



ITU-D Sector Regional *Initiatives* and *Activities* for the Arab Region,

ITU-D Regional Development Forum 2010 on NGN and Broadband
for the Arab Region

“NGN and Broadband, Opportunities and Challenges”

Cairo, Egypt, 13 - 15 December 2010

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Agenda

- ITU Overview
- BDT Strategy
- BDT Programs and related Actions on NGN/Broadband
- BDT Regional Initiatives related to NGN/Broadband



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ITU in brief

- Founded in 1865
- Leading United Nations Agency for ICTs.
- ITU Membership includes:
 - 192 Member States (Official Designations)
 - 547 Sector Members
 - 151 Associates
- ITU has three Sectors:
 - Radiocommunication Sector (ITU-R)
 - Telecommunication Standardization Sector (ITU-T)
 - Telecommunication Development Sector (ITU-D)




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ITU's Global Presence



5 regional offices, 8 area offices
HQ in Geneva, Switzerland

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NGN & BROADBAND from BDT OPERATIONAL PLAN 2011-2014



BDT MISSION

The function of ITU-D shall be to foster international cooperation and solidarity in the delivery of **technical assistance** and in the creation, development and improvement of telecommunication/ICT equipment and networks in developing countries. ITU-D is required to discharge the Union's dual responsibility as a United Nations specialized agency and executing agency for implementing **projects** under the United Nations development system or other funding arrangements, so as to facilitate and enhance telecommunication/ ICT development by offering, organizing and coordinating technical cooperation and assistance activities.



BDT GOALS

The strategic goal of ITU-D is threefold, and includes:

- To *promote the availability* of **infrastructure** and foster an **enabling environment** for telecommunication/ICT infrastructure development and its use in a **safe and secure manner**
- To **provide assistance** to developing countries in bridging the digital divide by achieving broader telecommunication/ICT-enabled socio-economic development
- To **expand the benefits** of the information society to the membership in cooperation with public and private stakeholders, and to **promote the integration** of the use of telecommunications/ICTs into the broader economy and society as drivers of development, innovation, well-being, growth and productivity globally.



HYDERABAD DECLARATION ...

7 clauses **Directly** related to our Forum

5 The level of access to telecommunications/ICTs has improved dramatically across the world. Mobile cellular has been the most rapidly adopted technology in history. Likewise, **broadband** adoption has grown significantly since its introduction. Rapid advances in the use of **broadband** technologies to propel innovations and new services are expected to continue in the coming years.

6 However, the digital divide remains, and is compounded by **disparities in broadband access** and infrastructure between and within countries, in particular between urban and rural areas. Rapid development of telecommunication/ICT infrastructure in rural and remote areas, using suitable technologies, is an immediate priority for many countries. Another major concern for many administrations is **the lack of infrastructure to support telecommunication/ICT development in rural areas**, for which suitable and affordable solutions have to be identified.

7 **Broadband access and usage**, supported by **strong national backbones**, are increasingly considered as **essential services** that need to be universally available to all citizens in order to develop networked economies and information societies.

9 **Wireless broadband technologies**, in particular, and the services and applications enabled by these networks, can foster the widespread use of affordable and accessible telecommunications/ICTs.

10 **Next-generation networks (NGNs)** hold great promise in this regard. Ensuring seamless migration to NGNs also raises the challenge of ensuring interconnectivity, interoperability and end-to-end quality of Service..



HYDERABAD DECLARATION ...(continued)

Directly related to our Forum

11 Similarly, migration to **all-IP networks** has given rise to a need for adherence to established allocation policies, development of appropriate national strategies, and capacity building to address the migration of networks from IPv4 to IPv6 and encourage the deployment of IPv6, taking into account regional and national requirements.

.....

24 The Hyderabad Action Plan is a comprehensive package that will promote the equitable and sustainable development of telecommunication/ICT networks and services. It consists of **study group Questions, five programmes**, and **regional initiatives** that address the specific needs of the regions.

The identified five programmes are:

- Programme 1: Information and communication infrastructure and technology development
- Programme 2: Cybersecurity, ICT applications and IP-based network-related issues
- Programme 3: Enabling environment
- Programme 4: Capacity building and digital inclusion
- Programme 5: Least developed countries, countries in special need, emergency telecommunications and climate-change adaptation.



Excerpts from Situation Analysis of OP 2011-2014,

- Over the last five years, the level of access to telecommunications/ICTs has improved significantly across the world. Mobile cellular has proven to be the most rapidly adopted technology in history, and **the total number of broadband subscriptions has grown more than threefold**. Yet, there still remains a substantial **broadband divide** (see below), both **within and among countries**. Particular efforts will need to be made to support the availability of **infrastructure** and **services** in underserved and rural areas, in particular in developing countries¹, as well as among people with special needs (marginal and vulnerable populations, including women, children, indigenous peoples, older persons and persons with disabilities).



Excerpts from Situation Analysis of OP 2011-2014, (contd.)

- 6.1.2 Access to broadband

National **broadband infrastructures** are becoming the foundation of networked economies and information societies. Following the lead of some countries which have made it **part of their universal service obligations**, **broadband access** will be increasingly considered as a basic service which should be made universally available to all citizens. To support this, governments are encouraged to promote **both supply-side and demand-side policies** that create incentives for **broadband backbone** and access network deployment. Market structures that promote **broadband** and related services at competitive prices will need to be encouraged. Governments are also encouraged to promote demand-side policies that advance **broadband** connectivity of schools, libraries and other public institutions. Promoting **broadband** access will need to take into consideration the particular starting conditions in developing countries, where fixed-line penetration has been historically low and mobile penetration high. There will be an ongoing need to provide assistance and share best practices on the deployment of appropriate infrastructure technologies (e.g. **next-generation networks**, whether wireline, wireless and/or mobile-based) and policies that promote investment in infrastructure and service-based competition.



ITU-D objectives.. Excerpts

The objectives of ITU-D are:

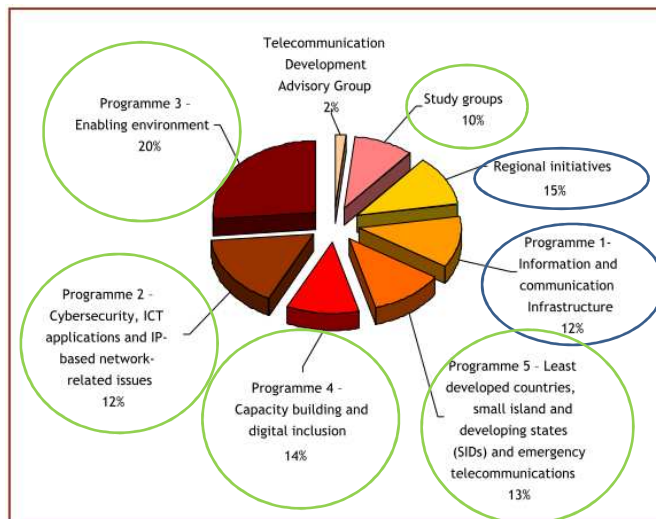
- 6.5.1 Objective 1

To foster international cooperation, among ITU-D members and other stakeholders, on telecommunication/ICT development issues, by providing the pre-eminent forum for discussion, information sharing and consensus building on telecommunication/ICT technical and policy issues.

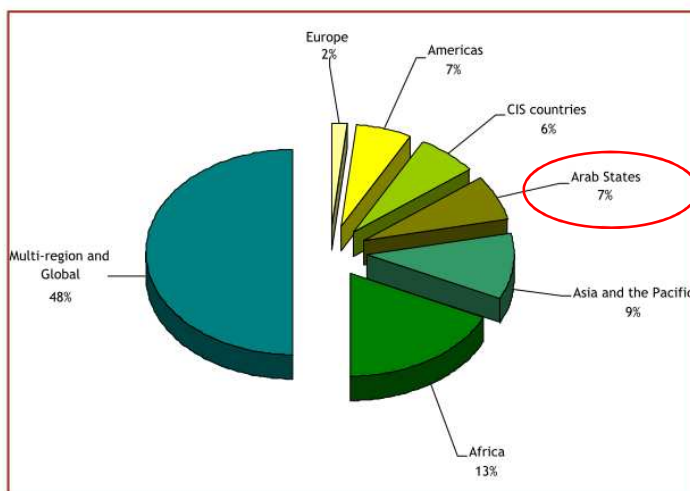
- 6.5.2 Objective 2

To assist the membership in maximizing the utilization of appropriate new technologies, including **broadband**, in developing their telecommunication/ICT infrastructures and services and in designing and deploying **resilient** telecommunication/ICT network infrastructures.

% Budget allocation by programme ..2011



% Budget allocation by region 2011





BDT Programs & NGN/Broadband



Priority areas for Program 1

- 3.1 Spectrum management and radio monitoring
- 3.2 Broadcasting
- **3.3 Next-generation networks**
 - 3.3.1 providing assistance to Member States on migration strategies and with the design, deployment and maximization of new network architectures, including roll-out of both wired and wireless **broadband** technologies;
 - 3.3.2 assisting countries in planning the introduction of new network elements by making use of specialized planning tools;
 - 3.3.3 assisting countries in the digitization of analogue networks and in applying affordable wired and wireless technologies, including improvements in quality of service and network infrastructure security;
 - 3.3.4 assisting countries in ensuring extensive networking, interoperability of ICT infrastructure and the development of tools, services and applications to facilitate accessibility of ICTs for all;
 - 3.3.5 assisting countries in optimizing connectivity through regional backbones, in order to reduce interconnection costs and optimize traffic routing;
 - 3.3.6 disseminating case studies and information related to new technologies, such as **NGNs**, suited to the needs of developing countries;
 - 3.3.7 organizing symposia, seminars and workshops, as appropriate, taking into consideration outputs of related ITU-D study group activities;
 - 3.3.8 assisting countries in the deployment and migration of their existing networks to **NGN**.
- 3.4 Mobile communications (2G, 3G, 4G, etc.)



Priority areas for Program 1 (contd...)

- 3.5 **Broadband** networks
 - 3.5.1 facilitating affordable access to **broadband** Internet services for citizens, through appropriate institutions;
 - 3.5.2 use of affordable **broadband** by rural communities;
 - 3.5.3 enhancing the safety of populations through the establishment of public-safety **broadband** networks.
 - 3.5.4 providing assistance in the development of national ICT **broadband** network plans;
 - 3.5.5 providing assistance in the deployment of wired and wireless **broadband** infrastructure;
 - 3.5.6 providing assistance in the selection of suitable access technologies to bring **broadband** telecommunications to rural and poorly served areas;
 - 3.5.7 providing assistance in the selection of appropriate green power supply;
 - 3.5.8 implementing projects on the provision of ICT services and applications, through suitably designed business models that can achieve financial and operational sustainability, by a variety of organizations, including small enterprises, local governments and non-governmental agencies in rural and remote areas;
 - 3.5.9 providing capacity building for local experts to identify, plan, implement and operate networks and facilities;
 - 3.5.10 disseminating information and analyses of different countries' experiences with the use of different technologies and services, through methods such as publications, symposia, seminars and workshops, taking into account outputs of related ITU-D study group activities.
- 3.6 Rural communications
- 3.7 Outside plant



Output 4 – Programme 1 :

Information and communication infrastructure and technology development

- **2011 expected results:**

Expected results	Key performance indicators	Relevant actions, activities and/or projects
Enhanced capacity of regulators Increased number of trained telecom/ICT professionals in developing countries	Number of countries participating and people trained on the subject, Feedback from event participants	11845 Cross-regional seminar on broadband access to telecom networks. Challenges and solutions (EUR/CIS/ASP)
Increased number of professionals trained in efficient spectrum management	Number of countries participating and people trained on the subject Feedback from event participants	11846 Cross-regional seminar on broadband access, broadcasting and efficiency of frequency-spectrum use in EUR/CIS/ASP
Increased broadband access and network deployment using IP Skills transfer to technical staff for better management of the network	Number of guidelines and their impact on increasing access to the broadband Number of experts for training in the use new technologies	11848 Guidelines on migration to NGN and infrastructure development
Improved framework for facilitating broadband uptake, covering new technologies, regulatory and policy initiatives, including migration to NGN	Number of countries provided with access to broadband Number of new partnerships fostered for uptake of broadband Increase in broadband penetration rates and feedback from members	11849 Master plan for broadband access



Output 4 – Programme 1 : (... Contd)

Information and communication infrastructure and technology development

- **2011 expected results:**

Expected results	Key performance indicators	Relevant actions, activities and/or projects
Publication of report	Number of studies and impact of the guidelines on countries. Feedback from members	11857 Report on broadband network trends
Country-specific guidelines and strategies	Number of studies and impact of the guidelines on countries Feedback from members	11858 Assistance for master plan for broadband networks
Broadband infrastructure master plan	Number of master plans based on this plans Number of km of optical fibre installed in each country Interconnection and access to submarine cables	11864 Master plan on implementation of optical fibre networks in Central Africa
Availability of a master plan on bridging broadband networks gaps in Africa Enhance a cooperation and partnership on broadband network development in Africa	Number of countries covered by the study	11867 Broadband network gap assessment and analysis in Africa







Output 4 – Programme 1 : (... Contd)

Information and communication infrastructure and technology development

- **2012-2014 expected results:**

Expected results	Key performance indicators	Relevant actions, activities and/or projects
Assistance provided on spectrum management, broadcasting, broadband , NGN and mobile communications, including rural and remote areas ; Provision of technical expertise Project development and Implementation ; Mobilization of extrabudgetary resources, and partnerships ; Master plans and best-practice guidelines for rural communications ; Symposia and seminars and awareness-raising ; New Version of SMS4DC ; Demand-side policies that advance broadband connectivity of schools, libraries and other public institutions ; Guidelines for transition from analogue to digital broadcasting Guidelines for migration to new-generation networks	Number of countries assisted for building conformance and interoperability testing Centres Number of new partnerships/ MoUs for broadband deployment signed ; Feedback from members ; Availability of new SMS4DC version ; Number of Institutions (schools, hospitals etc.) connected to broadband ; Number of countries assisted for broadband infrastructure, including rural and remote areas ; Number of countries assisted for customizing the guidelines for transition from analogue to digital broadcasting Number of events planned and delivered on time ; Number, diversity and seniority of participants at events ; Availability of work plans for study groups and BDT ; Number of contributions provided to ITU-D study groups	Assisting countries for building conformance and interoperability testing centres ; Assisting countries for spectrum management ; Assisting countries for transition from analogue to digital broadcasting ; Assisting countries for broadband connectivity, including rural and remote areas ; Assisting countries for migration to new-generation networks

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Output 6 – Programme 3 - Enabling environment		
<ul style="list-style-type: none"> 2011 expected results: 		
Expected results	Key performance indicators	Relevant actions, activities and/or projects
Improved access to broadband services in urban and rural areas	Implementable broadband master plan and UAS policy	11915 Broadband master plan and UAS policy
Enhanced knowledge and skills of policy-makers and national telecommunication/ ICT regulators	Active participation of regulators and policy-makers from developing countries in training programmes Feedback from members	11995 Broadband strategies toolkit

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Output 8 – Programme 5 - Special programme for LDCs, countries in special need, emergency telecommunications and climate-change adaptation		
2011 Expected results:		
Expected results	Key performance indicators	Relevant actions, activities and/or projects
Regulatory policy for stimulating broadband in rural and remote areas by creating enabling environment for investment	Number of guidelines prepared	11883 Technical assistance on preparing regulatory guidelines on broadband through universal service
2012-2014 Expected results		
Expected results	Key performance indicators	Relevant actions, activities and/or projects
Increased average telephone and broadband density in LDCs and SIDS	Average telephone and broadband density in LDCs and SIDS	TBD



Output 9 – **Regional initiatives** - ARAB STATES REGIONAL INITIATIVES

The Arab States regional initiatives are intended to address specific telecommunication/information and communication technology (ICT) priority areas, through partnerships and resource mobilization to implement small-, medium- and large-scale projects.


Under each regional initiative, **projects** will be developed and implemented to meet the region's needs.



BDT Regional Initiatives & NGN/Broadband



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Output 9 – Regional initiatives - ARAB STATES REGIONAL INITIATIVES

Overall objectives for the period 2011-2014:

1 Broadband access network

Objective: To assist Member States in the implementation and development of **broadband** access networks in urban and rural areas.

Expected results :


- * Establishment of **national and regional strategic plans** and work programmes for the telecommunication/ICT sector to meet the needs of the Arab countries in this field
- * Improved **broadband network infrastructure** for the provision of good-quality and affordable telecommunication/ICT services in urban and rural areas, including migration to next-generation networks (NGNs)
- * Development of **ICT applications that can support multilingualism** and address local needs
- * Development of human resources to address regulatory, technical and economic issues related to **broadband** communication networks, **NGNs and migration to NGN**.

2 Digital broadcasting


3 Open-source software

4 Arabic digital content

5 Cybersecurity





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Output 9 – Regional initiatives - ARAB STATES REGIONAL INITIATIVES

- 2011 expected results:

Expected results	Key performance indicators	Relevant actions, activities and/or projects
Development of human resources to address regulatory, technical and economic issues related to broadband communication networks, NGNs and migration to NGN. Development of ICT applications that can support multilingualism and address local needs Establishment of national and regional strategic plans and work programmes for the telecommunication/ ICT sector to meet the needs of the Arab countries in this field Improved broadband network infrastructure for the provision of good-quality and affordable telecommunication/ICT services in urban and rural areas, including migration to NGN	Number of countries assisted Number of persons trained	11913 Broadband access network

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Output 9 – Regional initiatives - ARAB STATES REGIONAL INITIATIVES			
<ul style="list-style-type: none"> • 2012-2014 expected results: • ARB Regional Initiative 1: Broadband connectivity 			
Expected results	Key performance indicators	Relevant actions, activities and/or projects	
National ICT master plan meeting the requirements of developing countries Improved broadband infrastructure (including migration to NGN) and access to affordable ICT services in urban and rural areas Development of ICT applications that can support multilingualism and address local needs Enhanced skills in broadband communication network for the relevant human resources	Number of published plans Percentage of fibres to copper Percentage of households and business connected to broadband International bandwidth Number of IXPs Number of members in IXPs Number of regional sites Number of trainee days	Development of guidelines, Surveys, and Technical assistance	

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<h2>Projects approved 2009-10 and in the pipeline</h2>			
<ul style="list-style-type: none"> • 8. Project number: 9RAB09018 • Project title: ITU Connect a School, Connect a Community Toolkit • Estimated start date: October 2009 • Estimated end date: December 2011 • Beneficiary country: All Arab countries • ITU Project Manager: Susan Schorr • Signed: 22 October 2009 • Brief description: • This project aims at promoting broadband school connectivity so that schools can be used as community ICT centres that ensure ICT access and use by all people, including those in rural areas, marginal urban areas and isolated areas, with particular focus on disadvantaged and vulnerable groups such as women and girls, indigenous people, persons with disabilities and youth and children, This will be achieved by identifying best practices on school connectivity related to technology options for connecting schools, running school-based ICT centres and equipping schools with assistive technology for persons with disabilities, through the development of an online toolkit platform, modules and training for ICT and education policy-makers and regulators. 			



Projects active in 2010 for the Arab region

Region	Project reference	Project title/description
ARAB STATES	9RAB09017	FEASIBILITY STUDY ON LOW-COST WIRELESS BROADBAND INFRASTRUCTURE



Questions Directly Related to NGN & Broadband (from 01/01/2011 to 31/12/2011)

- Question 7-3/1:** Implementation of universal access to **broadband** services
- Question 12-3/1:** Tariff policies, tariff models and methods of determining the costs of services on national telecommunication networks, including **next-generation networks**
- Question 25/2:** Access technology for **broadband** telecommunications including IMT, for developing countries
- Question 26/2:** Migration from existing networks to **next-generation networks** for developing countries: technical, regulatory and polic



Directly Related PP Resolutions

Resolution 137: Next-generation network deployment in developing countries



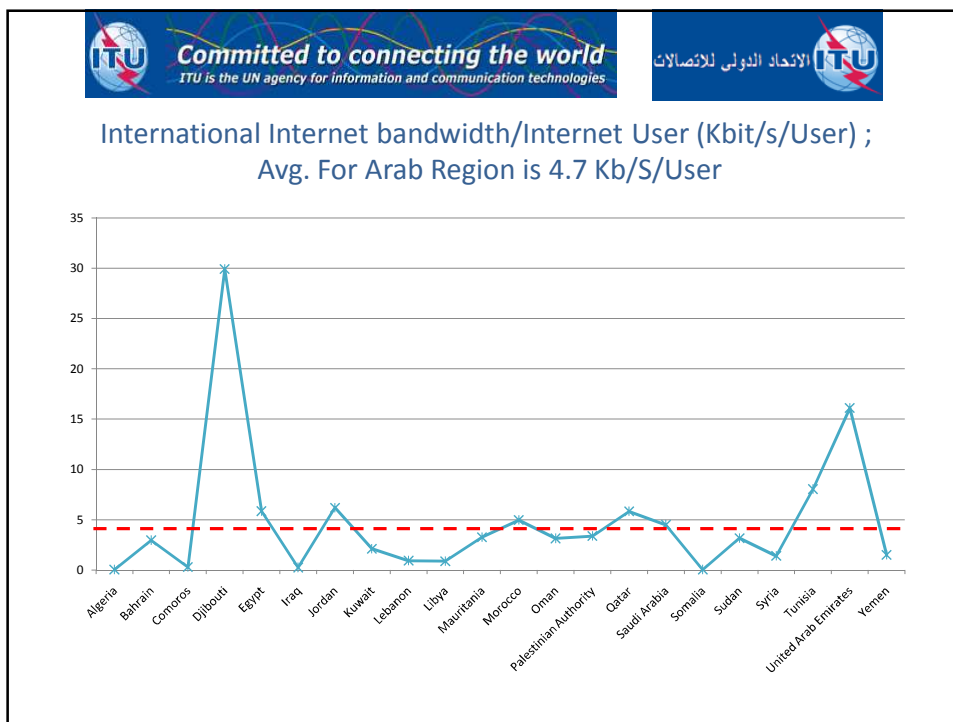
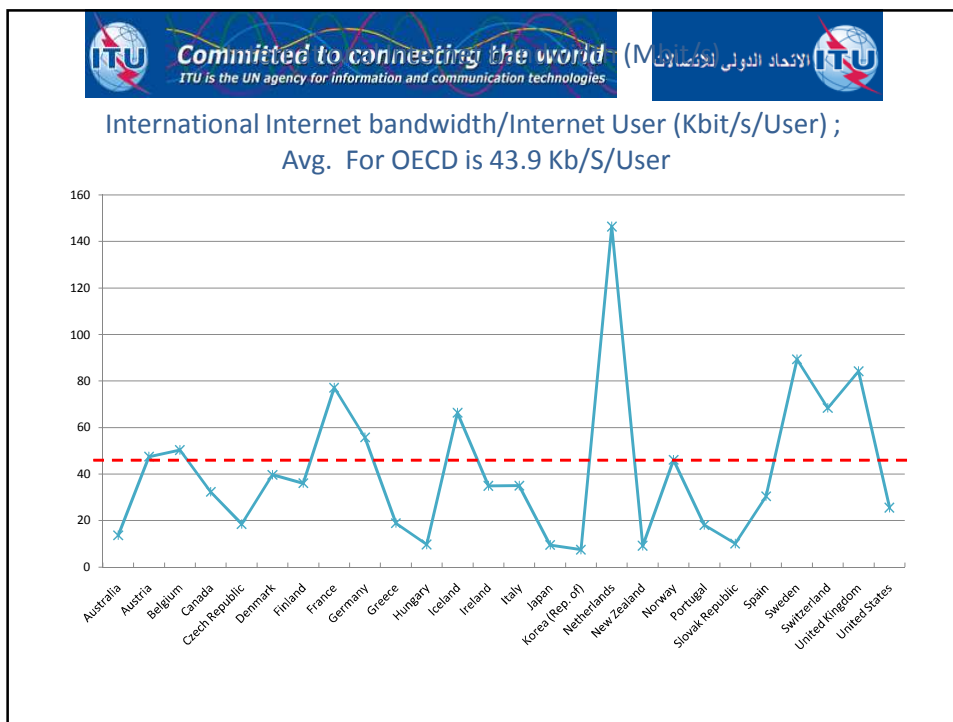
Q & A



Thanks for Listening



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Elements of The Broadband EcoSystem

- Policy, Legislation & Regulation
- People
- Content
 - Registration
 - Material Development and Deployment
- Access Devices
- Network Elements:
 - Connections:
 - Wired
 - Access Cables
 - Backbone
 - Backhauling
 - Wireless
 - Spectrum management
 - Exchanges
 - Local & Central.
 - Internet Exchange Points



2009	Arab Region	World	Percentage
Mobile cellular subscriptions (Millions)	282	5,282	5.34%
Population (Millions)	352	6,850	5.14%
Estimated Internet users (Millions)	88	2,084	4.22%
Mobile broadband subscriptions (Millions)	34	940	3.62%
Gross Domestic Product (GDP) (Billion US\$)	2,071	64,994	3.19%
Fixed telephone lines (Millions)	33	1,197	2.76%
Fixed broadband subscriptions (Millions)	8	555	1.44%