National Broadband Plans & Universal Service Policy

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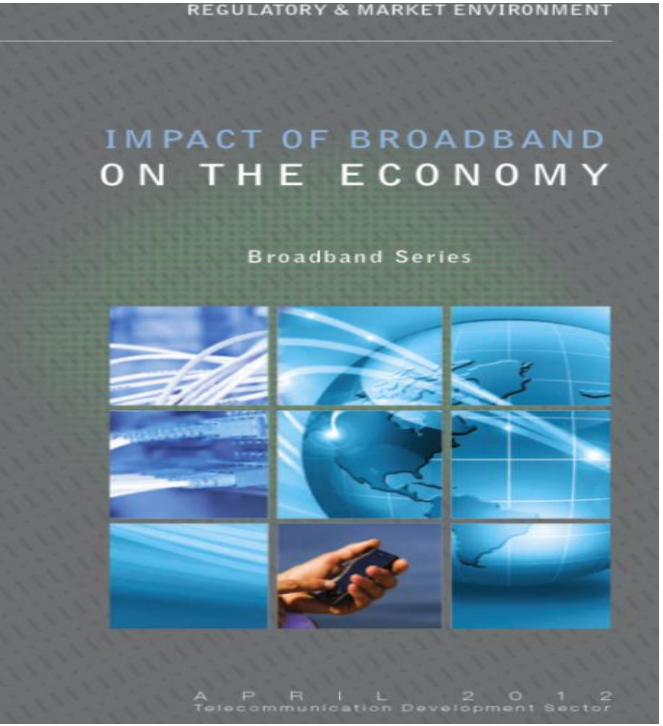
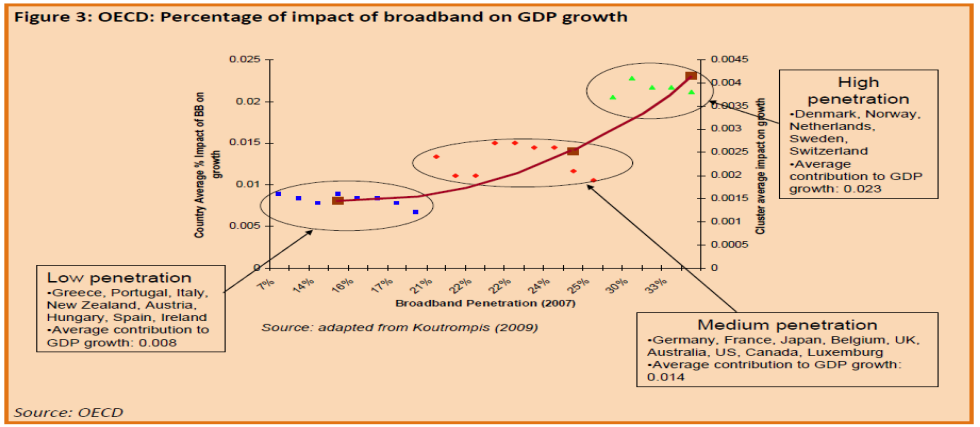
Legal Disclaimer

9:00 a.m. - 10:00 a.m. **(Cairo Local Time)**	**National Broadband Plans and Universal Service Policy** **John Roman**
10:00 a.m. - 10:30 a.m.	Questions and Discussion
10:30 a.m. - 11:30 a.m.	Using USF for demand Creation Ralph Corey
11:30 a.m. - 12:00 p.m.	Questions and Discussion

Broadband Transforms

BROADBAND Access to THE INTERNET Fuels Transformation



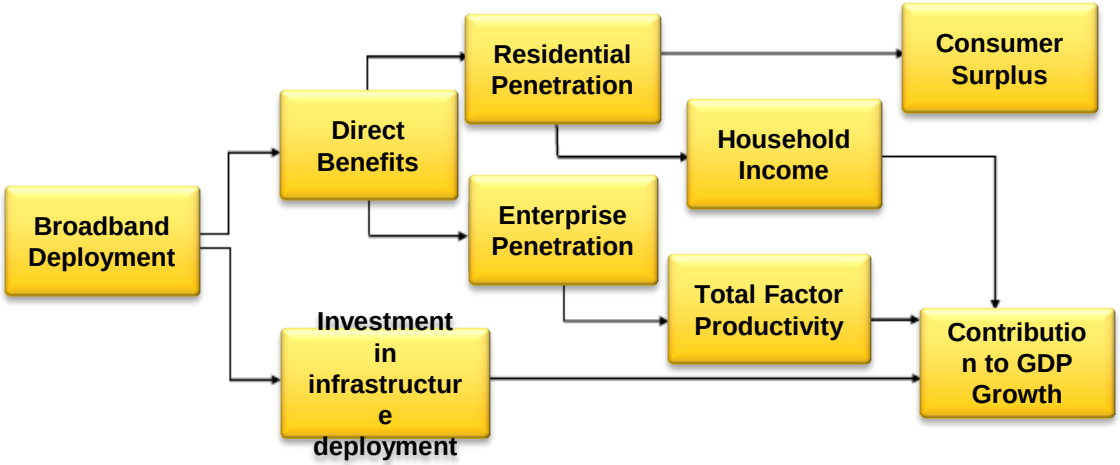


- Impact greater with greater penetration
- Threshold after which benefits starts to flourish
- So far no end to increase in benefits

= Urgency to accelerate Broadband

Economic Effects of Broadband

The economic impact of broadband manifests itself through four types of effects (see Figure 1)



DATA REQUIREMENTS TO MEASURE THE ECONOMIC IMPACT OF BROADBAND
By Dr. Raul L. Katz (*) – 2010 ITU WICT conference

Our Objective – Unlock the Benefits

Economic growth: Increasing broadband penetration boosts economic growth ~ 1% or more.[1]

Jobs: In Latin America, increasing penetration 5.5% to 7.7% would generate estimated 378,000 new jobs.[2]

Health care: Telemedicine provides better access to care, reduces travel, and facilitates rapid diagnosis and treatment.[3]

Education: Household Internet access is associated with better educational performance.[4]

SME's: Studies show that Broadband is essential to the success of small and medium enterprises.[5]

Objective: Broadband Adoption: Subscription, Device, and know how

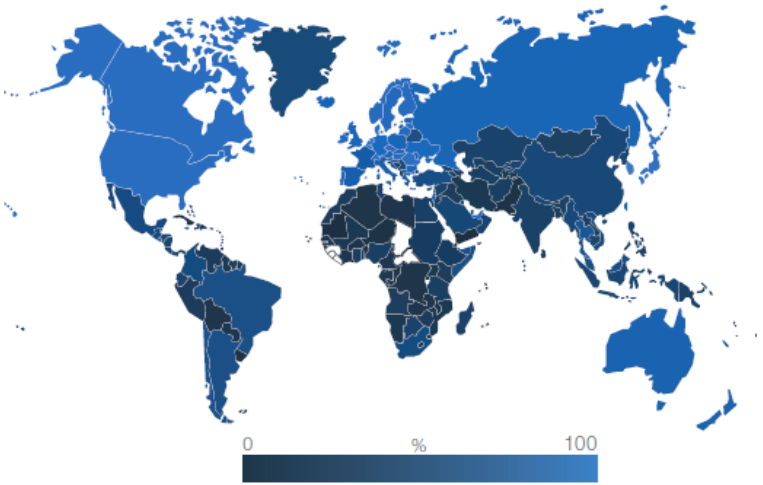
[1] **Building broadband: Strategies and policies for the developing world**
Yongsoo Kim, Tim Kelly, and Siddhartha Raja Global Information and Communication Technologies (GICT) Department
World Bank January 2010
[2] Dr. Raul L. Katz, "Estimating broadband demand and its economic impact in Latin America," Sept. 4, 2009
[3] Dutta, Soumitra, and Irene Mia. 2008. The Global Information Technology Report 2006-2007:
Connecting to the Networked Economy. Basingstoke, U.K.: Palgrave Macmillan.
[4] ITU, Measuring the Information Society,"2010.
5 http://www.sba.gov/advocacy/809/11401, http://www.broadband.gov/plan/13-economic-opportunity/

What is Broadband

Lots of options:
Not 56k, or 256k, Maybe 1-2 Mbps,
SHOULD BE 5 Mbps, 10 Mbps, 100 Mbps

Countries with % connections to Akamai > 5 Mbps, shown on a sliding scale with light blue showing 100%.

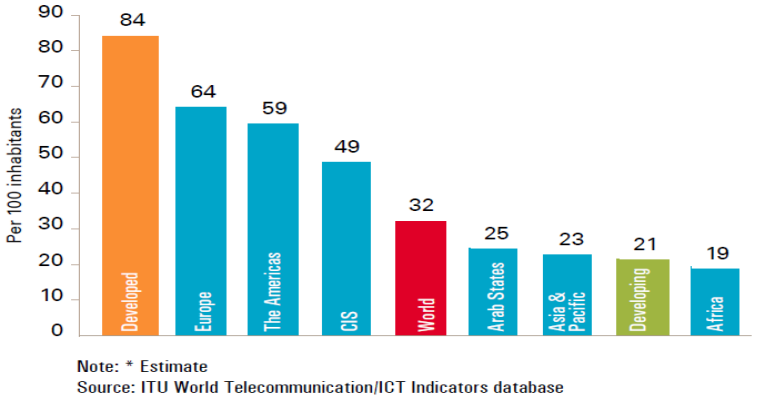
Source: Akamai: www.akamai.com/stateoftheinternet/Map Visualization
Note: Data unavailable for countries shaded in white.



Need for Speed

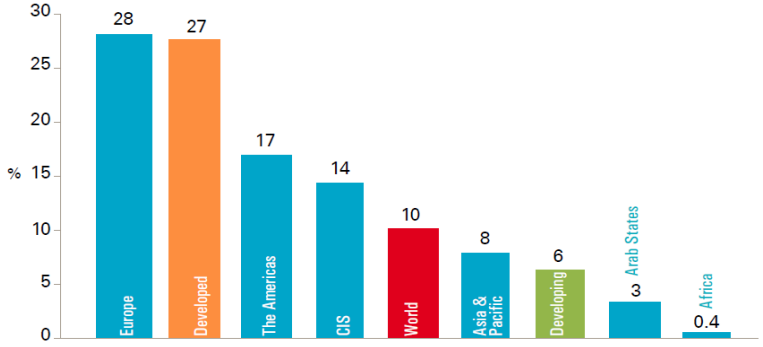
Download:	56kbps (dial-up)	256kbps	2Mbps	40Mbps	100Mbps
Google home page (160 KB)	23 seconds	5 seconds	0.64 seconds	0.03 seconds	0.01 seconds
ITU home page (750KB)	107 seconds	23 seconds	3 seconds	0.15 seconds	0.06 seconds
5MB music track	12 minutes	3 minutes	20 seconds	1 second	0.4 seconds
20MB video clip	48 minutes	10 minutes	1 minute	4 seconds	1.6 seconds
CD / low quality movie (700MB)	28 hours	6 hours	47 minutes	2 minutes	56 seconds
DVD / high quality movie (4GB)	1 week	1.5 days	4.5 hours	13 minutes	5 minutes

Broadband Low in Emerging Markets



Note: * Estimate
Source: ITU World Telecommunication/ICT Indicators database

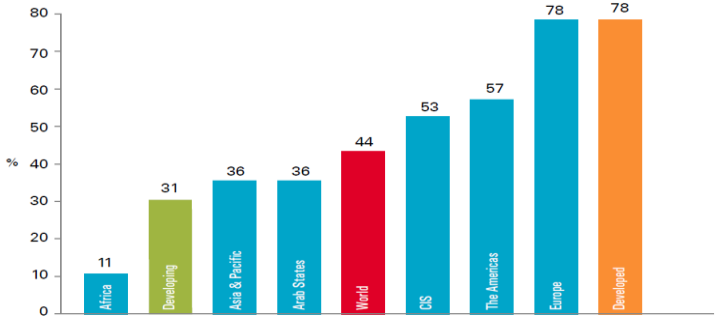
Mobile BB Penetration



Note: * Estimate
Source: ITU World Telecommunication/ICT Indicators database

Fixed BB Penetration

ITU - The World in 2014
ICT Facts and Figures

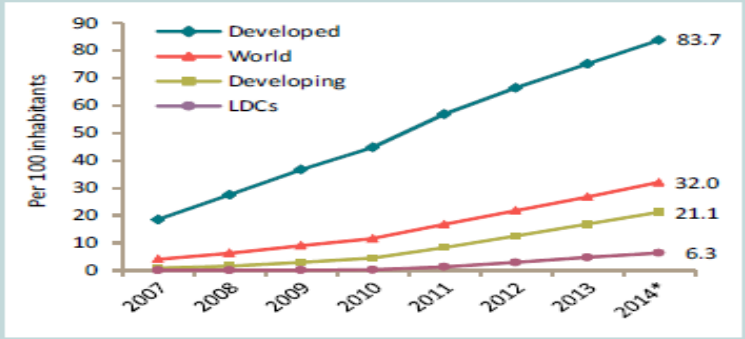


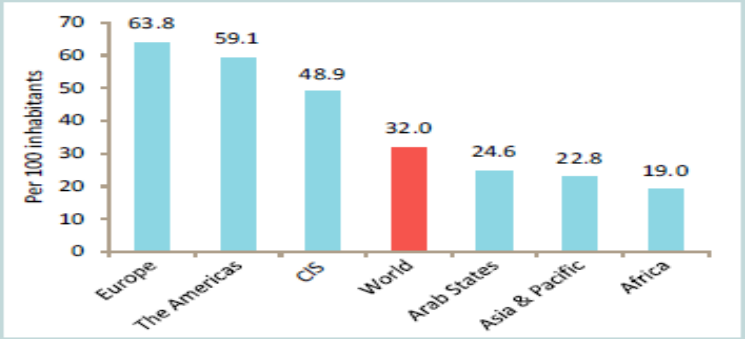
Note: * Estimate
Source: ITU World Telecommunication/ICT Indicators database

HH BB Penetration

The Broadband Divide is an Economic Divide

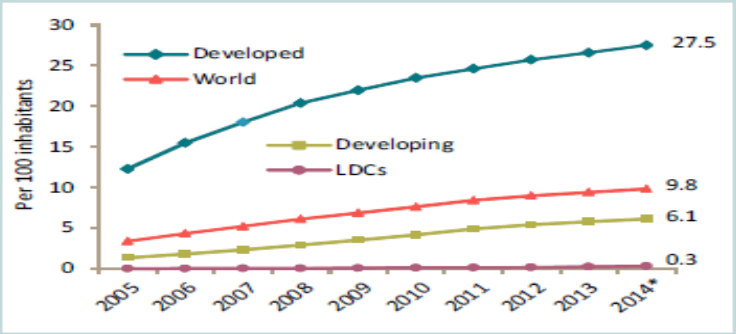
Chart 1.4: Active mobile-broadband subscriptions by level of development, 2007-2014 (left) and by region, 2014* (right)

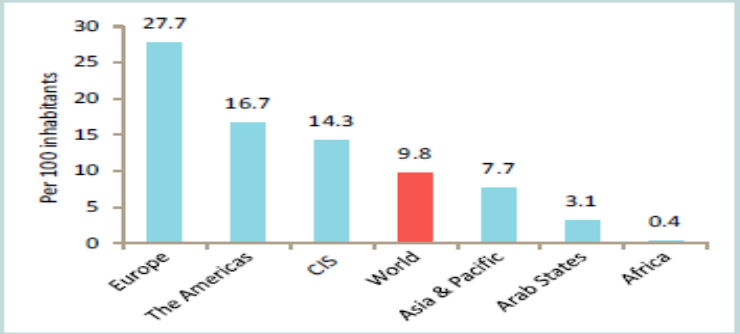




Note: *Estimate.
Source: ITU World Telecommunication/ICT Indicators database.

Chart 1.3: Fixed (wired)-broadband subscriptions by level of development, 2005-2014 (left) and by region, 2014* (right)





Note: *Estimate.
Source: ITU World Telecommunication/ICT Indicators database.

Current State of Broadband[1]

	Mature markets	Emerging markets
Internet penetration	**84%**	**32%**
Broadband Subscriptions	**27%f-84%m**	**6%f-21%m**
% income spent on BB	**1.5%**	**15%**

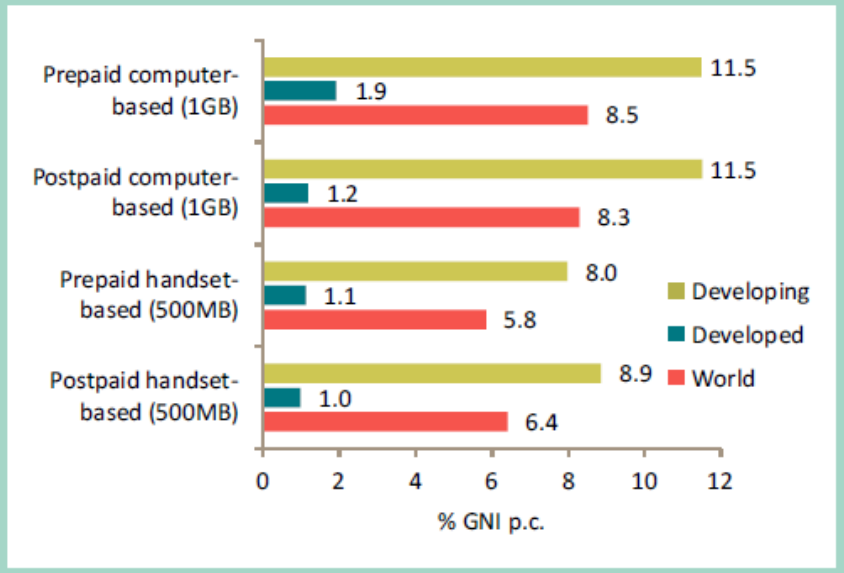
End game - Adoption

Deterrents:	**Availability**	**High cost**	**Relevance/Value**	
Experience				
Solutions:	Infrastructure Services	Robust competition Subsidy “investment”	Training/content	Options

ITU facts and Figures - 2014

The Cost of Mobile Broadband in Developing Countries is 8X..

Chart 4.14: Mobile-broadband prices as a percentage of GNI p.c., world and by level of development, 2013



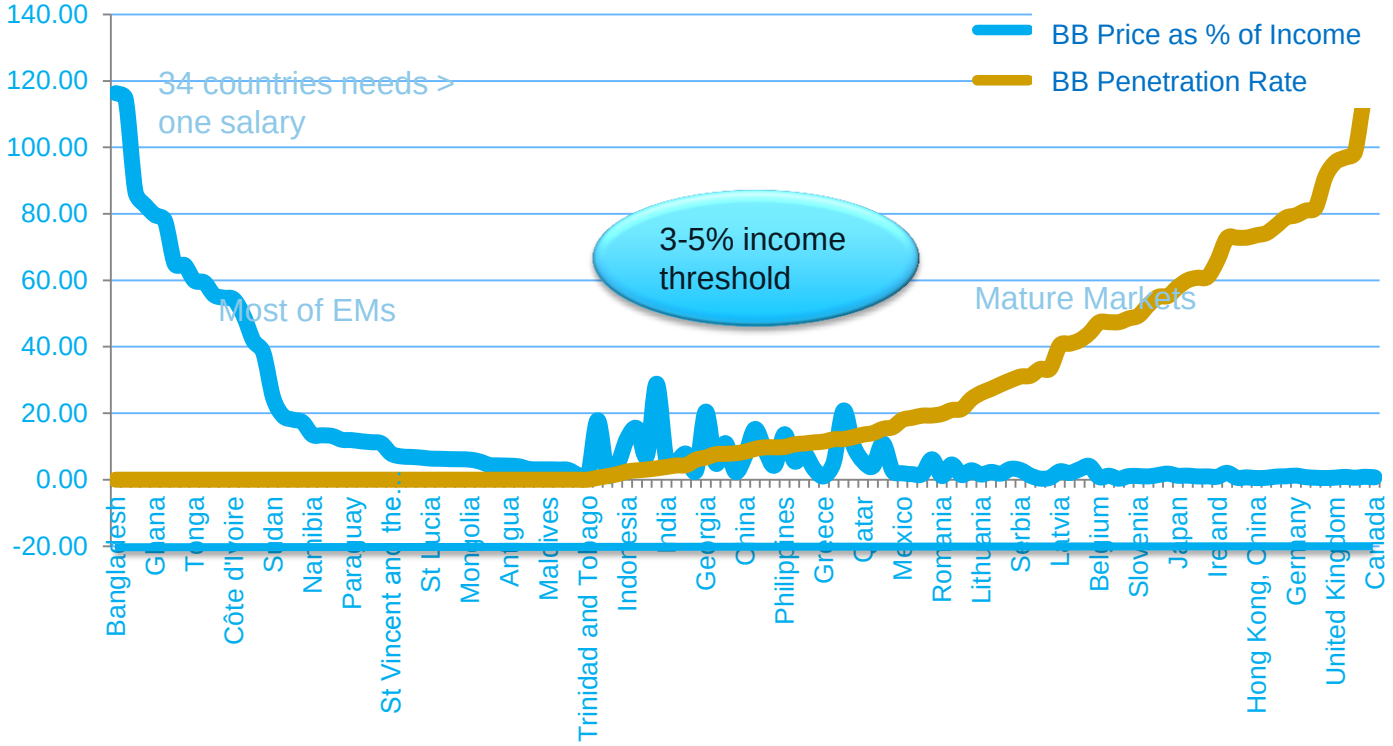
Note: Simple averages. Based on 119 economies for which data on mobile-broadband prices were available for the four types of plans.
Source: ITU.

Source: ITU MIS 2014

The Solution is Competition and Targeted Subsidies

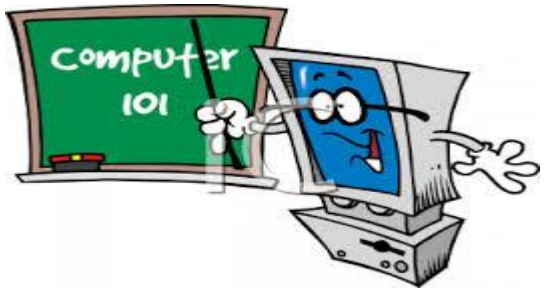
- USF
- Market Gap Programs
- Tax incentives
- PPPs

Price of broadband impacts ICT adoption



Digital Literacy

Awareness



Ability

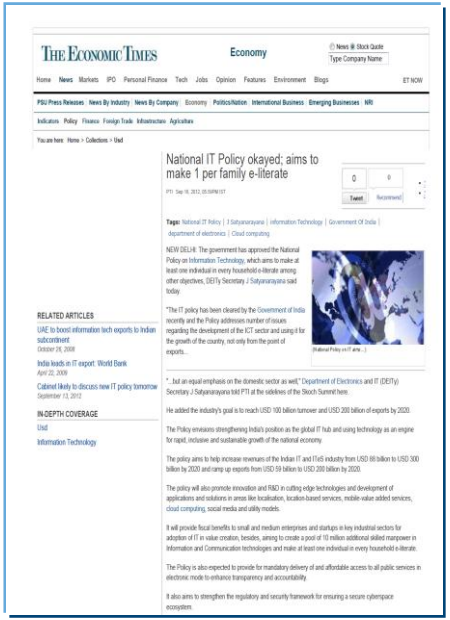
- Studies show Digital Literacy is a major Impediment to BB and ICT adoption
- Research shows 30% of non - adopters due to lack of interest or knowledge (60% SMB in Colombia)

Digital Literacy Solutions

*…in the future, 85% of jobs will require ICT skills and the computer literacy of a country's workforce is a competitive advantage in the global marketplace.**

- India Digital Literacy Mission
- Intel Easy Steps and PC basics:

http://www.intel.com/cd/corporate/csr/apac/eng/inclusion/steps/466382.htm



National Broadband Plans

Review, Publish, Execute, Measure

Unified strategy amongst ministries and stakeholders

Review of current status, with Public Consultation

Plan Goals should be Specific and Time bound, with 3-5 year horizon

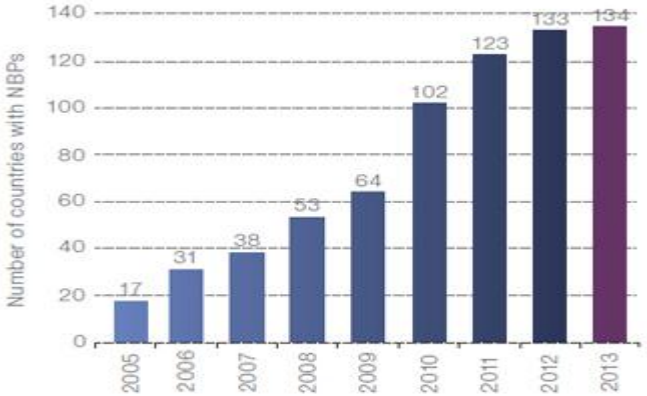
Execution, Execution, Execution, (Policies, subsidies, digital literacy and demand side programs)

Measure success, often, using internationally agreed metrics

http://www.itu.int/en/ITU-D/Statistics/Pages/intlcoop/partnership/default.aspx

While Many Countries have Plans

With specific time bound goals



75% of HH with 2mbps by 2015

Ministry of Information and Communication Technologies
Republic of Colombia
Libertad y Orden

8.8 million connected by 2014

ITU – planning for progress:
http://www.broadbandcommission.org/documents/reportNBP2013.pdf

the doc
Department:
Communications
REPUBLIC OF SOUTH AFRICA

100% of schools connected by 2020

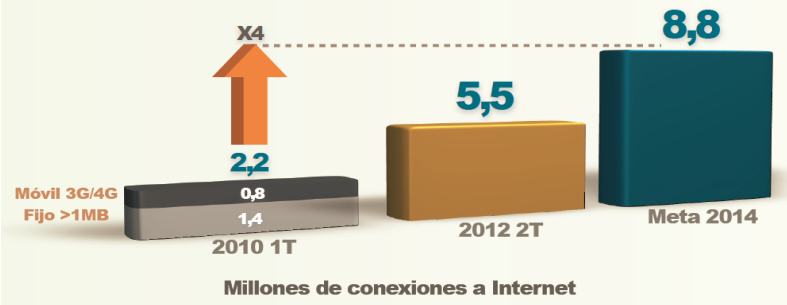
Implementation and Tracking is Low

GSR discussion paper

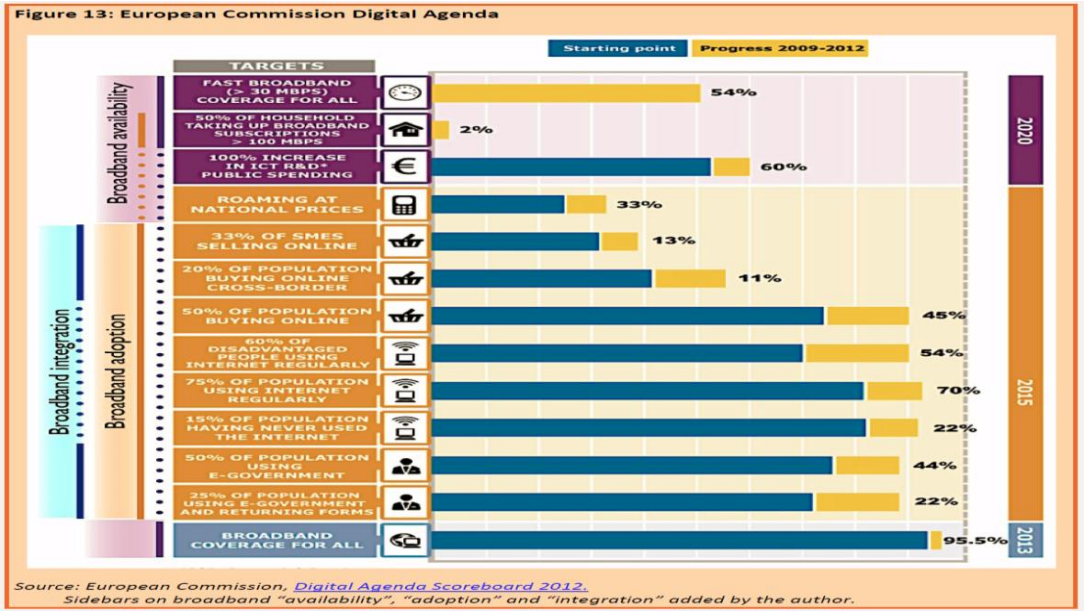
Monitoring the Implementation of Broadband Plans and Strategies

http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2014/Discussion%20papers%20and%20presentations%20-%20GSR14/Session%209%20GSR14%20-%20Discussion%20paper%20-%20MonitoringBroadband.pdf

Colombia



Europe



Are you tracking Progress?

ITU Targets

Target 1: Making broadband policy universal. By 2015, all countries should have a national broadband plan or strategy or include broadband in their Universal Access / Service Definitions.

Target 2: Making broadband affordable. By 2015, entry-level broadband services should be made affordable in developing countries through adequate regulation and market forces (amounting to less than 5% of average monthly income).

Target 3: Connecting homes to broadband. By 2015, 40% of households in developing countries should have Internet access.

Target 4*:* Getting people online. By 2015, Internet user penetration should reach 60% worldwide, 50% in developing countries and 15% in LDCs.

Target 5: Achieving gender equality in access to broadband by 2020.

Recommended Plan Structure

Evaluate - ICT and economic status

- Use data such as basic demographics, GDP, ICT spending, etc.

Examine - the regulatory environment

- Consider policies, Available spectrum, USF, tariffs/costs, etc.

Assess - the country infrastructure

- Evaluate international and last-mile connectivity, in-country backbone, etc.

Conduct - a user vs. needs analysis

- Develop a "needs roadmap" to pinpoint needs of each segment

- ***Define*** - broadband
  - Include desired broadband performance levels over time, and allow options
- ***Develop*** - a national vision for broadband
  - Vision should be specific, measurable, attainable, relevant and time-bound (SMART)
- ***Identify*** - funding resources
  - Consider spectrum reallocation, dedicated USF, gov't subsidies, etc.
- ***Collaborate*** - stakeholders
  - PPPs - Work with network resellers, software developers, etc. - consultations

- ***Develop*** - an implementation strategy
  - Create a strategy to generate public and private support for plan
- ***Utilize*** - a variety of funding strategies
  - Aggressively pursue best funding strategies identified in Phase 2
- ***Implement*** - demand-side programs
  - Gov't and/or other stakeholders should lead variety of programs
- ***Measure*** - progress
  - Continually track, evaluate and update programs to improve results

Globally Recognized Metrics[7]

Infrastructure and Access
- Fixed and mobile broadband subscriptions
- International bandwidth per population
- Fixed broadband tariffs
- Public Internet access centers (PIACs) per locality by pop.

Education
- Student-to-computer ratio
- % of schools with broadband
- % of ICT-qualified teachers

Business
- % of businesses using computers and type of connectivity
- % of persons employed routinely using computers and Internet
- % of businesses placing/receiving orders over Internet
- % of businesses using Internet and type of connectivity

Households
% of households with computer, Internet access
% of households with broadband access and type of connectivity

Health (Intel's recommendation)
% of hospitals and health centers with access to broadband
% of hospitals and health centers with digitalized patient records

[7] ITU, Measuring the Information Society," 2010

Best Practices

1. **Form public/private partnerships**
   - Engage a broad ecosystem (banks, teachers, NGOs, SMBs, etc.)
2. **Encourage competition**
   - Adopt variety of strategies to expand the BB market and encourage investment, remove regulatory impediments
3. **Release spectrum**
   - Support technology-neutral, service-flexible spectrum policies
4. **Apply Universal Service Funds**
   - Move beyond traditional telecommunications to BB and correct USF inefficiencies, create fund for BB adoption
   - 1 unified Organization Addressing all elements for service adoption
5. **Implement a variety of demand-side programs**
   - Generate investments and public interest through programs such as tax reductions and digital literacy programs , applicable content
6. **Adopt metrics to measure plan success**
   - Include SMART metrics, using ITU suggestions as starting point[6]

Demand Acceleration Programs

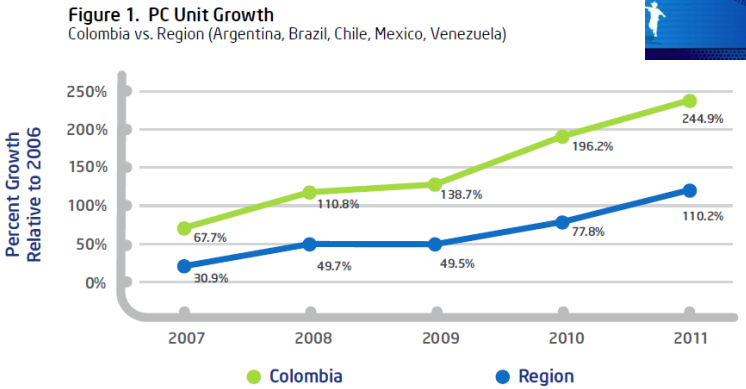
If you build it, they still wont come

Education transformation

Digital training – E-gov programs

low cost bundles of subscriptions,

content and devices



Why Universal Service Funds for BB?

Many people without BB, especially in remote areas

A mechanism is required to “initially” connect the underserved
– where the market is not acting

Universal Access (shared) versus Universal Service (personal)

Universal Service Obligation (typically on incumbent operator)
versus USF program (funds available for open bidding)

Universal Service for BB is the desired final result

The goals of Universal Service, as mandated by the 1996 Act, are to:

•Promote the availability of quality services at just, reasonable and affordable rates for all consumers

•Increase nationwide access to advanced telecommunications services

•Advance the availability of such services to all consumers, including those in low income, rural, insular, and high cost areas at rates that are reasonably comparable to those charged in urban areas

•Increase access to telecommunications and advanced services in schools, libraries and rural health care facilities

•Provide equitable and non-discriminatory contributions from all providers of telecommunications services to the fund supporting universal service programs

The Commission established four programs to fulfill these goals. They are:

•The High-Cost program

•The Lifeline (low income) program, including initiatives for Native Americans

•The Schools and Libraries program, commonly referred to as E-rate

•The Rural Health Care program

Policy Principles

Policy

Ensure Economic Efficiency

- Competitively Neutral Funding Model, enable new entrants
- Market based, competitive and technology neutral distributions or “investments”
- Rigorous analysis for projects

Fair and Transparent process

- Open, clearly defined RFQ process
- Annual reports

Funding Methods

Fixed charge on end user (example Japan, US)

- General Tax Revenue
- % of operator Revenue
- International Donors
- Spectrum Auction Fees
- Regulatory fines

USF and other BB subsidy Programs - Trends

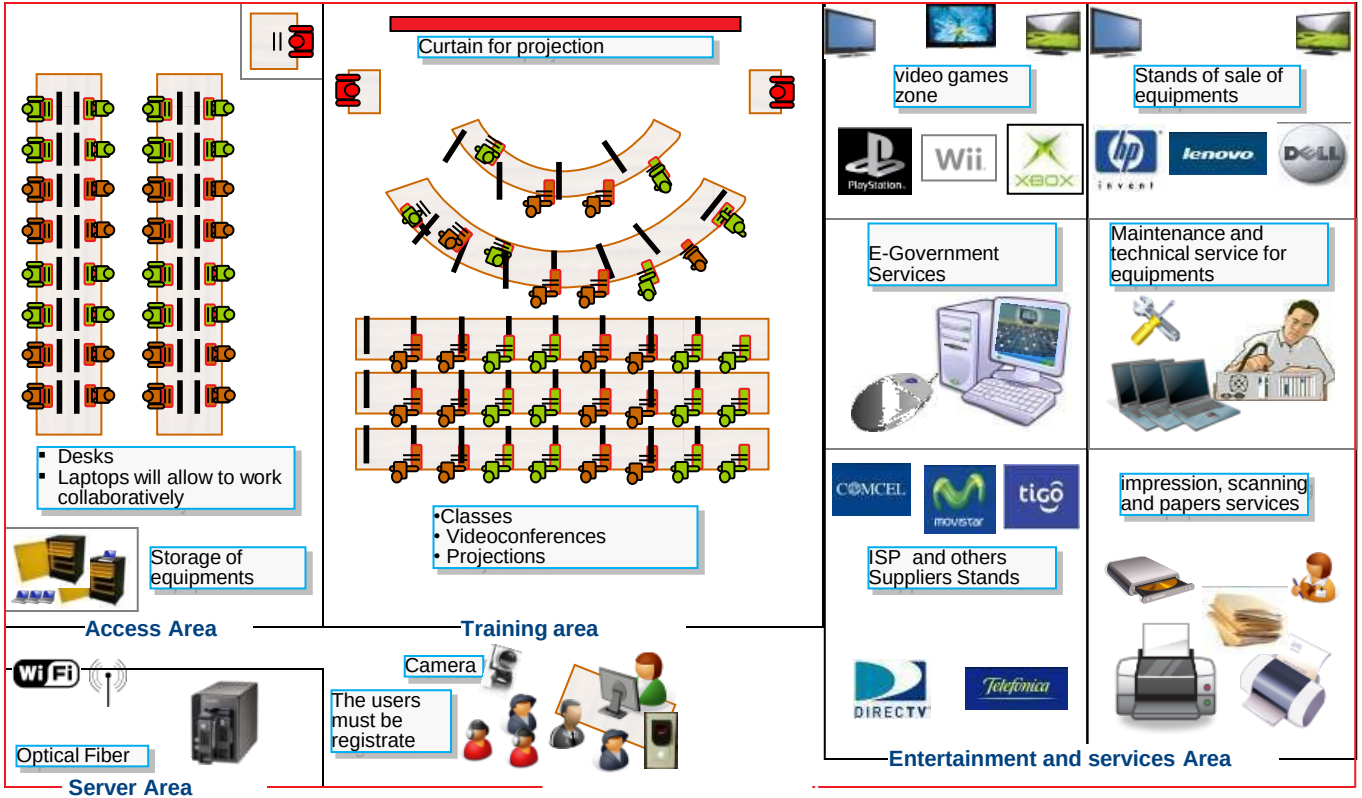
Broadband Telecenters : Broadband, devices, ICT training

- Pakistan: over 1000 education and community BB centers
- Malaysia: over 500 community broadband centers
- Turkey: over 4000 Internet centers
- Colombia: 2,700 telecenters – expand training in 800

National Education Programs: Broadband subscriptions, devices, and training

- Malaysia: 1 million BB subscriptions and PCs for needy students and low income families (improved HH BB penetration by 20%)
- Turkey: Connecting all schools with broadband and providing teachers with PCs
- UAE: Connecting and equipping schools with ICT as part of national smart learning program

What is a PVD (Punto Vive) Digital)?



Universal service Funds Must Be Utilized

Reports show less than 50% of funds have moderate to little activity - Why is this the case?

http://www.gsma.com/publicpolicy/wp-content/uploads/2013/04/GSMA-USF-Main-report-final1.pdf

http://www.itu.int/en/ITU-D/Conferences/GSR/Documents/ITU%20USF%20Final%20Report.pdf

Capacity Building and Tools are Essential

ITU Strategic Recommendations

- RECOMMENDATION 1: Planning for the Future
- RECOMMENDATION 2: Well-articulated policy and vision
- RECOMMENDATION 3: The need for social and digital inclusion
- RECOMMENDATION 4: Transparency, Visibility and Accountability
- RECOMMENDATION 5: Capacity Building, Sustainability and Complementary Services
- RECOMMENDATION 6: Availability of Resources and Knowledge
- RECOMMENDATION 7: Establish USFs to address broadband access + Demand
- RECOMMENDATION 8: Alternative financing mechanisms
- RECOMMENDATION 9: Regulators as a partner for development and social inclusion

Universal Service and Digital Inclusion
http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/USF_final-en.pdf

ITU Tools

- Digital Inclusion: http://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/default.aspx
- Publications and Studies on ICT Economic and Financial issues: http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Studies.aspx
- ITU Broadband Commission: http://www.broadbandcommission.org/Pages/default.aspx

Final thoughts

We have to address all vectors

Availability, Affordability, Awareness and Ability

Utilize all tools:

1) Broadband Plans

2) Universal Service Funds

3) Demand Acceleration Programs

We must act quickly to accelerate Broadband Adoption and Close the Digital Divide