ITU & AREGNET workshop on the OTT services

Introduction to NGN Driving Services and OTTs

Nouakchott , 27 April, 2015

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NGN Driving Services and OTTs

- **Issues on evolution for voice and new services**

- **NGN driving services and ICT e-services**

- **New players and OTT services**

- **Quality of Service per service class**

- slide 2

NGN Driving Services and OTTs

- **Issues for voice and new services**

  - **Voice service increase versus decrease or migration?**

  - **Voice revenues evolution?**

  - **New services substituting classical voice?**

  - **What impact of new services on traffic and revenues?**

  - **What Quality of Service per solution?**

  - **From country monopoly to … multiple country providers versus… worldwide oligopoly?**

  - **… and many more**

- slide 3

NGN Driving Services and OTTs

- **Topics to analyze**

  - **Main driving services for NGN (Next Generation Networks)**

  - **New capabilities of NGN and web based services**

  - **Main e-services at national level**

  - **OTT (Over the Top) positioning for web based services**

  - **Service provider positioning on the new market**

  - **Economies of scale versus market fragmentation**

  - **Strategies recommended for the service providers**

- slide 4

NGN Driving Services and OTTs

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- **Quality of Service per service class**
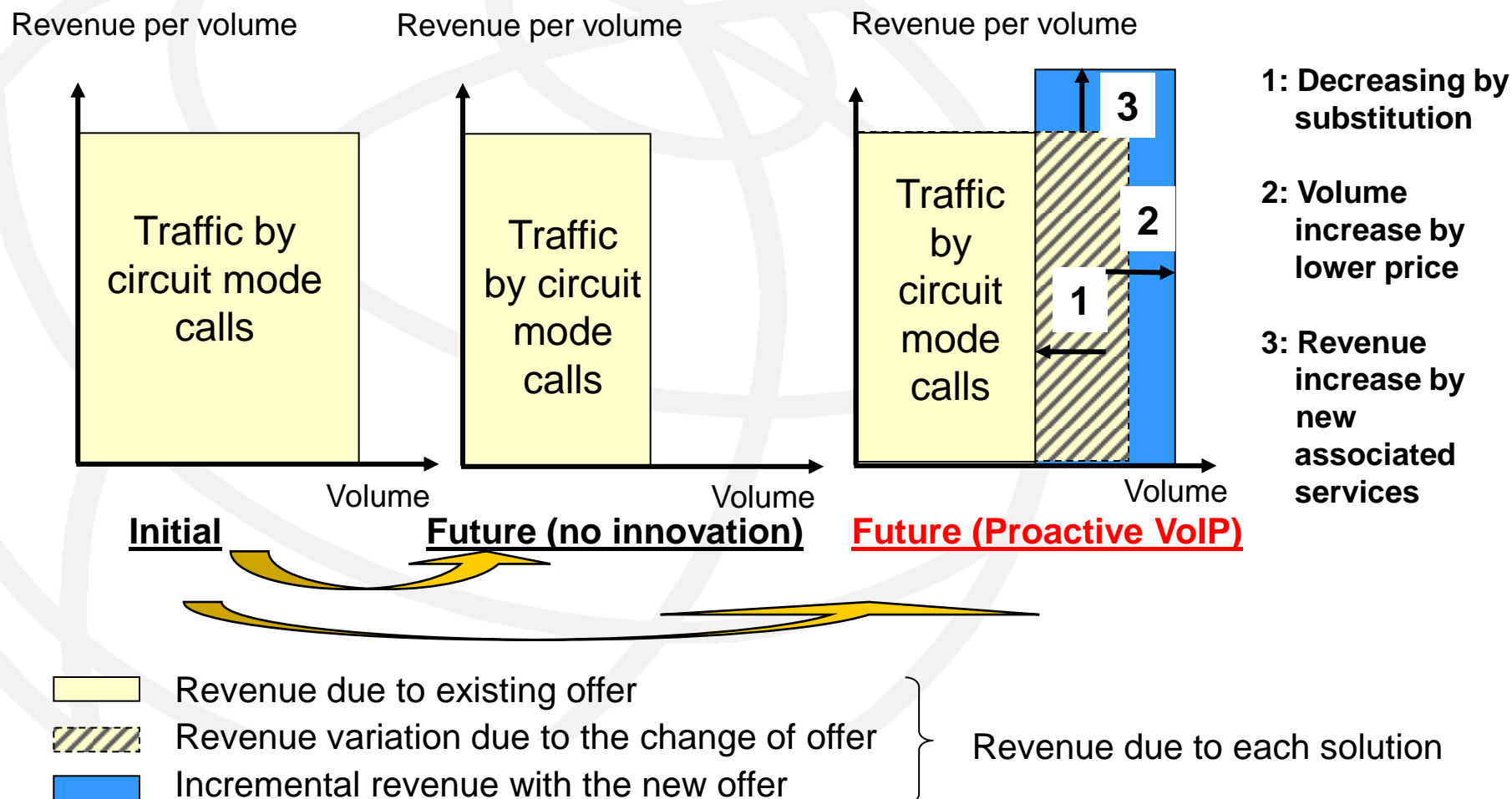
NGN Driving Services and OTTs
NGN driving services

- **Residential type**

  - **VoIP (Voice over Internet Protocol):**

    - **Motivation: Cost saving, integration with chat and video**

    - **Concerns: Cannibalization, Interconnection and QoS**

  - **IPTV (Internet Protocol Television): Wide selection, video on demand and special events**

  - **Content delivery:**

    - **Music, games, gambling**

NGN Driving Services and OTTs
NGN driving services

VoIP positioning for a service provider

Revenue per volume   Revenue per volume   Revenue per volume

Traffic by circuit mode calls

Traffic by circuit mode calls

Traffic by circuit mode calls

3

2

1

Volume   Volume   Volume

Initial   **Future (no innovation)**   **Future (Proactive VoIP)**

1: Decreasing by substitution

2: Volume increase by lower price

3: Revenue increase by new associated services

Revenue due to existing offer

Revenue variation due to the change of offer

Incremental revenue with the new offer

Revenue due to each solution

NGN Driving Services and OTTs Typical Skype prices from smart terminals to fixed telephone

- **From Spain to:**
  - **EU countries, Korea, Malaysia, Australia, Canada, etc: 2 cents/min**
  - **Morocco: 1,7**
  - **Iran: 4,5**
  - **Egypt: 11,9**
  - **Saudi Arabia: 8,2**
  - **Lebanon: 9,4**
  - **Kuwait: 9,8**
  - **Algeria: 10,4**
  - **Oman: 14**
  - **United Arab Emirates: 14,1**
  - **Jordan: 15,5**
  - **Yemen: 15,6**
  - **Bahrain: 19**
  - **Sudan: 19,7**
  - **Libya: 22,4**
  - **Qatar: 29**
  - **Iraq: 29**
  - **Syria: 29**
  - **Tunisia: 29,4**
  - **Palestine Authority: 31,9**
  - **Djibouti: 39,2**
  - **Mali: 44.3**
  - **Mauritania: 45**
  - **Somalia: 52,8**

- *Ratios up to 30:1 among countries. Special discounts apply per volume and flat tariffs per month*

- *Current operators tariffs up to 100 times greater except for some highly connected countries*
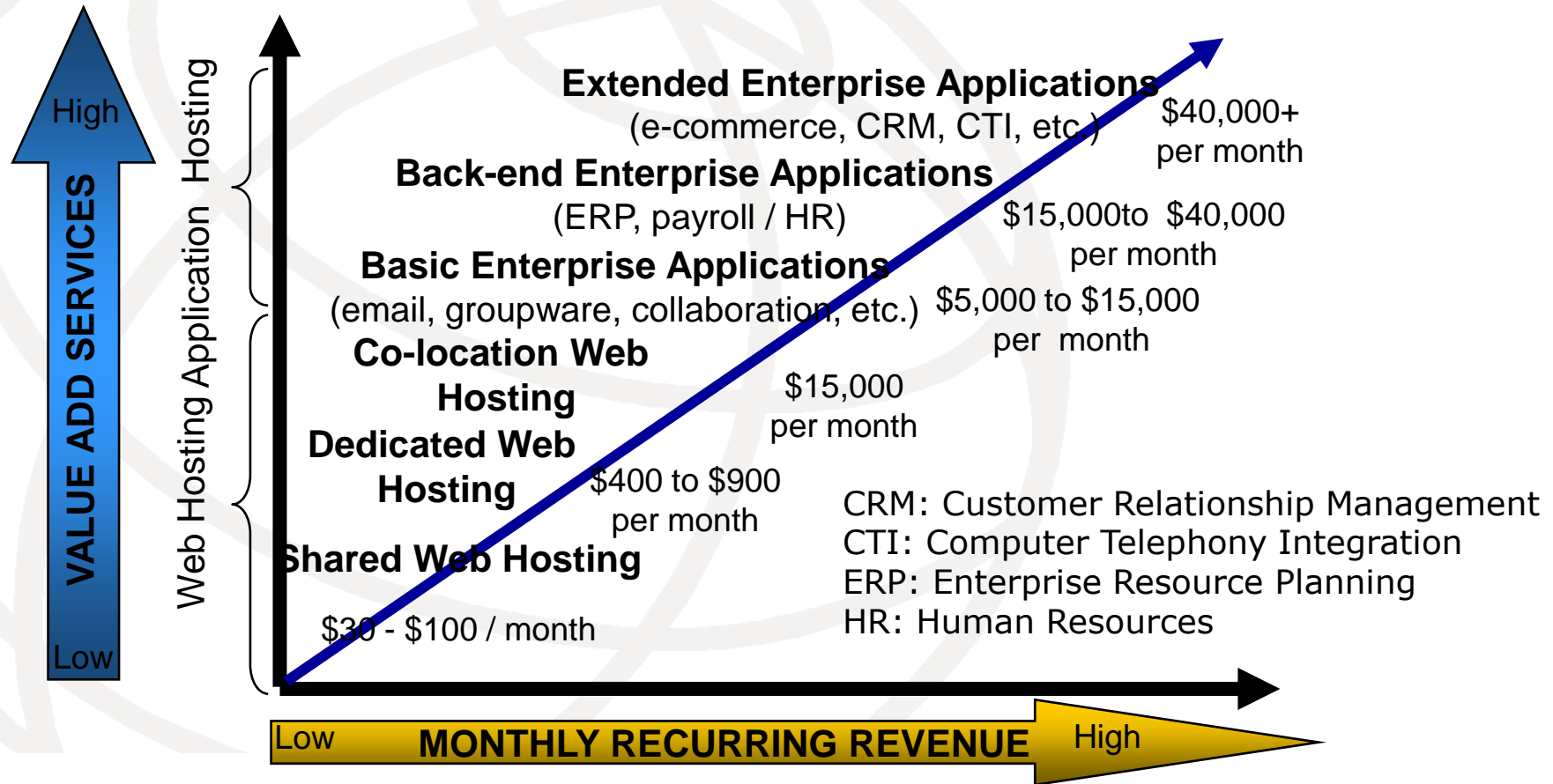
NGN Driving Services and OTTs
NGN Driving Services for Business

- **Virtual Private Network (VPN): Customized operation**

- **Multimedia Conferencing: Quality increase for multiparty**

- **Unified messaging: Better productivity and efficiency**

- **ASP (Application Services Provider): Wide availability and adaptation of IT services**

NGN Driving Services and OTTs
NGN Driving Services for Business

Main ASP applications and projected value/revenue added

VALUE ADD SERVICES (High → Low)

Web Hosting Application Hosting

Extended Enterprise Applications
(e-commerce, CRM, CTI, etc.)
$40,000+ per month

Back-end Enterprise Applications
(ERP, payroll / HR)
$15,000 to $40,000 per month

Basic Enterprise Applications
(email, groupware, collaboration, etc.)
$5,000 to $15,000 per month

Co-location Web Hosting
$15,000 per month

Dedicated Web Hosting
$400 to $900 per month

Shared Web Hosting
$30 - $100 / month

CRM: Customer Relationship Management
CTI: Computer Telephony Integration
ERP: Enterprise Resource Planning
HR: Human Resources

MONTHLY RECURRING REVENUE (Low → High)

Source: Cherry Tree & Co

NGN Driving Services and OTTs
NGN driving applications as indicated at UIT-D Q.20

- **E-Government**

- **E-business**

- **E-science**

- **E-learning and Mobile Learning**

- **E-health**

- **E-agriculture**

- **E-environment**

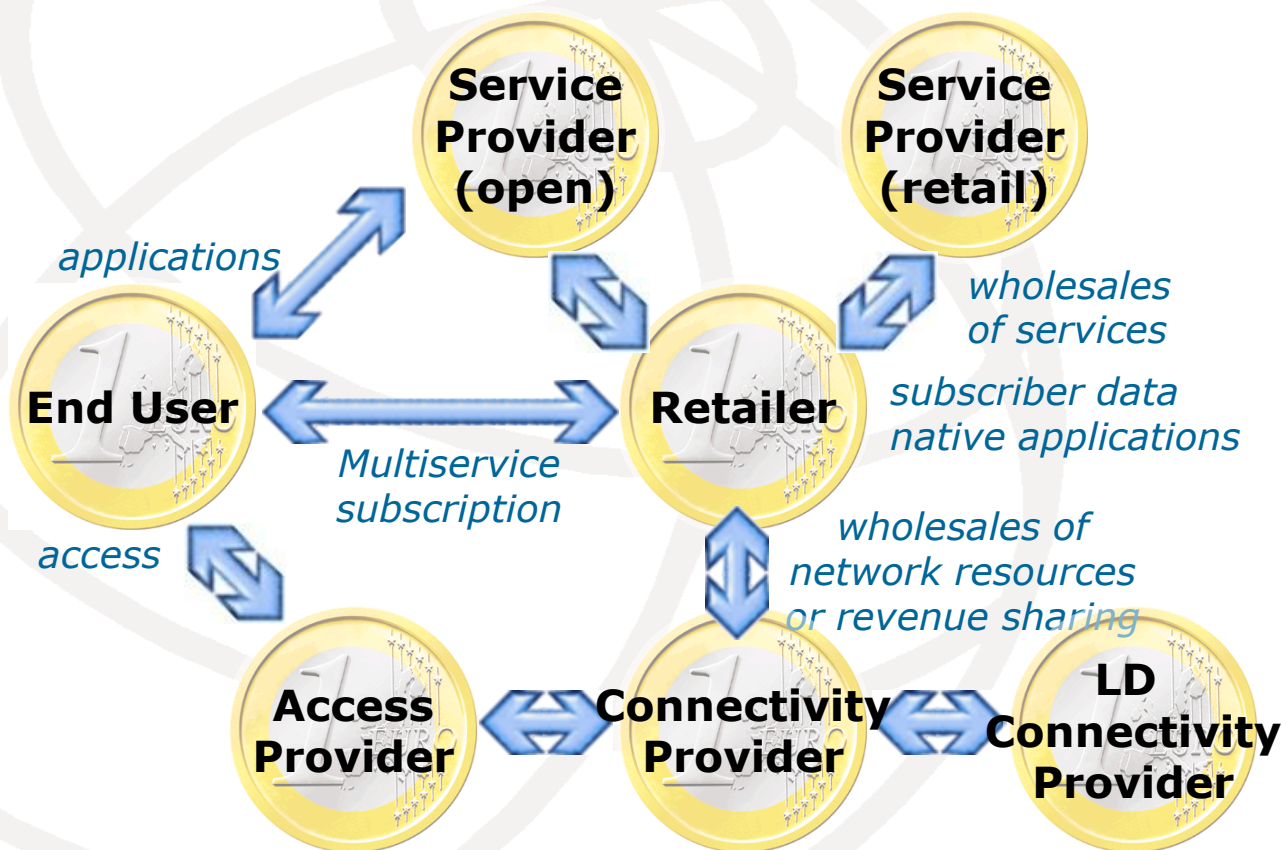- **Telecom Support to public security, catastrophe prevention and emergency aid**

ICT: Information and Communication Technologies

NGN Driving Services and OTTs

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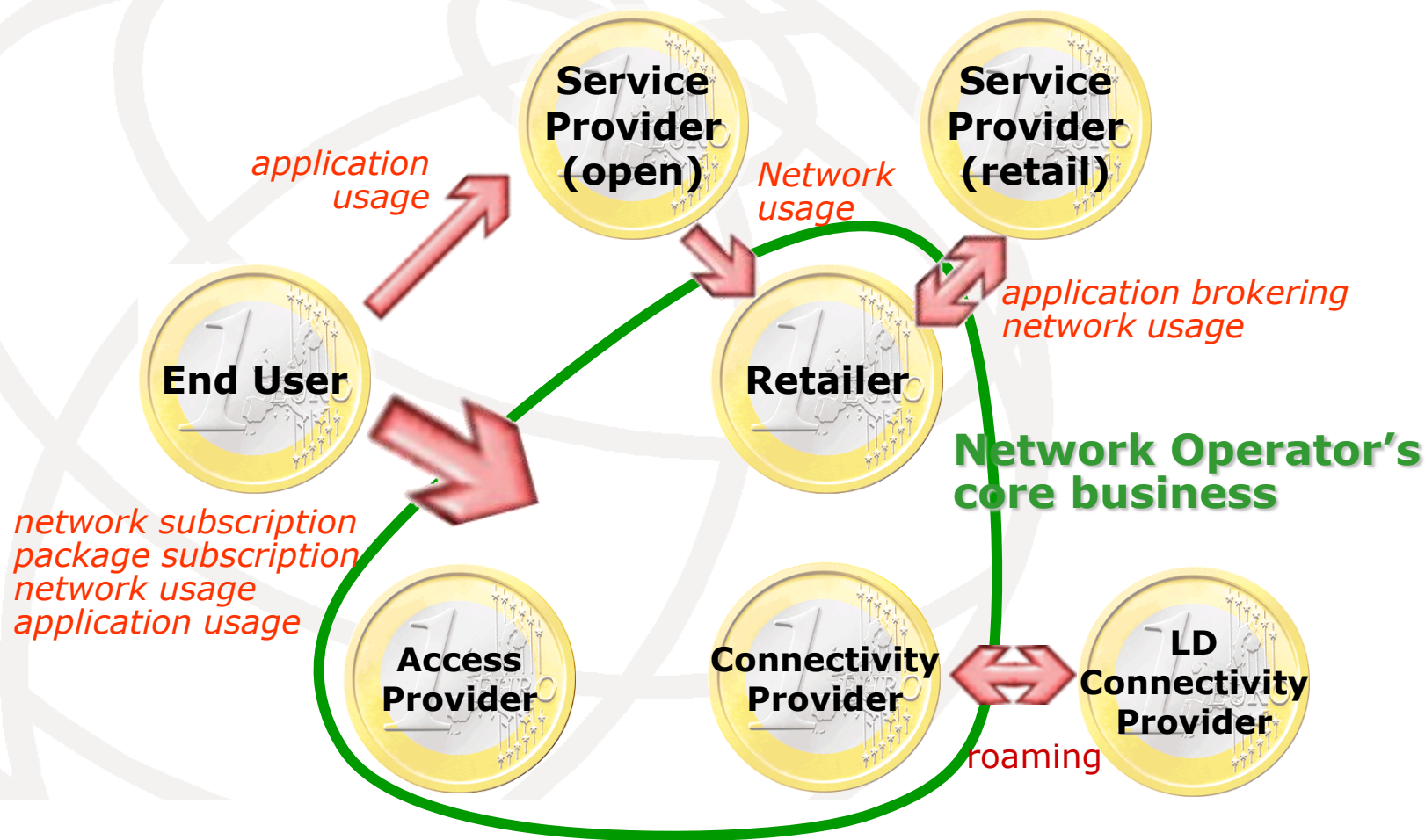- **Quality of Service per service class**

NGN Driving Services and OTTs New players in service provisioning and interrelations

Service Provider (open)

Service Provider (retail)

End User

Retailer

applications

Multiservice subscription

access

wholesales of services

subscriber data native applications

wholesales of network resources or revenue sharing

Access Provider

Connectivity Provider

LD Connectivity Provider

LD: Long Distance

NGN Driving Services and OTTs New players in service provisioning and interrelations

Service Provider (open)
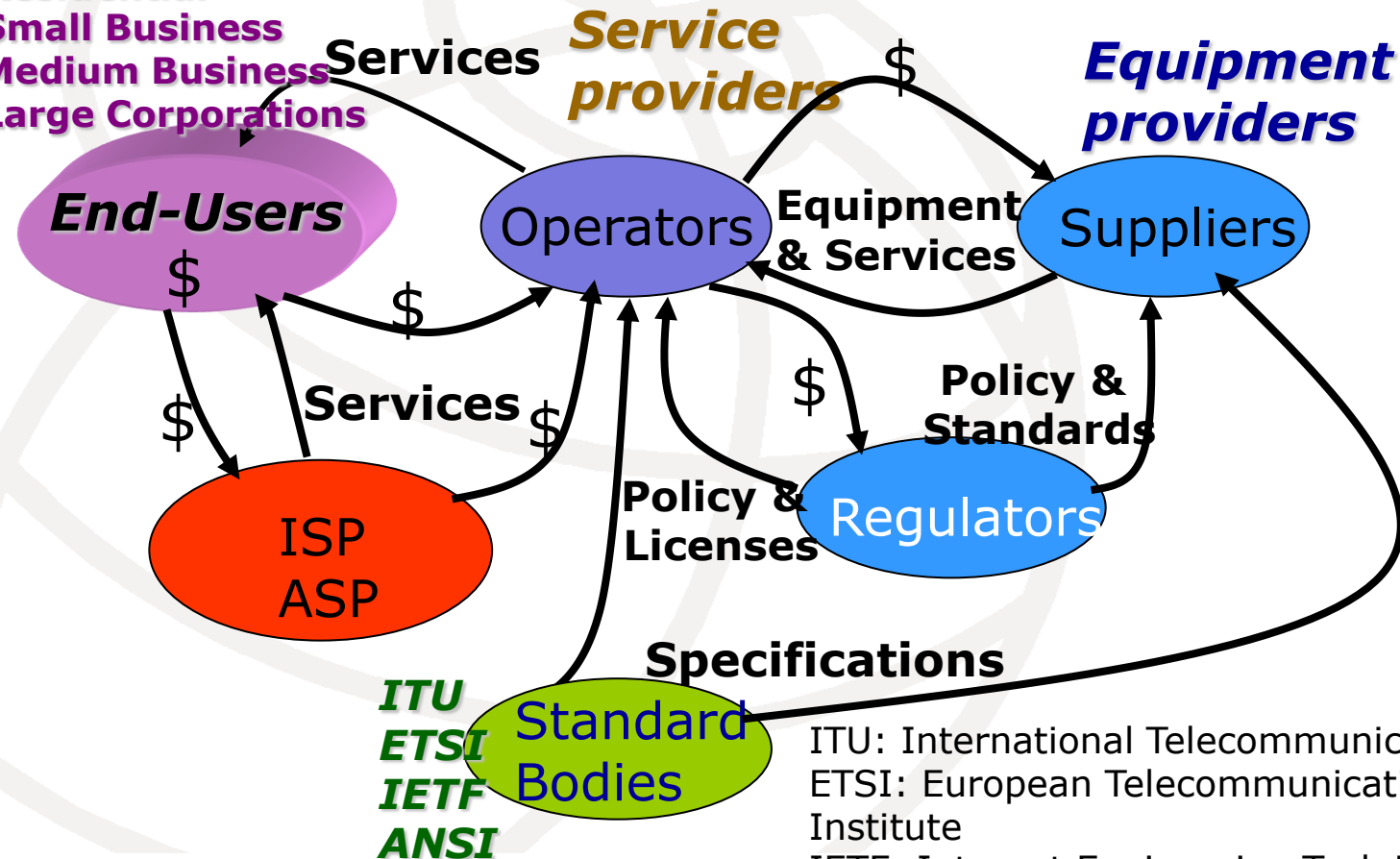
Service Provider (retail)

application usage

Network usage

End User

Retailer

application brokering network usage

Network Operator's core business

network subscription
package subscription
network usage
application usage

Access Provider

Connectivity Provider

LD Connectivity Provider

roaming

LD: Long Distance

NGN Driving Services and OTTs Players in new service definition and interrelations

Residential
Small Business
Medium Business
Large Corporations

Services

Service providers

$

Equipment providers

End-Users

$

Operators

Equipment & Services

Suppliers

$

Services

$

$

Policy & Standards

ISP
ASP

Policy & Licenses

$

Regulators

ITU
ETSI
IETF
ANSI

Specifications

Standard Bodies

ITU: International Telecommunication Union
ETSI: European Telecommunication Standards Institute
IETF: Internet Engineering Task Force
ANSI: American National Standards Institute
ISP: Internet Service Provider

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NGN Driving Services and OTTs
OTT players (web based)

- **Skype**

- **Google voice**

- **WhatsApp***

- **LINE**

- **Twitter**

- **Facebook**

- **Linkedin**

- **Paypal**

- **Tencent QQ**

- **…. And many others**

* WhasApp recently acquired by Facebook but maintaining original objectives

NGN Driving Services and OTTs
OTT main services

- VoIP + videoconference
- Content delivery
- Messaging
- Chat
- Social networking
- Instagram
- Wallet
- … and many other innovations

NGN Driving Services and OTTs
OTT positioning

OTT services volume*

• **Skype:** at 2014 **300** million users with around **70** million connected simultaneously and with an average call holding time of **7** minutes. Around **2** billion minutes per day

• **WhatsApp:** at 3Q 2014 **600** million active users with **11** billion messages send, **20** billion received and **325** million photos per day

• **Facebook:** at 1Q 2014 **1200** million users (**680** million on mobile), **700** billion minutes and average duration of **20** minutes

*Ref: http://www.statisticbrain.com/, Telegeography and others

NGN Driving Services and OTTs
OTT positioning

OTT services volume …

•**Twitter:** at 2Q 2013 **555** million users and **58** million tweets per day

• **LINE:** at 1Q 2014 **400** million users with highest number in Japan

• **LinkedIn:** at 4Q 2013 **300** million users, **2,1** million groups and **200** conversations per minute.

• **PayPal:** at 1Q 2014 **150** million active accounts with **2,8** billion payments at 2013

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NGN Driving Services and OTTs QoS domains

- Quality of Service (QoS) and Quality of Experience (QoE) are fundamental for customer perception and service acceptance:

- Domains for QoS evaluation:
  - **Grade of Service**
    - Service accessibility: Capability to access a service
    - Connection establishment: Capability to get connection
    - Information transfer: Quality of information delivery
  - Reliability: Failure probability
  - Availability: Probability of system being active
  - Survivability: Capability to provide service in abnormal conditions
  - **Security:** Information and systems protection level
  - Qualitative: Intelligibility, audibility, visualization, etc. of information content as derived from user perception

NGN Driving Services and OTTs QoS demarcations

• QoS has to be maintained at end to end path through the entire network including the access, edge and core networks of all involved network players: Correct **traffic dimensioning** is required for the whole path
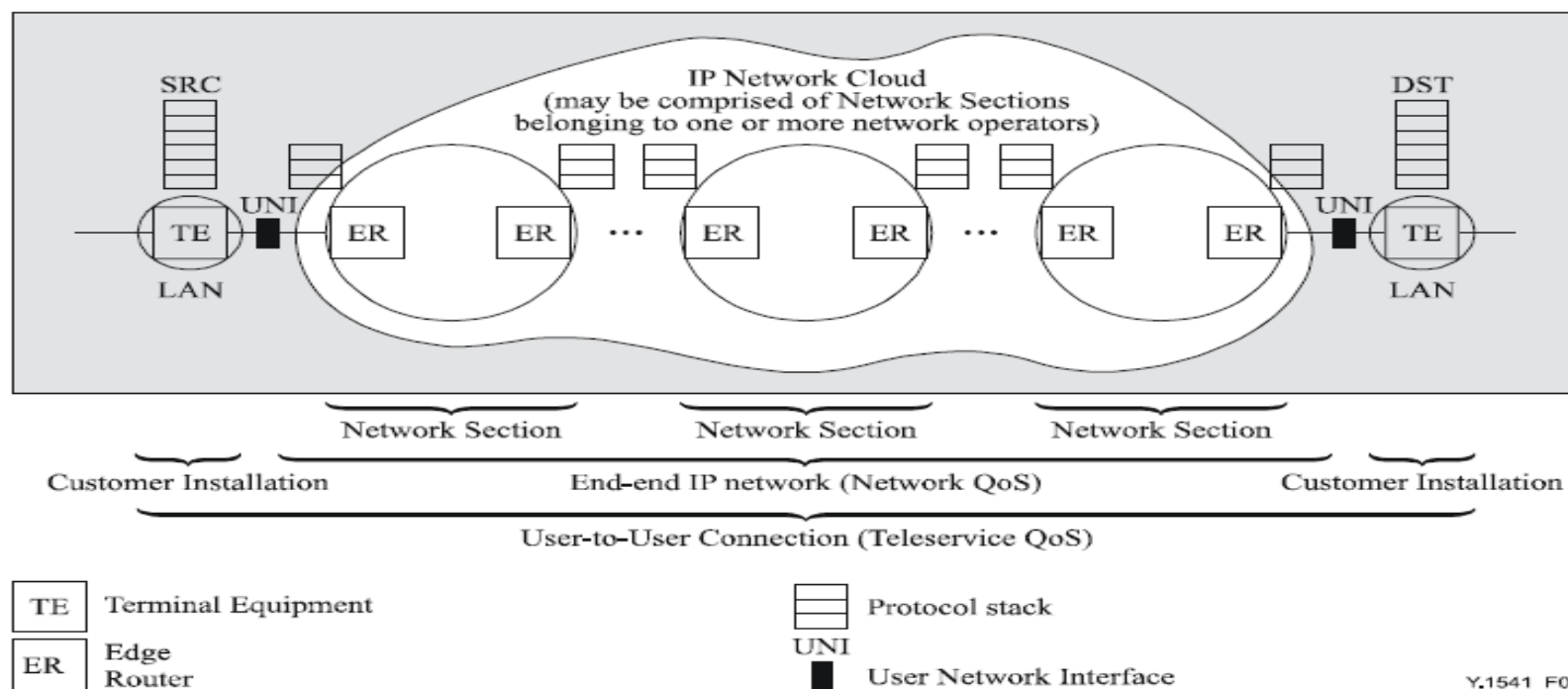
Figure 1/Y.1541 – UNI-to-UNI reference path for network QoS objectives

NGN Driving Services and OTTs QoS requirements

Table 2/Y.1541 – Guidance for IP QoS classes

QoS class	Applications (examples)	Node mechanisms	Network techniques
0	Real-time, jitter sensitive, high interaction (VoIP, VTC)	Separate queue with preferential servicing, traffic grooming	Constrained routing and distance
1	Real-time, jitter sensitive, interactive (VoIP, VTC).		Less constrained routing and distances
2	Transaction data, highly interactive (Signalling)	Separate queue, drop priority	Constrained routing and distance
3	Transaction data, interactive		Less constrained routing and distances
4	Low loss only (short transactions, bulk data, video streaming)	Long queue, drop priority	Any route/path
5	Traditional applications of default IP networks	Separate queue (lowest priority)	Any route/path

NOTE – Any example application listed in Table 2 could also be used in Class 5 with unspecified performance objectives, as long as the users are willing to accept the level of performance prevalent during their session.

NGN Driving Services and OTTs QoS requirements and provisioning

	TCOs				OTTs
Service classes/QoS	Packet loss probability	Packet delay	Jitter	Availability	All indicators
Stream critical (network control, IMS, etc.)	<10e-6	<100 ms	<10 ms	>99.999%	Best effort (without guarantee)
Stream high priority (VoIP, video, etc.)	<10e-3	<100 ms	<10 ms <30 ms	>99.999%	Best effort (without guarantee)
Stream medium priority (buffered video, FTP, etc.)	<5x10e-2	< 400ms	<100 ms	>99.99%	Best effort (without guarantee)
Elastic or Best effort (Web, TCP, e-mail, etc.)	Without guarantee	Without guarantee	Without guarantee	Without guarantee	Best effort (without guarantee)

NGN Driving Services and OTTs Summary of Key Factors

- Exploit the h**igh potential** for new NGN services and drive the network modernization with capture of **new revenues**

- Analyze **new business chain** from content to delivery and **watch** OTT services capabilities

- Provide attention to **Quality of Service, specially to packet delay** in VoIP and **security** issues for data

- Follow-up and exploit know-how on **Consumer experience**

International Telecommunication Union

Committed to connecting the world