Next Generation Networks (NGN): Quality of Service Issues & Consumer Protection

M.C. Chaube, Sr. G.M.
ALTTC, BSNL, INDIA

Session No 6 (Day 2)

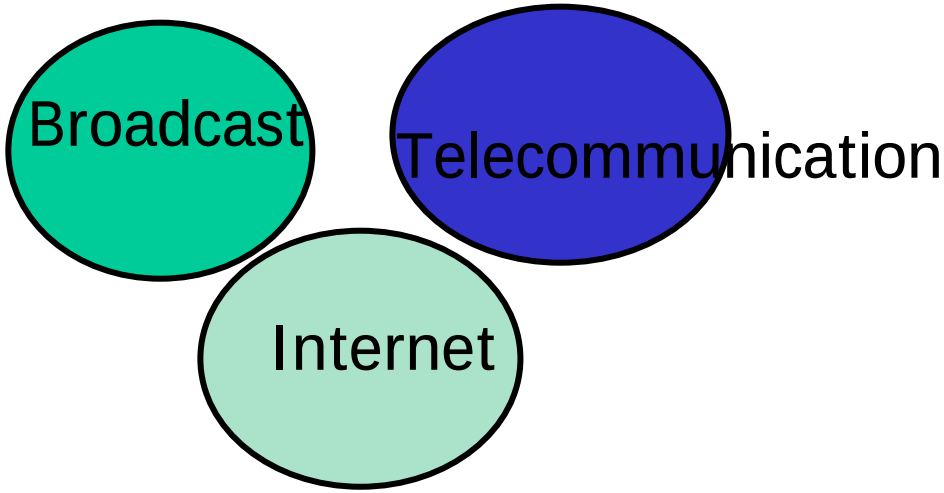
Agenda

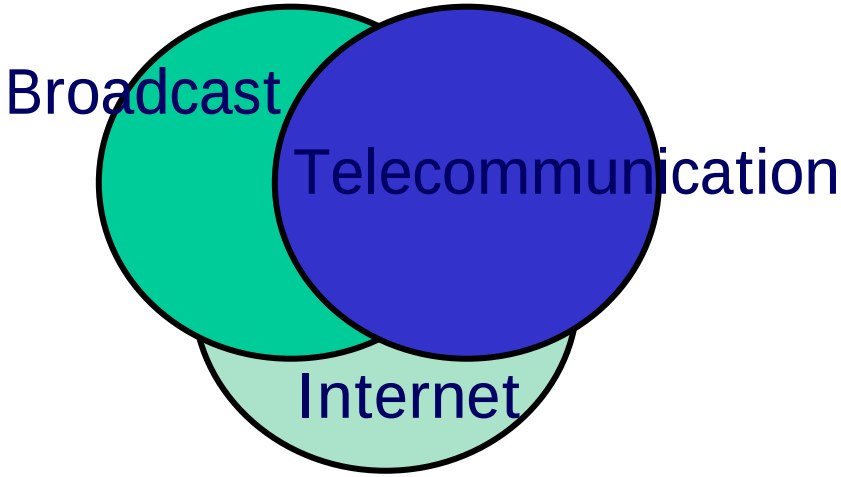
- Convergence: Regulatory Challenges & Issues

- Consumer Protection: NGN QoS

- Quality of Service Issues – Broadband Service (Indian Experience)

Convergence





Before Convergence

Telecommunication license

Broadcasting License

ISP License

VAS License

Convergence

- Content Services
- Application Services
- Network Services
- Network Facilities

Next Generation Network (NGN) By & for!

- By Fixed
- By Mobile
- By wireless

NGN = Broadband Managed IP Network

- for Services
- for Businesses
- for Providers
- for Users

Convergence User Experience

Devices from each ‘world’ having

- Similar functions; e.g. TV over Internet, Internet on smart phones
- All able to connect to each other, wirelessly
- Exchanging and sharing multimedia content

Convergence - perspectives

- **Service convergence**
  - Communications, information, entertainment, multimedia
- **Network convergence**
  - Capacity, coverage, performance, efficiency
- **Device convergence**
  - functional flexibility, features, interoperability
- **Regulatory convergence ?**

Challenges in convergence

Regulatory

- Relevance of competition, self-regulation and technology-neutrality
- New media regulation in IP environment, including SPAM and content
- Active involvement for NGN-based network to promote new growth areas, competition and investments

Institutional

- Greater collaboration, address new challenges in protecting consumer, social issues and new media.
- Additional focus on improving infrastructure availability
- Enhancement of monitoring and enforcement to keep abreast of socio-technological advancements

Consumer Protection: Citizen Perspective

- Increasing and Diversified Complaints against Telecom and Broadband Internet Services
- Broadband Internet service generally ranks top in consumer complaints.
  - Unfair charges
  - unfair subscription
  - provisioning of chargeable Value added services without explicit consent
  - Broadband Speed not provided as per plan

Changing Market/Regulation Environment

Market

- Advanced & integrated network
- New convergence services, e.g. IPTV
- Broadcasting & telecom bundling services
- Cut- throat competition

→ Increasing risk of new damages/ Complaints

Regulation

- The focus of telecom regulation moves from ex-ante to ex-post.
- Increasing uncertainty of regulation
- A greater possibility of harming consumer benefit

→ Growing importance of Consumer Protection

BSNL

ALTTC

Regulatory Issues: Consumer Protection

Consumer protection/safeguards/education

- Access to emergency services
- Digital media literacy, Internet safety awareness, inappropriate content
- Naming, addressing, identity

Unsolicited communications

- Spam – voice, SMS, email...
- Do Not Call Register
- Call ‘spoofing’ – voice, SMS

Regulatory Issues & Consumer Protection

- Next Generation Networks (**NGN**), provides **new opportunities to increasing consumer choice**.
- It also raises **new challenges for Quality of Service** (QoS) & consumer protection.
- Consumers have **expectations of PSTN voice quality**
- **need access to comparable, reliable and independent information** about price, quality and service features to empower them to switch with confidence.
- **consumer need protection against threats** to cyber security- identity theft by phishing, malicious virus dissemination via SPAM, the transmission of harmful content, etc.

BSNL

ALTTC

Consumer Protection: NGN QoS

- There are a number of QoS-related aspects that need to be addressed as NGN is deployed. These include:
  - Service disruption during migration from PSTN to NGN.
  - Management of end-to-end voice quality of service.
  - Access to emergency services & call location.
  - Differentiation of QoS.
  - Network integrity.
  - Network security.

Consumer Protection : NGN QoS

- In NGN need is to differentiate between
  - real-time interactive services, eg voice and video telephony;
  - Audio and video quality consistency, interactive multimedia environment
  - real-time non-interactive services, eg television transmission;
  - and near real-time interactive services, eg instant messaging.

Consumer Protection : NGN QoS

- For voice telephony - important is to control delay, jitter, error rate and packet loss
- video telephony demands a higher guaranteed bandwidth to maintain a certain quality of service
- Delay is less important for delivering quality in “streaming” services like television
- and for instant messaging only a minimum level of service quality across the parameters is needed
- Reliability and performance of a VoIP service

Consumer Protection: NGN QoS

QoS: What matters for consumers?

- Consumer may be prepared to pay more for faster Internet speeds - access to new content & applications.
  - the relevant QoS information needed to differentiate

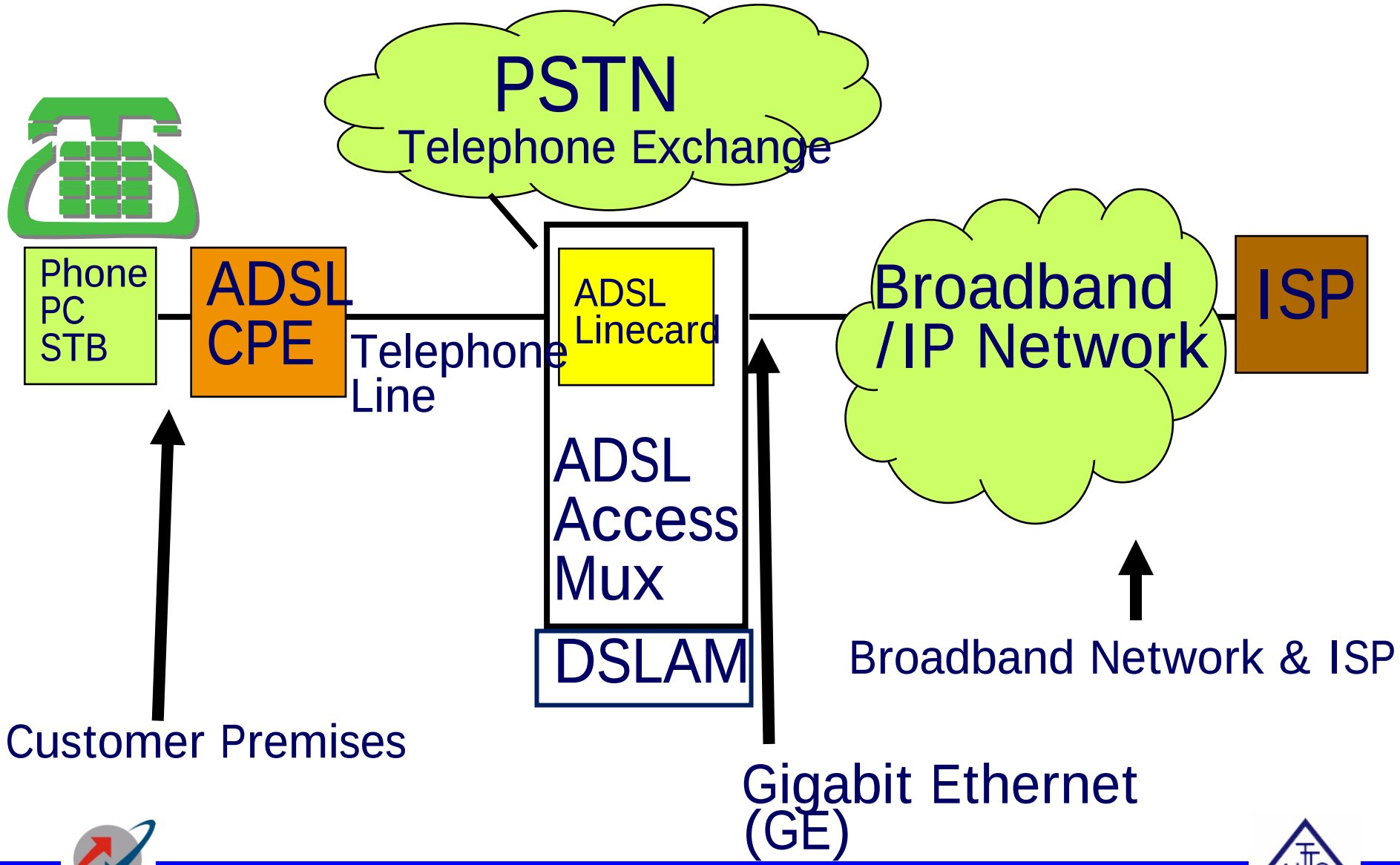
Parameters:-

- Network Latency.
- Packet Loss.
- Bandwidth Utilization / Throughput.
- Service Availability/ Uptime.
- Service Provisioning/ Activation Time.
- Fault Repair/Restoration Time.

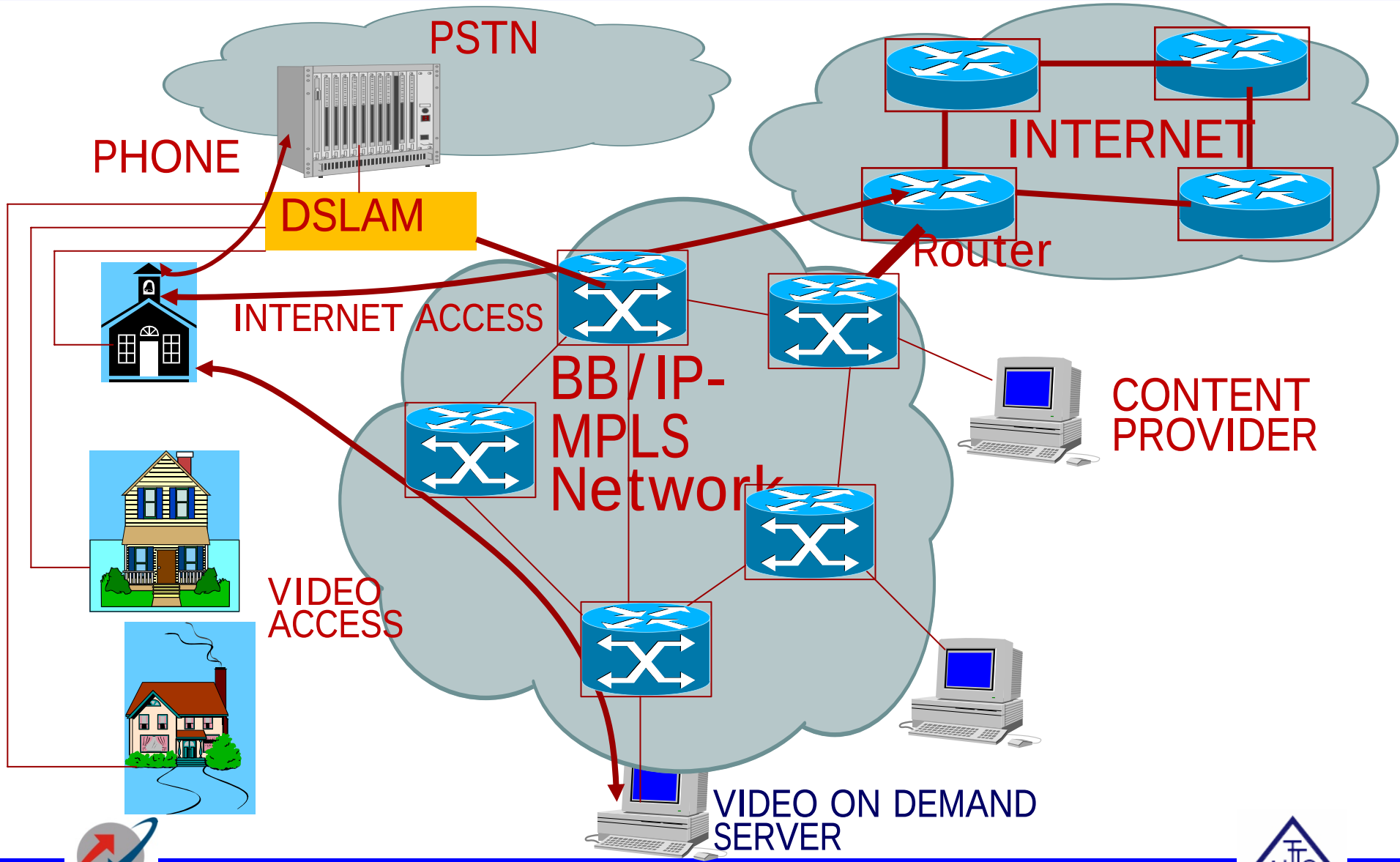
BSNL

ALTTC

Broadband Services Network Architecture



Broadband Services Network Architecture



Consumer Protection: NGN QoS

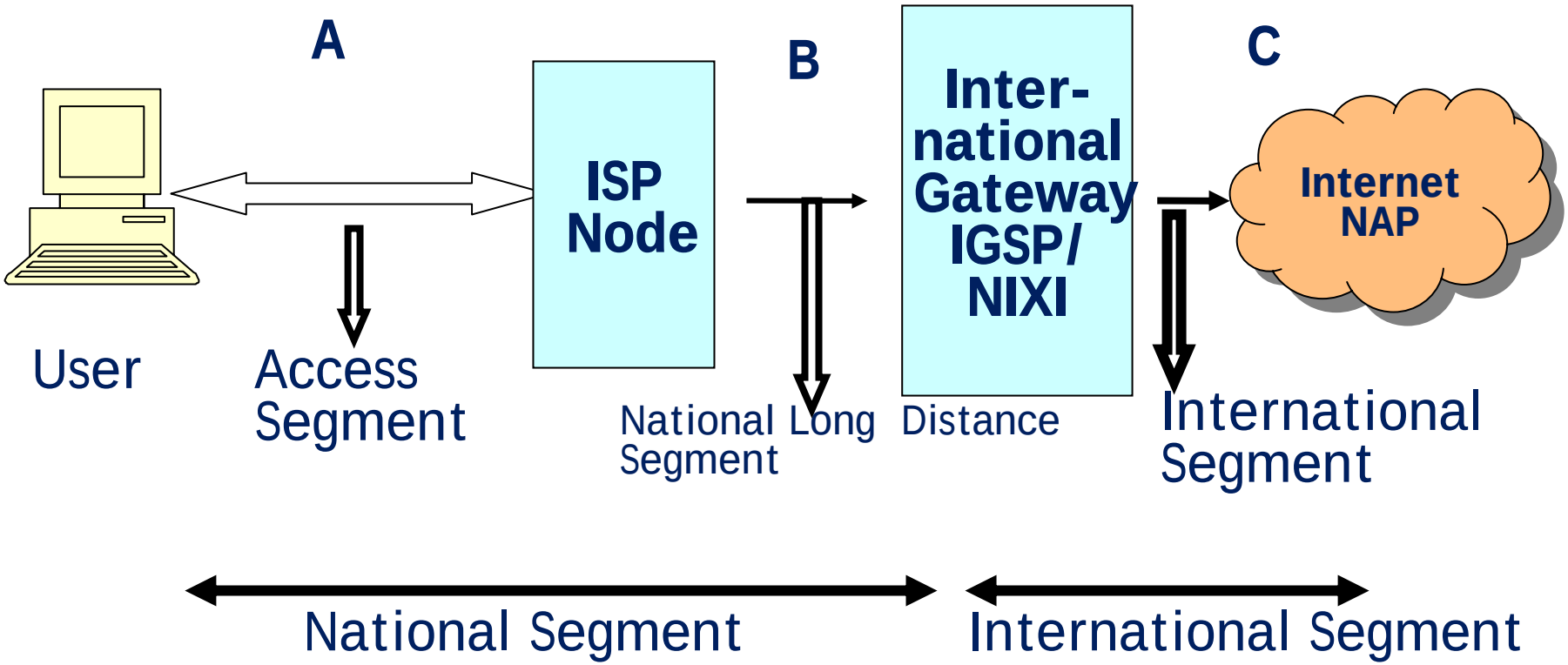
1. Network latency:- Latency is the measure of duration of a round trip for a data packet between specific source and destination CPE's/Router Ports.

2. Packet loss:-

   This is the %age of packets lost to the total packets transmitted between two designated points CPE's/Router Ports.

Consumer Protection: NGN QoS

3. Bandwidth utilization/throughput:-



QOS Regulation – Broadband Service: Indian Case Study

1. **Packet Loss**	<1%
2. Network Latency	
•User reference point at POP / ISP Gateway Node to International Gateway	<120 msec
•User reference point at ISP Gateway Node to International nearest NAP port abroad	<350 msec
•User reference point at ISP Gateway Node to International nearest NAP port abroad (Satellite)	<800 msec

BSNL

QOS Regulation – Broadband Service: Indian Case Study

3. Bandwidth Utilization/ Throughput:

a) **Bandwidth Utilization**

i) POP to ISP Gateway Node

ii) ISP Gateway Node to International Gateway Node upstream Link(s) for International connectivity

<80% link(s)/route bandwidth utilization during peak hours (TCBH). If on any link(s)/route bandwidth utilization exceeds 90% = Congestion

b) **Broadband Connection Speed (download)**

Subscribed Broadband Speed to be met >80% from ISP Node to User

BSNL

ALTTC

QOS Regulation – Broadband Service: Indian Case Study

4. Service Availability/uptime:-

- Service availability means the operational hours of the service (% age);
- Benchmark => 98%

5. Provision/Activation Time:-

- the time taken from the date of receipt of valid application to the date when the service is activated.
- Benchmark: 100% within 15days

6. Fault Repair/Restoration Time:-

the time taken to restore a service from the time of the fault was reported

- Benchmark- Next day: > 90% & within 3 days: 99%

BSNL

ALTTC

QOS Regulation – Broadband Service: Indian Case Study

7. Billing Performance

- Billing complaints per 100 bills < 2%
- %age of Billing Complaints resolved 100% within 4 weeks
- Time taken for refund of deposits 100% within 60 days

8. Response time to the customer for assistance

% age of calls answered by operator (Voice to Voice)

- Within 90 seconds > 80%

BSNL

ALTTC

QUESTIONS?

Thank you