

TERMS OF REFERENCE

Report on Implementation for Evolving Telecommunication Infrastructure for Developing Countries:
Technical, Economic and Policy Aspects

Contents

- 1. Objectives..... 1
- 2. Scope..... 2
- 3. Telecommunication/ICT Infrastructures and their technology, economic and policy aspects 2
 - 3.1 Mobile Broadband Access Networks 2
 - 3.2 Fixed Broadband Access Networks 2
 - 3.3 Broadband Access for rural applications 2
 - 3.4 Core Networks 2
 - 3.5 Home Networks 2
 - 3.6 Network Operation and Management 2
- 4. Key issues for broadband networks..... 3
 - 4.1 Universal access features..... 3
 - 4.2 Emergency services..... 3
 - 4.3 Environmental issues 3
- 5. Convergences over broadband networks..... 3
 - 5.1 IPTV 3
 - 5.2 Cloud Computing 3
 - 5.3 Smart Grid 3
- 6. Comparisons 3
- 7. Expected Results 3

1. Objectives

The “Report on Evolving Telecommunication Infrastructure for Developing Countries” aims at presenting an organized view of the set of technologies, economic and policy aspects that supports key convergences such as IPTV, cloud computing, smart grid and standards available in the market that has high potential of usage in developing countries.

The Report may be of use by ITU-D Study Group 1 Question 1.

2. Scope

The Report introduces essential telecommunication infrastructures and their technologies, economic and policy aspects supporting broadband for fixed and mobile environments.

This Report describes technologies, economic and policy aspects for deploying telecommunication Networks, including rural applications, core networks and home networks as well as network operation and management. Based on this, the Report identifies key issues for broadband networks, both wireless and wire-line, such as universal access, emergency services and environmental aspects as well as address various convergence issues to be considered for the developing countries when use and facilitate broadband, for example, cloud computing and smart grid.

3. Telecommunication/ICT Infrastructures and their technology, economic and policy aspects

Infrastructure is central for enabling universal, sustainable, ubiquitous and affordable access to information and communication technologies (ICTs) and services for all.

ICT infrastructure is present in access, core networks and households, to build such structure each network segment has its own demands and may require different technologies for effective implementation. This section describes key technologies, economic and policy aspects for evolving telecommunication infrastructure.

3.1 Mobile Broadband Access Networks

- IMT

3.2 Fixed Broadband Access Networks

- Twisted-pair based access
- Coaxial based access
- Optic based access (GPON, etc.)
- Hybrid

3.3 Broadband Access for rural applications

- Fixed and wireless broadband access: Use of Frequencies below 1GHz
- Satellite

3.4 Core Networks

- IP based core networks
- IMS based core network
- NGN based core network

3.5 Home Networks

- LAN
- Femtocells

3.6 Network Operation and Management

- OAM&P
- Management architectures and technology
- Accounting, charging and billing

4. Key issues for broadband networks

Broadband networks are essential for building and operating the information society. There are many issues to be considered when building and operating broadband networks, not only from the technology point of view but other perspectives must be considered, such as social and environmental aspects. This section identifies and describes key issues for broadband networks that should be considered in developing countries.

4.1 Universal access features

- ITU related Documents

4.2 Emergency services

- ITU related Documents

4.3 Environmental issues

- Standards
- Assessing the environmental impact

5. Convergences over broadband networks

One of consequences of deploying broadband networks is facilitating convergences. There are two different types of convergences; within same industries (may be called internal convergences such as IPTV and Cloud Computing) and between different industries (may be called external convergences such as Smart Grid and ITS). This section describes key features and trends of dominant convergences over broadband networks which will be needed further considerations for developing countries.

5.1 IPTV

- ITU related Documents

5.2 Cloud Computing

- ITU related Documents

5.3 Smart Grid

- ITU related Documents

6. Comparisons

The Report also aims to compare different infrastructure technologies

7. Expected Results

The Report will be a simple straight forward way to present relevant information on existing ICT infrastructure and related standards.

The Report can be submitted to Question 1/1 as soon as it is finalized.

BDT will keep References to ITU Recommendations and Reports continuously updated.