Asymmetrical Digital Subscriber Line

Tutorial Slide Show

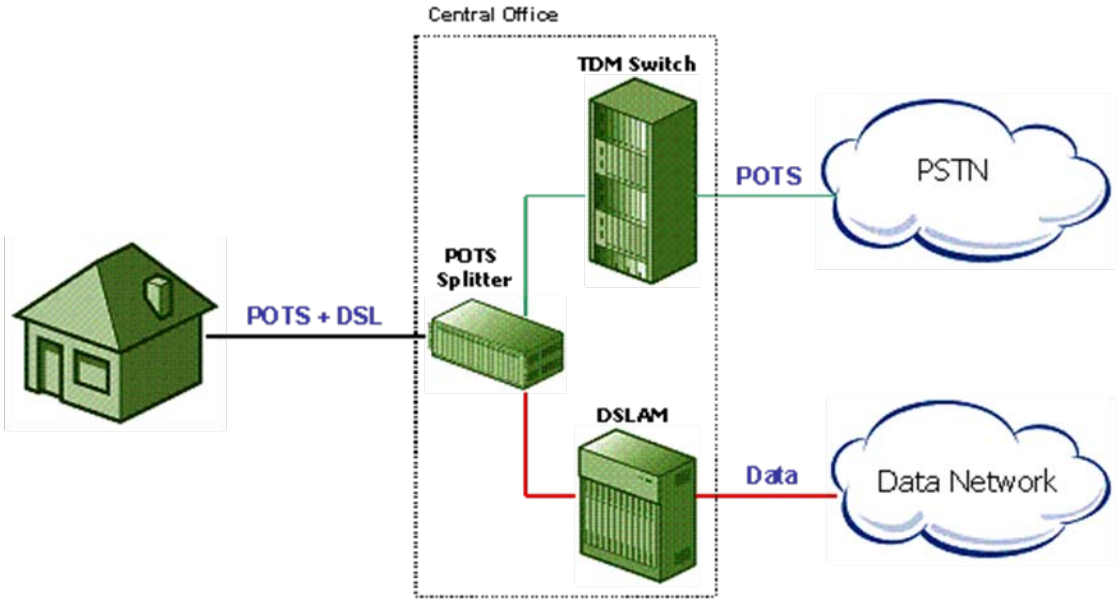
Market Status of ADSL Technology

- ***ADSL is the #1 Broadband Choice in the World with over 60% marketshare***
- ***ADSL is now available in every region of the world***
- ***ADSL is capable of providing up to 50 Mbp, and supports voice, video and data.***
- ***The new DSL network is IP-centric***
- ***There is broad equipment interoperability and there are currently established test specifications for ADSL, ADSL2plus, SHDSL, and VDSL***
- ***Finally, ADSL and home networking are a natural fit as DSL effectively supports multiple applications for multiple uses via each DSL connection.***

Tutorial Outline

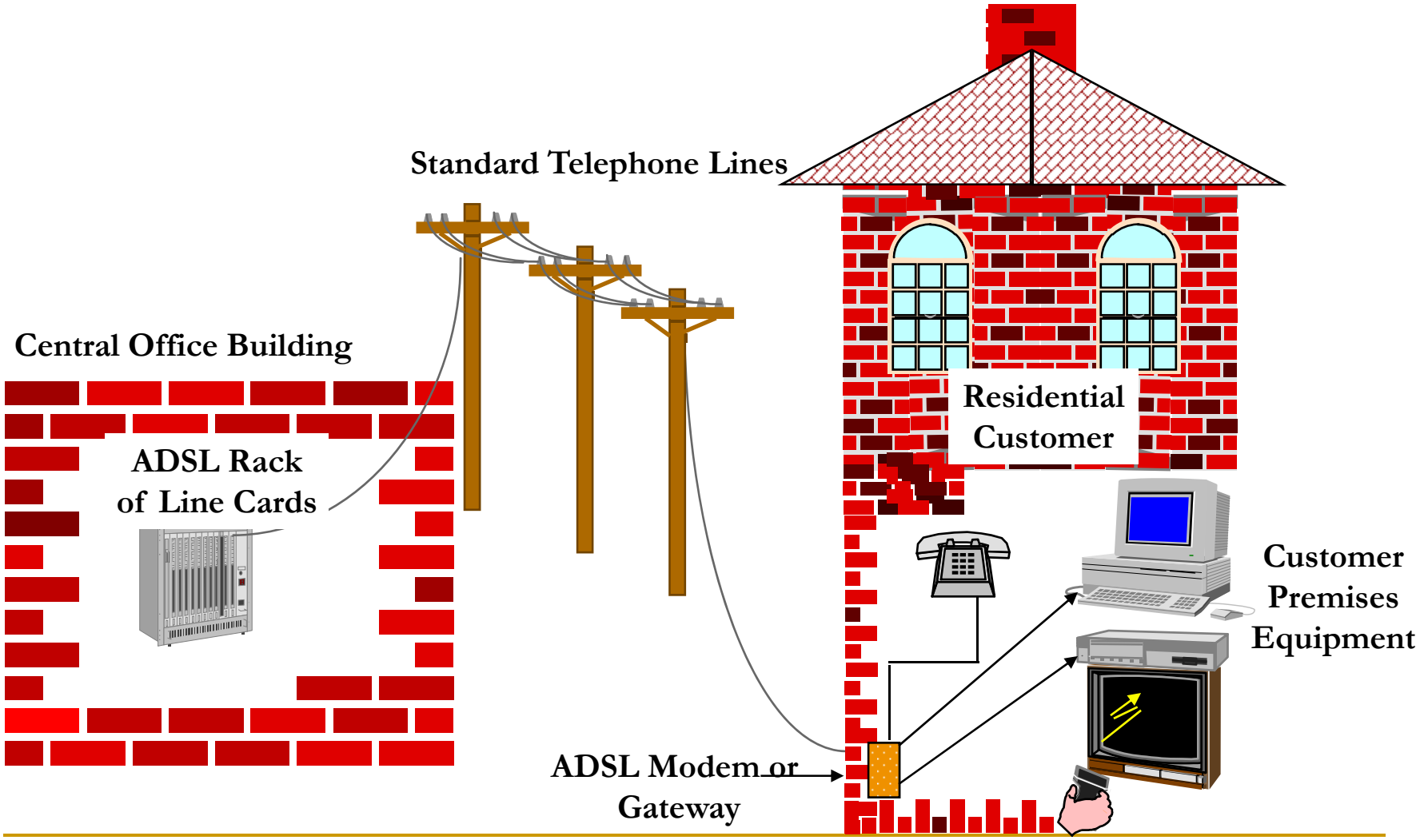
- What Is ADSL ?
- What Can ADSL Do ?
- How Does It Work ?
- Architectural Options
- Status of the Technology
- The Future

Simple overview of ADSL in the phone network



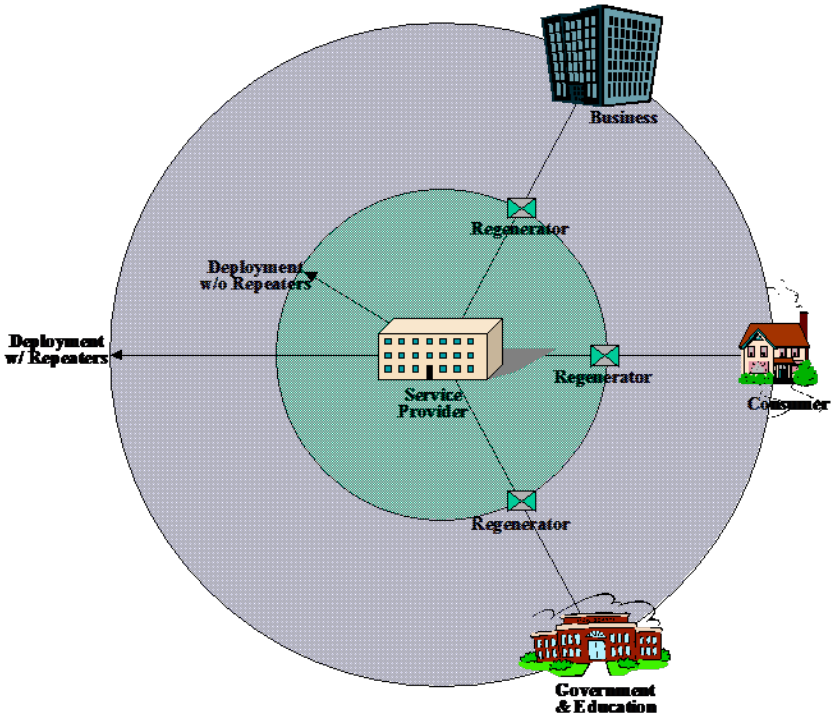
POTS- Plain Old Telephone Service

ADSL Equipment

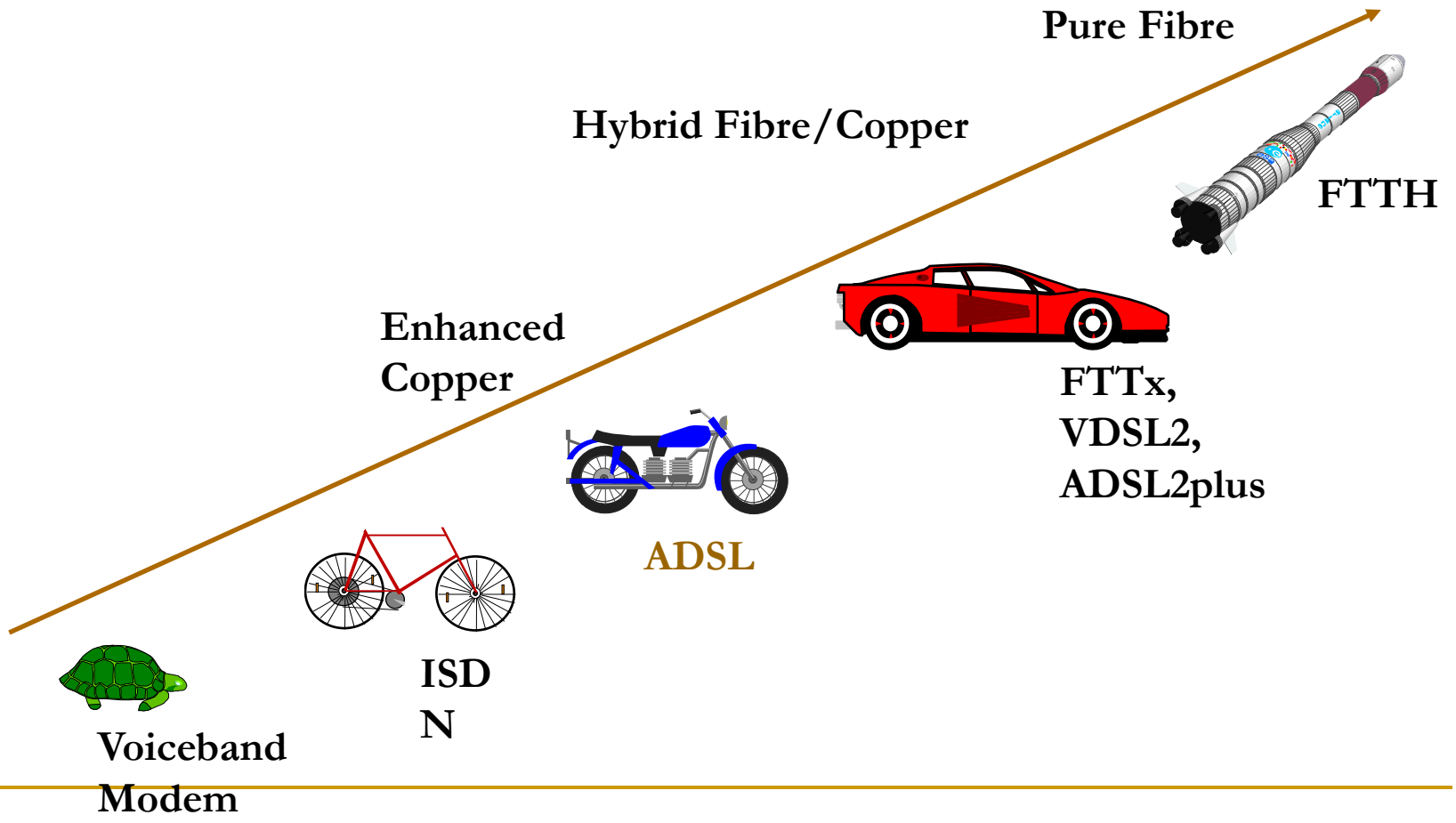


Reach of ADSL

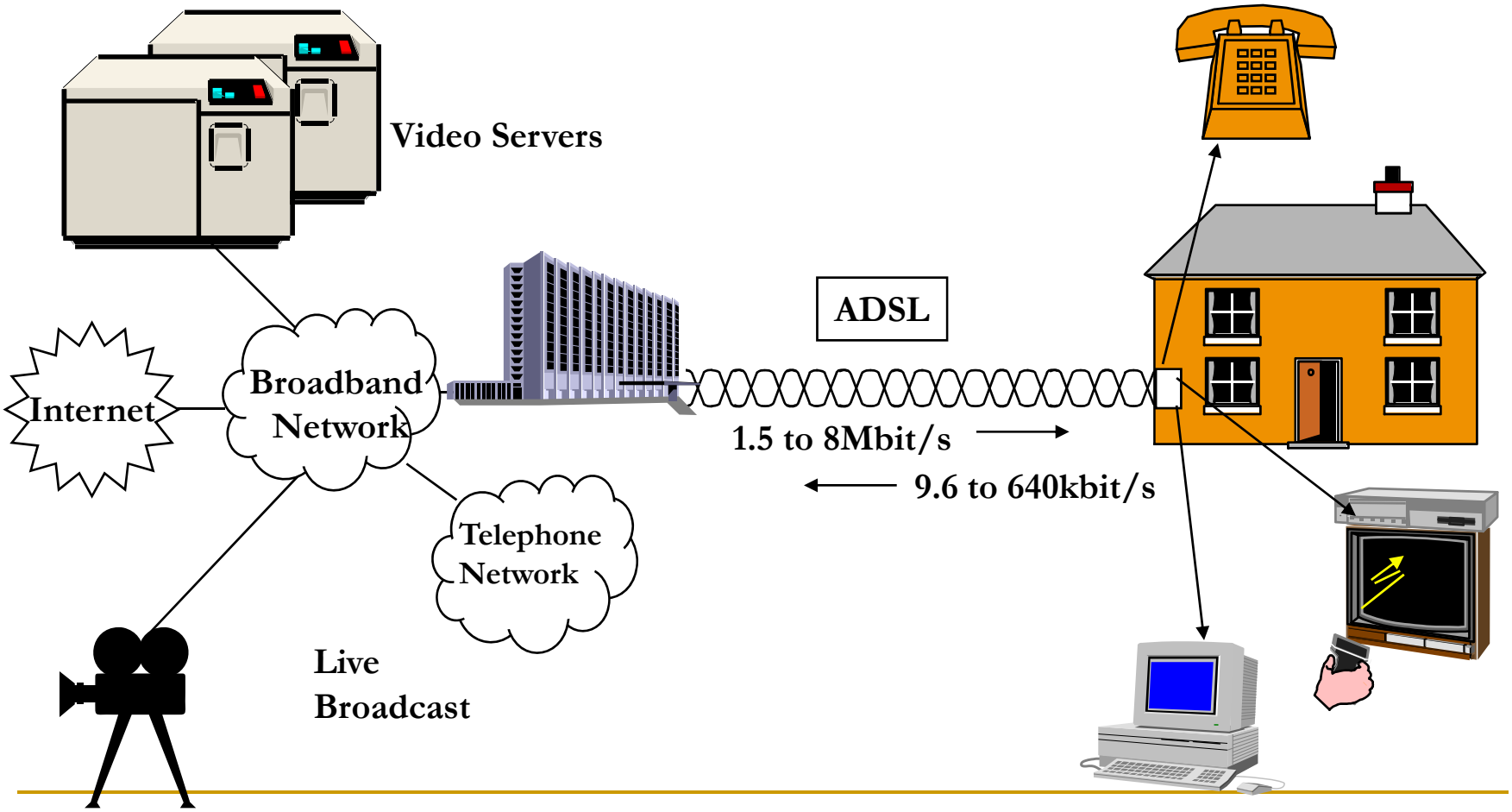
- Typically ADSL can reach as far as 18 kft from the central office
- To extend the reach, service providers have a host of options, outlined in the white paper DSL Anywhere v.2



“Evolution of Digital Access”



“Today’s Typical Network” : ADSL



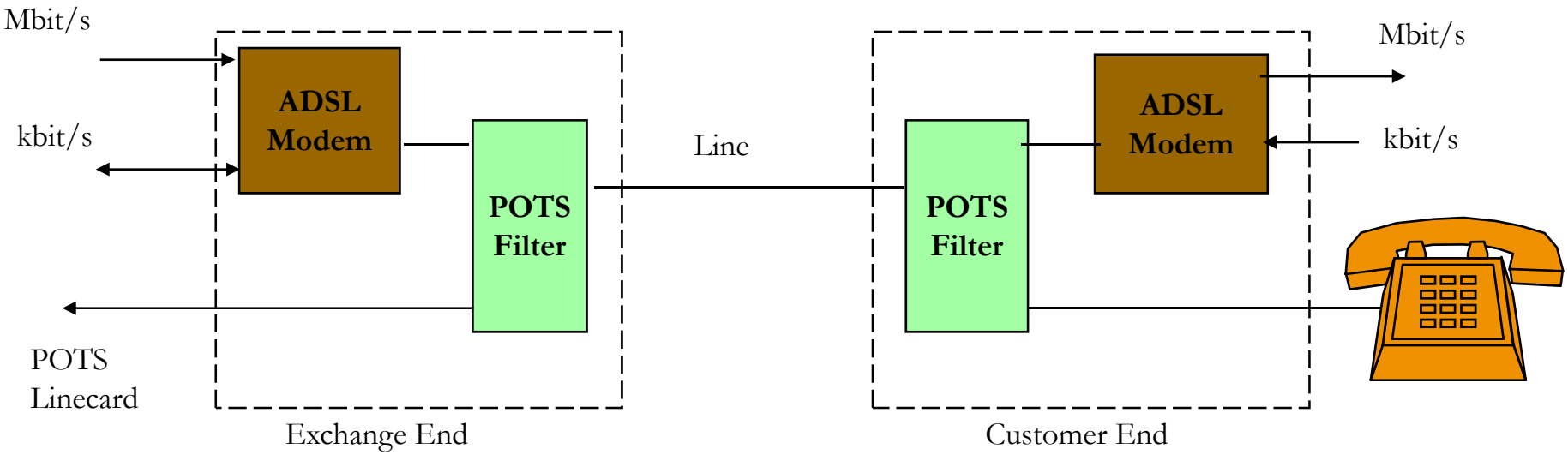
ADSL Applications

- ***Internet Access & File Sharing***
- ***Video***
  - ***Broadcast TV***
  - ***Video On Demand***
- ***Voice over IP via DSL***
- ***Teleworking***
- ***Online Education & Shopping***
- ***Telemedicine***
- ***Online Gaming***

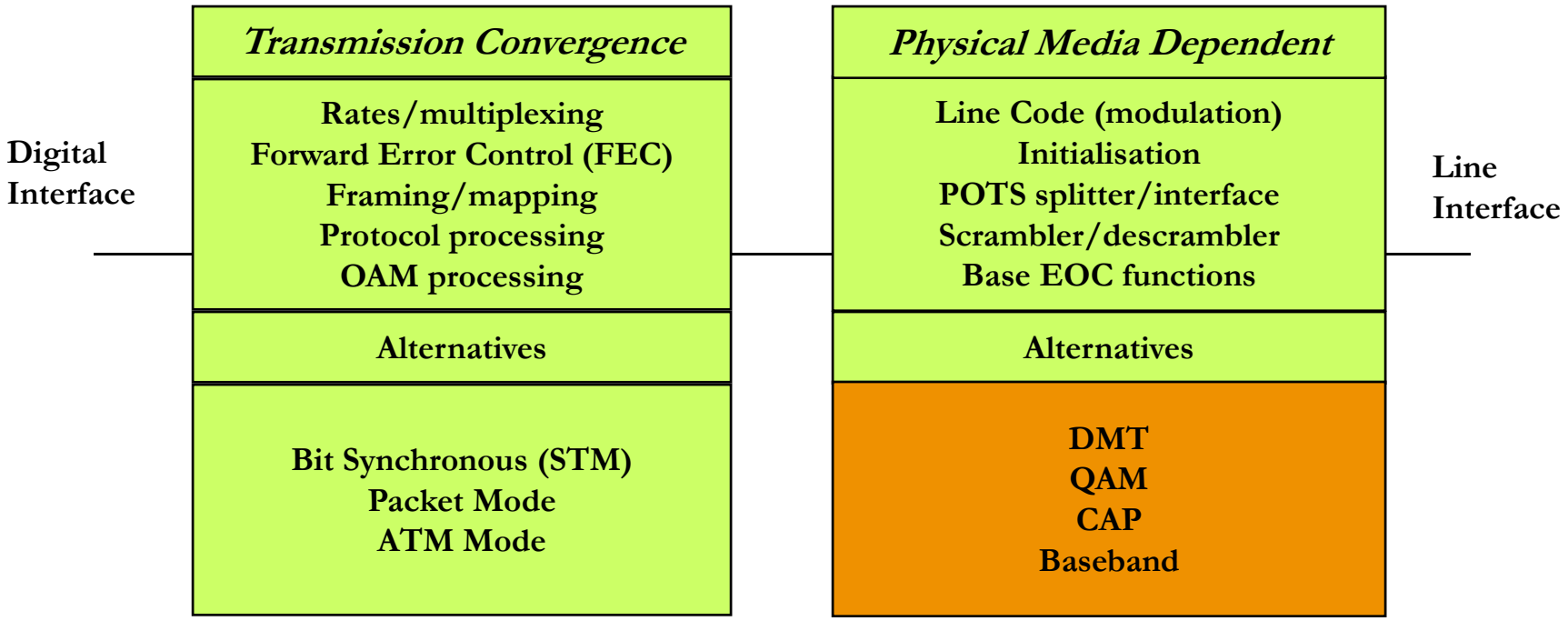
How Does DSL Work?

- Functional Elements
- Use of Bandwidth
- Channel Separation & POTS Splitter
- New IP-centric Architecture

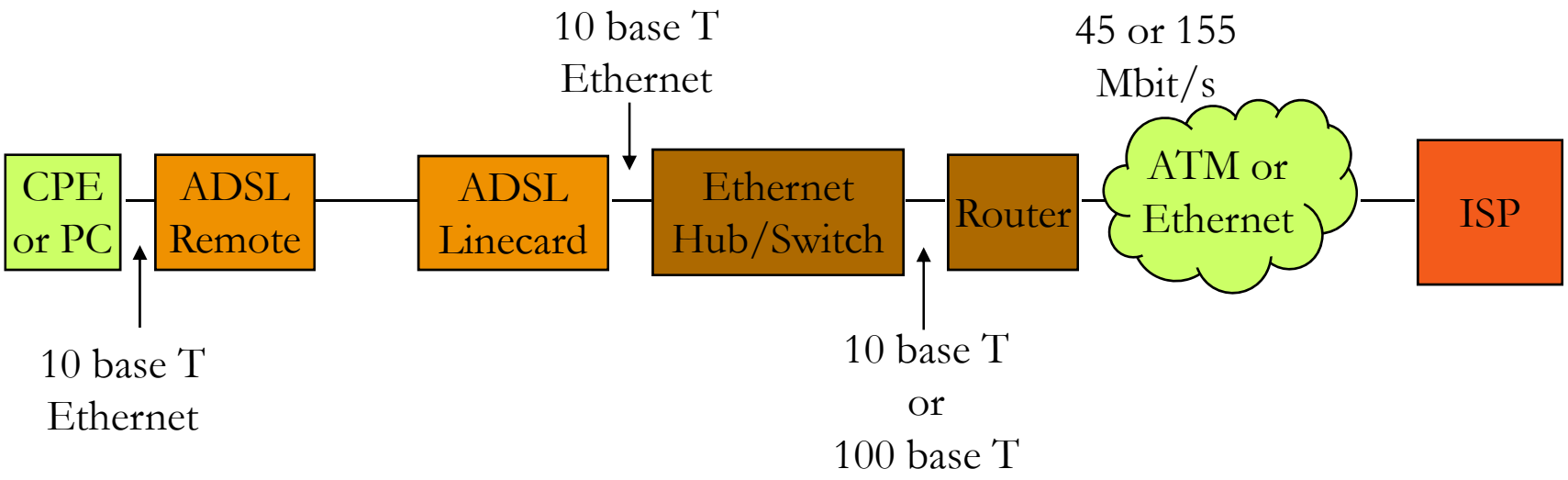
ADSL Modem Structure



ADSL Modem Functions

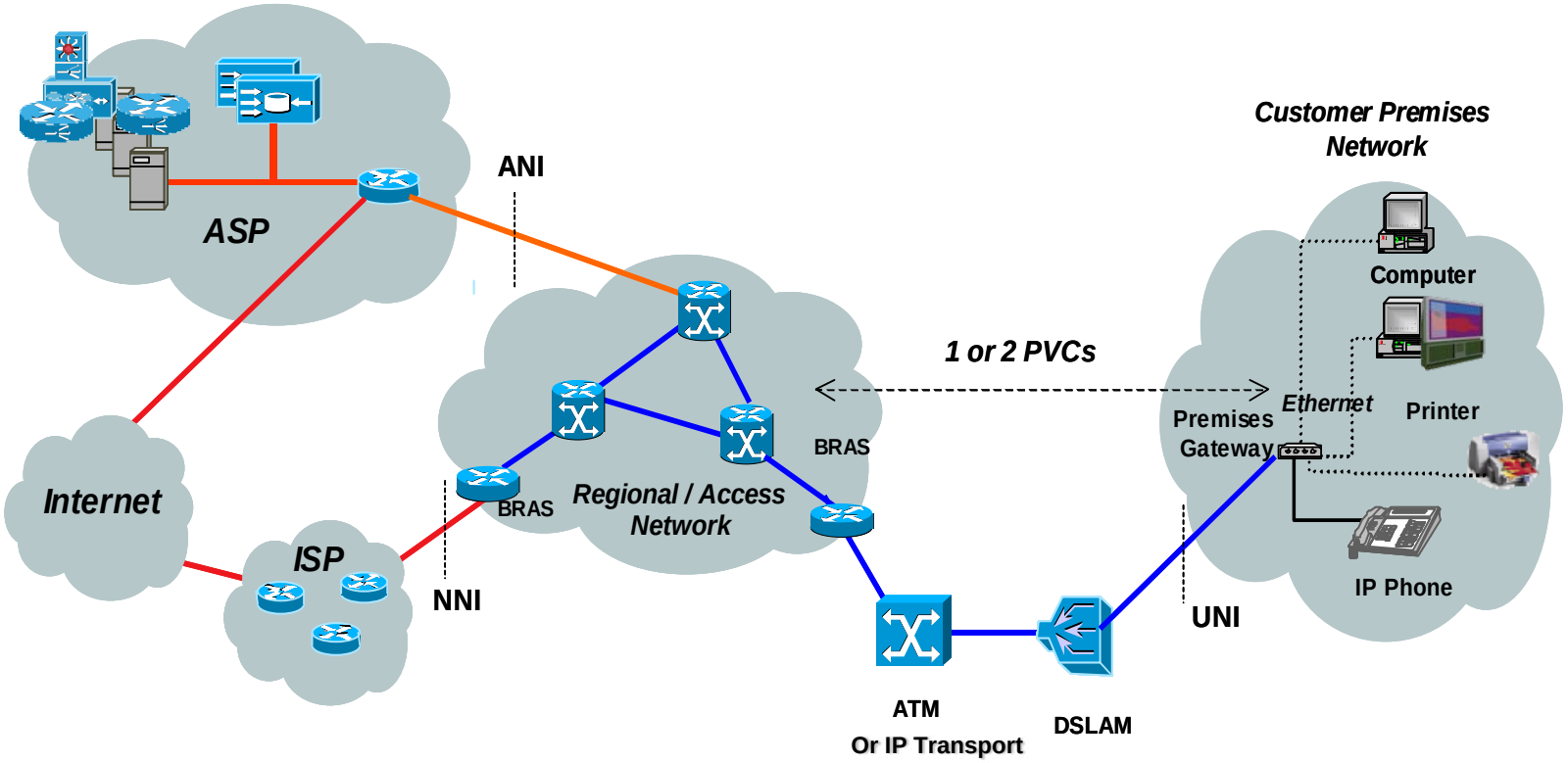


Basic Architecture



IP Architecture

QoS Breakthrough!



TR-059 specifies IP Routed Network Architecture to support a mix of IP based services including IP Video from an Application Service Provider, by employing DiffServ.

Today there are various

DSL Technology Options

Family	ITU	Name	Ratified	Maximum Speed capabilities
ADSL	G.992.1	G.dmt	1999	7 Mbps down, 800 kbps up
ADSL2	G.992.3	G.dmt.bis	2002	8 Mb/s down, 1 Mbps up
ADSL2plus	G.992.5	ADSL2plus	2003	24 Mbps down, 1 Mbps up
ADSL2-RE	G.992.3	Reach Extended	2003	8 Mbps down 1 Mbps up
SHDSL	G.991.2	G.SHDSL	2001	5.6 Mbps up/down
VDSL	G.993.1	Very-high-data-rate DSL	2004	55 Mbps down, 15 Mbps up
VDSL2	G.993.2	Very-high-data-rate DSL 2	2005	100 Mbps up/down

DSL Forum-
Continuous work to enhance DSL

Technical Area	Technical Reports
End-to-end Network Architecture	TRs 001, 003, 010, 011, 012, 042, 058, 059, and 092
CPE Configuration	TRs 007, 019, 020, 032, 061, 064, 068, 069, and 094
Network Operations & Management	TRs 015, 016, 022, 024, 027, 030, 034, 035, 037, 041, 047, 050, 051, 052, 053, 054, 063, 065, and 066
Interoperability Specifications & Testing	TRs 023, 026, 029, 031, 033, 045, 049, 055, 060, and 067

Key Standards Bodies & Recommendations

- ***ANSI***
- ***ETSI***
- ***ITU***
- ***DSL FORUM***
- ***DLNA***
- ***UPnP***

Digital Subscriber Line

Introduction Slide Show

Thank You for watching!