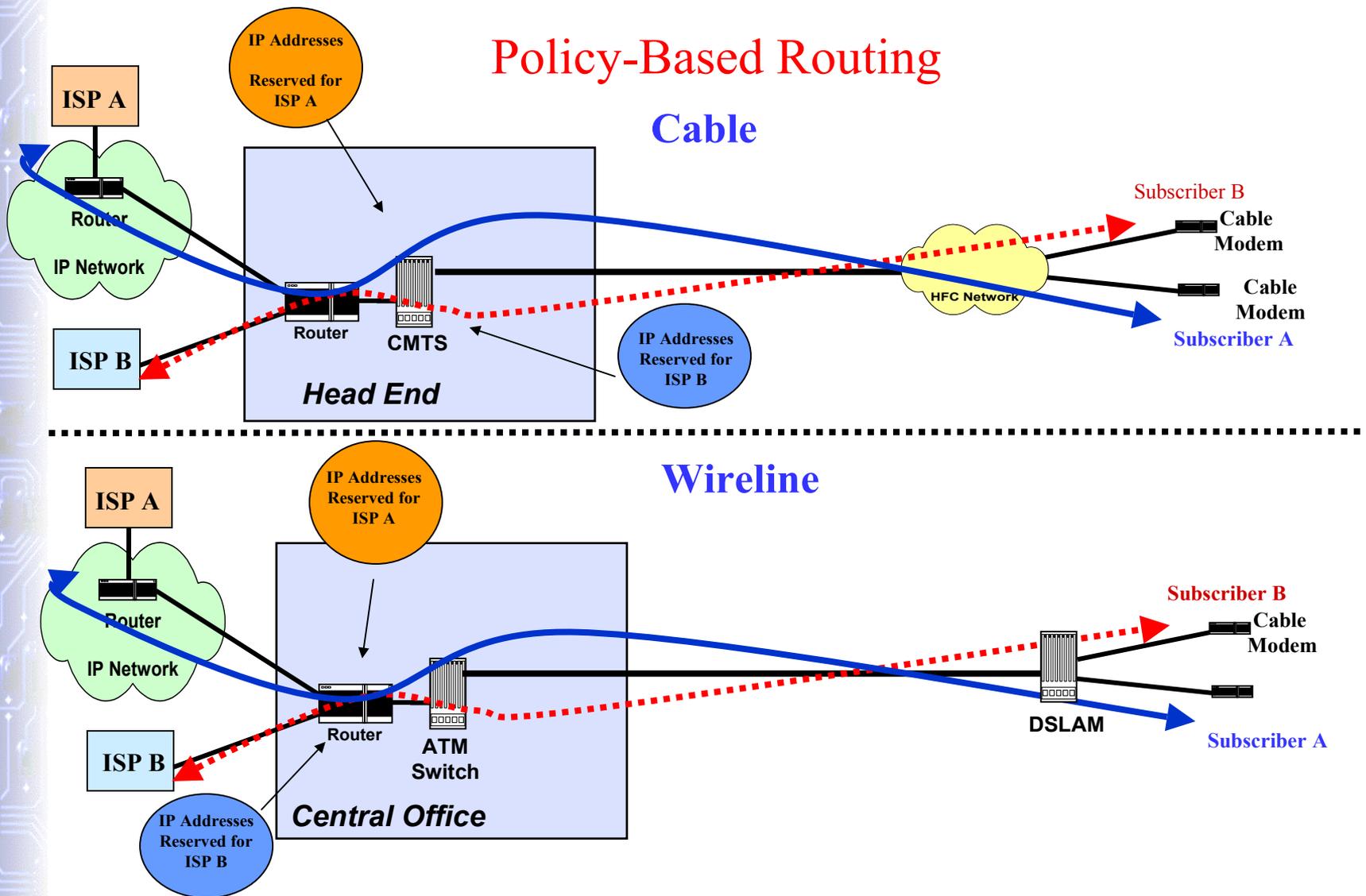
- Policy-based routing
- Tunneling

For ATM-based Networks

- Virtual path
- Virtual circuit

Cable and wireline companies are both evolving toward IP-based networks

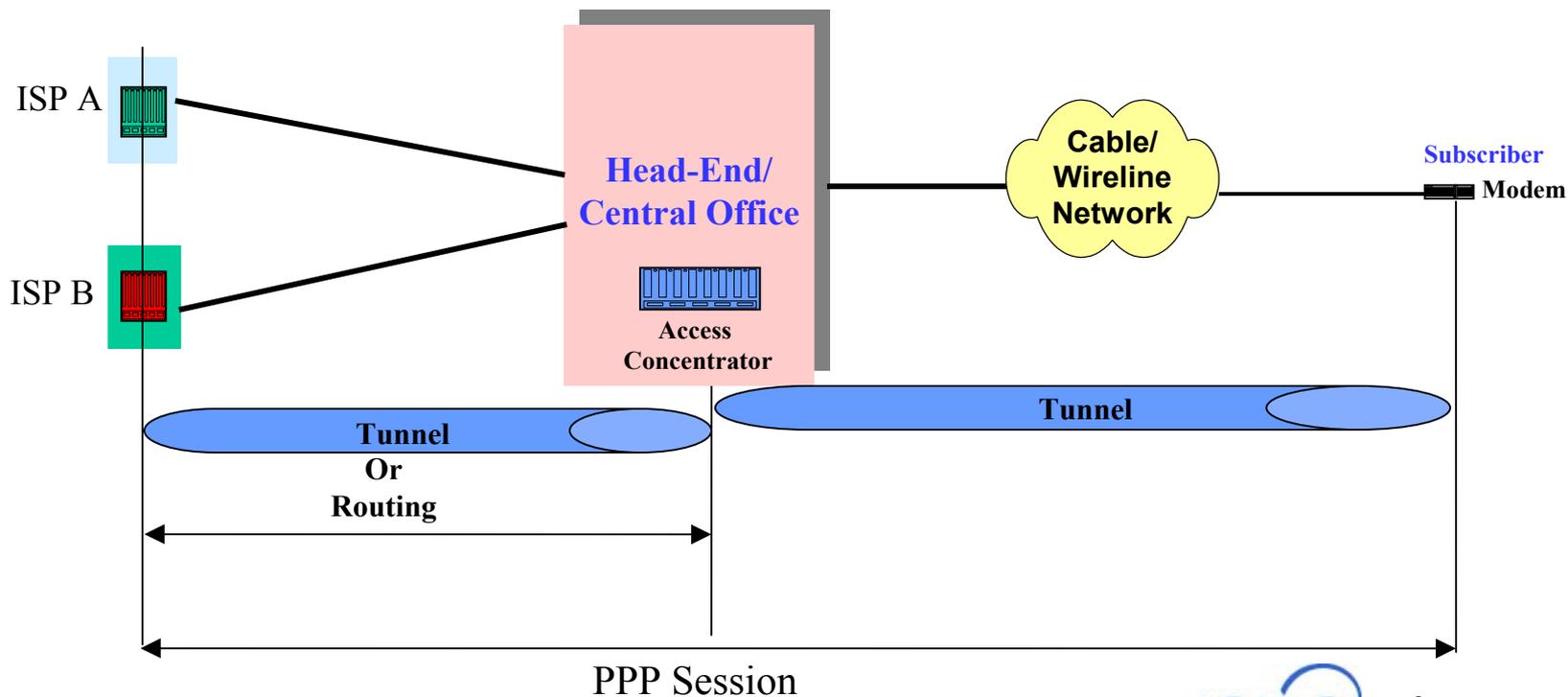
Policy-Based Routing



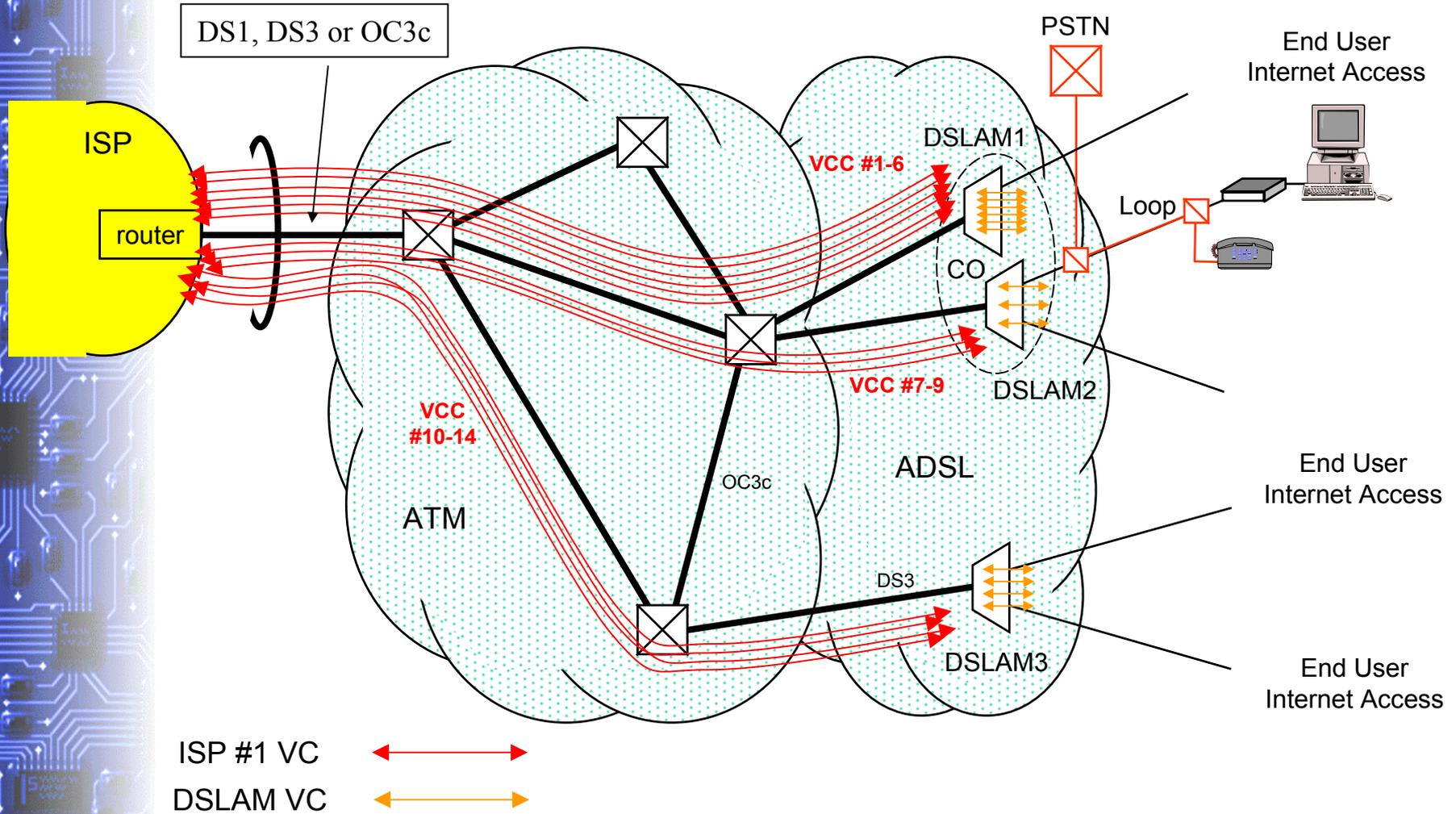
- Each pool of IP Addresses is dedicated to a specific ISP. The network operator assigns and administers the IP addresses for subscribers on behalf of all ISPs
- Each subscriber's IP address is associated with the subscriber's chosen ISP
- The CMTS/routers update routing tables with an entry associating the subscriber's IP address with a path to the designated ISP's network

Tunneling

- A Tunnel is a virtual dedicated connection between two points in a network
- It uses Point to Point Protocol (PPP) to maintain integrity of data that travels over the link, identifies and authenticate users and provisions IP addresses.

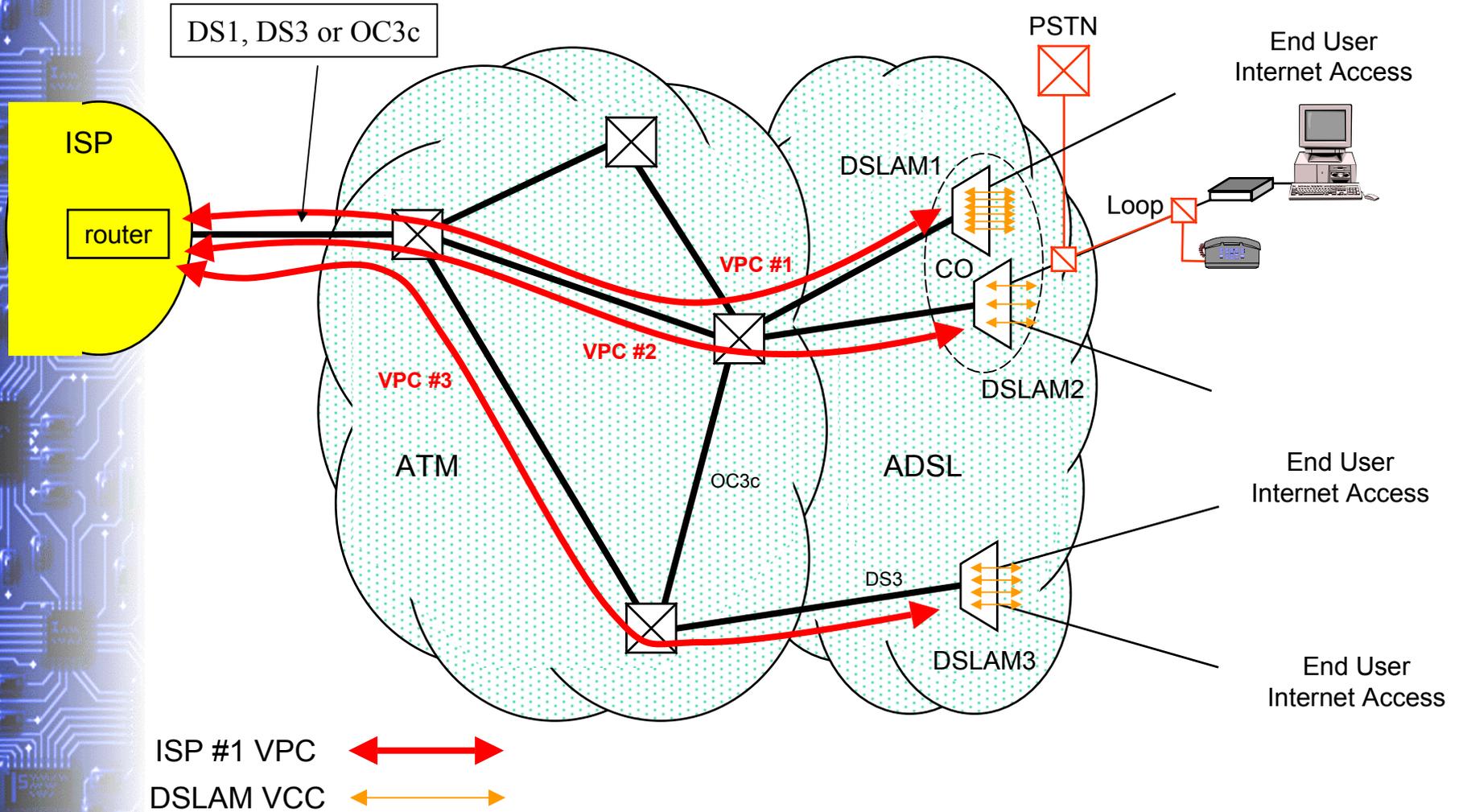


PVC Provisioning



Multiple ISPs get Access at Multiple Switches

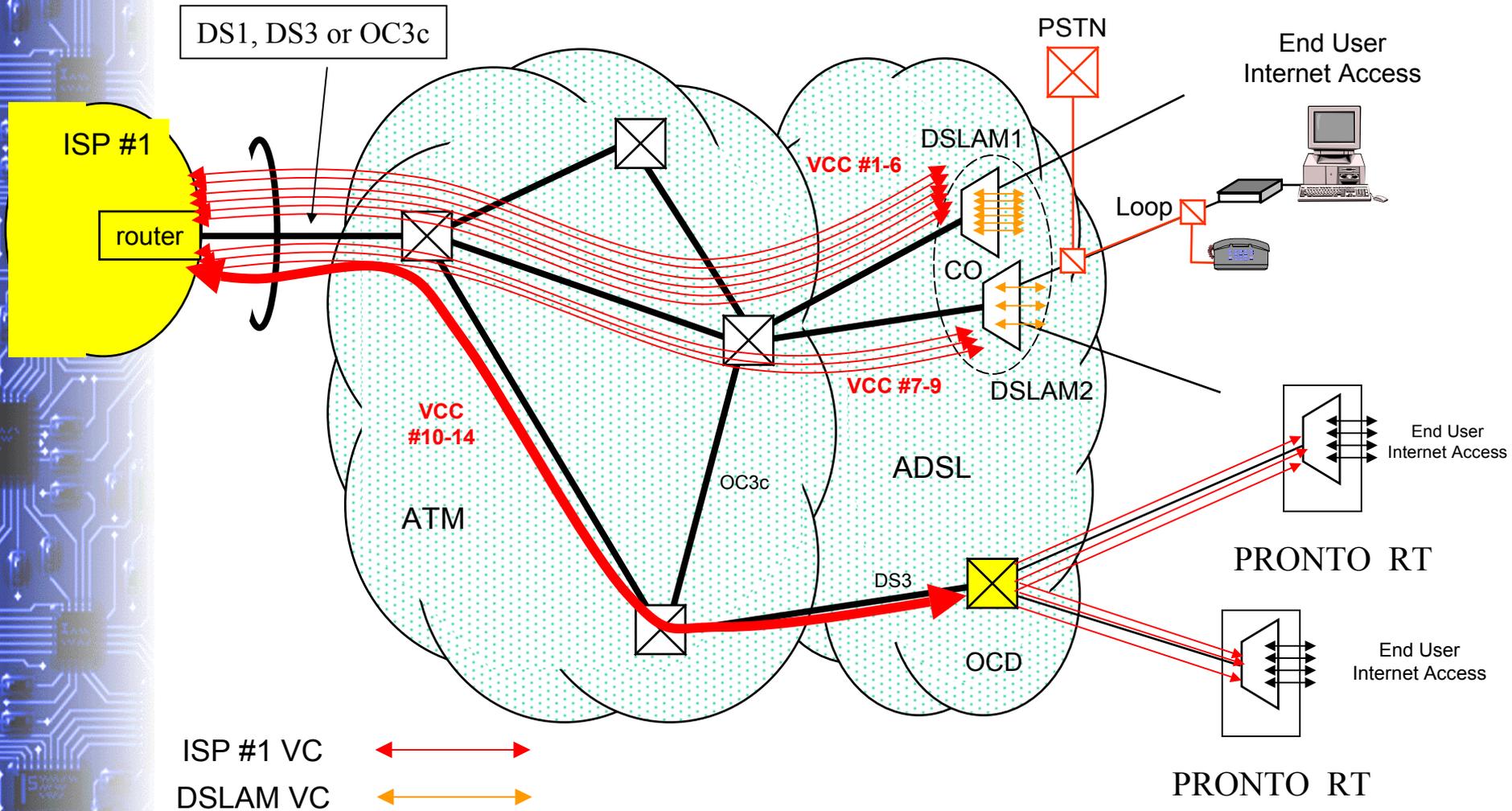
PVP Method



Multiple ISPs get Access at Multiple Switches



PVC and PVP Provisioning



Multiple ISPs get Access at Multiple Switches



Cable and Wireline Have the Same Routing Issues

ATM: The route from A to B must be established at time of service turn-up.

- Virtual Circuits are established from every A to every B, sometimes using Virtual Paths to minimize the provisioning effort.

IP: Policy-Based Routing

- No end-to-end route must be established. The server uses source addresses to route packets

Tunneling

- Traffic travels between the subscriber and the selected ISP inside a “Tunnel”

It's All Accomplished Through Table Entries

Policy-based routing, Tunneling, VCs and VPs are available solutions to common routing problems encountered by Network Providers in the management of packet networks. Their selection and use is dependant on the needs and priorities of the Network Provider.

Conclusions

1. There are no technical differences in cable and wireline networks that could form the basis for disparate ISP access requirements
2. Broadband ISP access inherently relies on "shared" packet-based networks for both cable and wireline companies
3. Differences in cable/wireline "last-mile" architectures are irrelevant to the issue of multiple broadband ISP access requirements
4. Routing techniques are well established; trend is toward more policy-based routing for both cable and wireline networks
5. Both cable and wireline networks are faced with similar costs, routing, network, and bandwidth managements issues in providing broadband ISP access