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# Leveraging ICT for Social and Economic Development

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**Session: 5 June 2013**



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- ❖ **ICT...as an Ecosystem: Darrell Owen**
- ❖ **CERN: Dr. Sergio Bertolucci**
- ❖ **ICT Ecosystem...for Development**
- ❖ **Setting the Stage: Darrell Owen**
- ❖ **Sudan: Mr. Ahmed Eisa**
- ❖ **Vietnam, Kenya and Peru**
- ❖ **Moving Forward**
- ❖ **Comments-Discussions**



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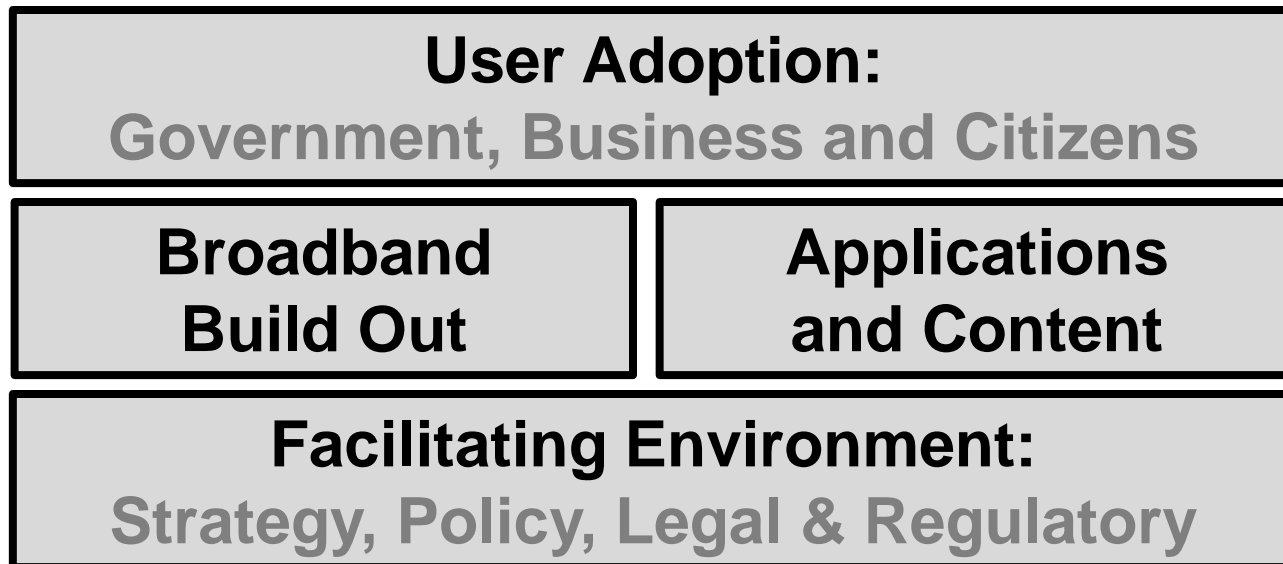
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*ICT...*  
*as an ECOSYSTEM*



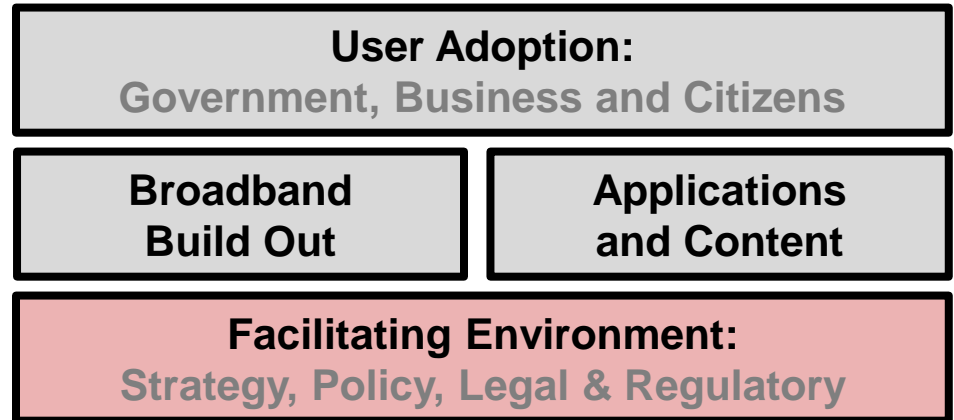
# The Broader Digital Ecosystem: Essential Components





# The Broader Digital Ecosystem: Facilitating Environment

- ❖ Competitive Environment
- ❖ Independent Regulator
- ❖ Universal Service/Access
- ❖ National Broadband Plan
- ❖ Frequency Management
  
- ❖ E-Financial Transactions
- ❖ E-Education Certification
- ❖ E-Health Prescriptions
- ❖ Cyber Security
- ❖ Privacy





# The Broader Digital Ecosystem: Facilitating Environment

- ❖ Competitive Environment
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**User Adoption:**  
Government, Business and Citizens

**Broadband  
Build Out**

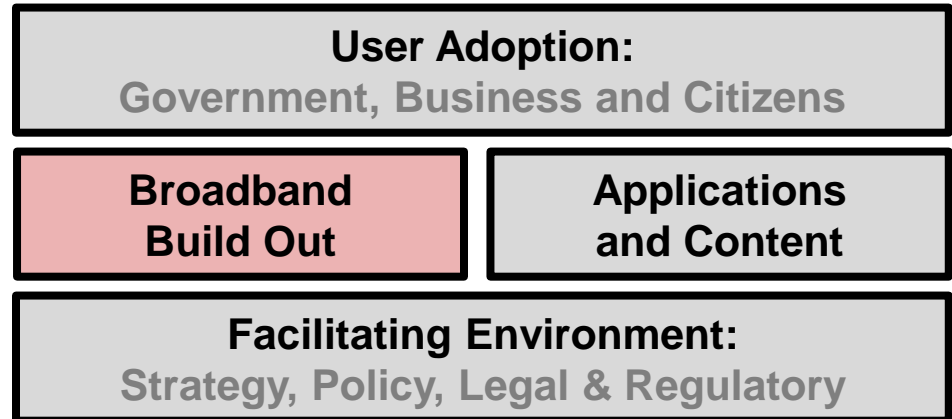
**Applications  
and Content**

**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory



# The Broader Digital Ecosystem: Broadband Build Out

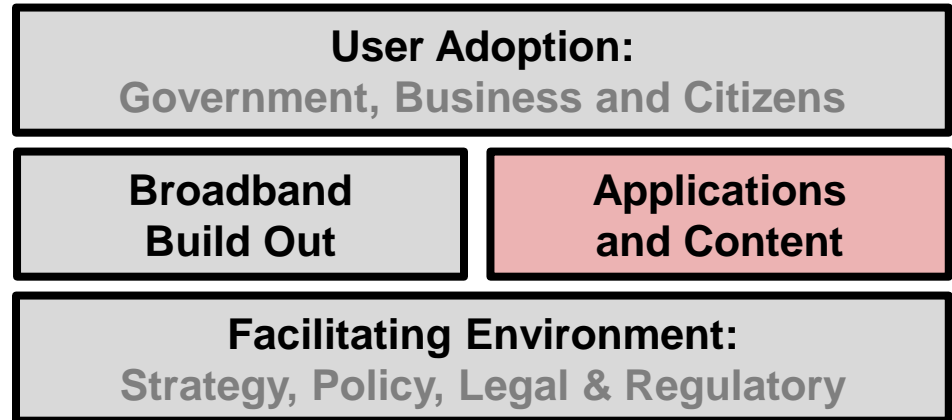
- ❖ **Competition in the Marketplace**
- ❖ **Shared International and National Fiber Backbone**
- ❖ **Adoption of Newer Wireless Broadband Technologies**
- ❖ **Facility Sharing (Towers +)**
- ❖ **Low Cost Rural Build Out**
- ❖ **Off-Power Grid Clean Energy Solutions**





# The Broader Digital Ecosystem: Applications and Content

- ❖ Local Language Content
- ❖ Local Application Development
- ❖ Local Hosting (+Cloud)
- ❖ E-Government
- ❖ E-Education
- ❖ E-Agriculture
- ❖ E-Trade & Commerce
- ❖ E-Health
- ❖ E-Emergency Services

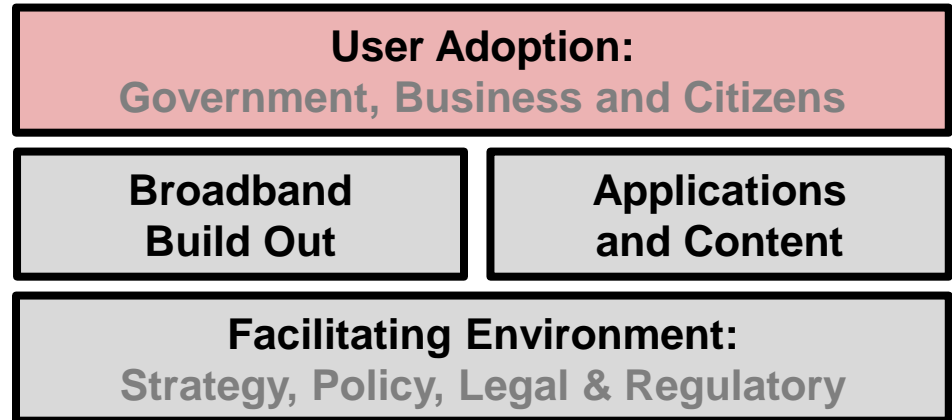






# The Broader Digital Ecosystem: User Adoption

- ❖ **Affordability**
- ❖ **Language Literacy**
- ❖ **Digital Literacy**
- ❖ **Access-Use in Schools**
- ❖ **Teacher Education**
- ❖ **Access-Use in Communities**
- ❖ **Gender Equality**
- ❖ **Those with Handicaps**
- ❖ **Smart Phones & Tablets**
- ❖ **Focus on Rural Users**

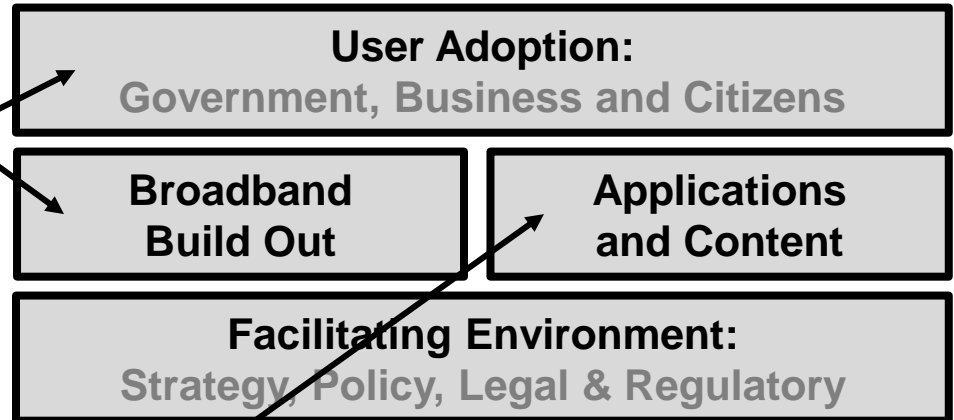




# WSIS: Targets for 2015

- 1. **Connect** villages
- 2. **Connect** universities, colleges, secondary schools and primary school
- 3. **Connect** scientific and research centers
- 4. **Connect** public libraries, cultural centers, museums, post offices and archives
- 5. **Connect** health centers and hospitals
- 6. **Connect** all local and central government and websites and e-mail addresses
- 8. **Access** to television and radio services
- 10. Half the world's inhabitants have **access to ICTs**

- 7. Primary and secondary school **curricula**
- 9. Development of **content in all world languages** on the Internet





# Broadband Commission: Targets for 2015

**2. Making broadband affordable**  
*...less than 5% average income*  
**4. Getting people online**  
*...60% world wide;  
50% developing;  
15% LDCs*

**3. Connecting homes to broadband**  
*...40% households in  
developing countries*

**1. Making broadband policy  
universal**  
*...national BB plan or BB  
included in USAF*

**User Adoption:**  
Government, Business and Citizens

**Broadband  
Build Out**

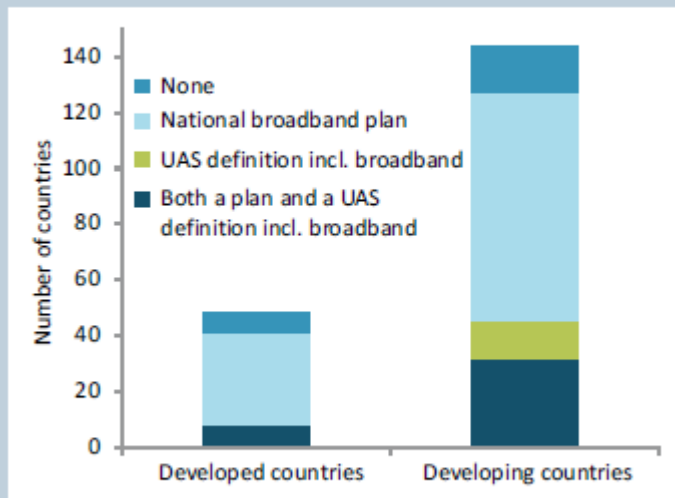
**Applications  
and Content**

**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory



# Broadband Commission 2015 Goals: Universal Broadband Policy

Chart Box 1.1.1: National policy instruments in place to promote broadband, 2011



Source: ITU, Regulatory Knowledge Centre.

**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

**Applications and Content**

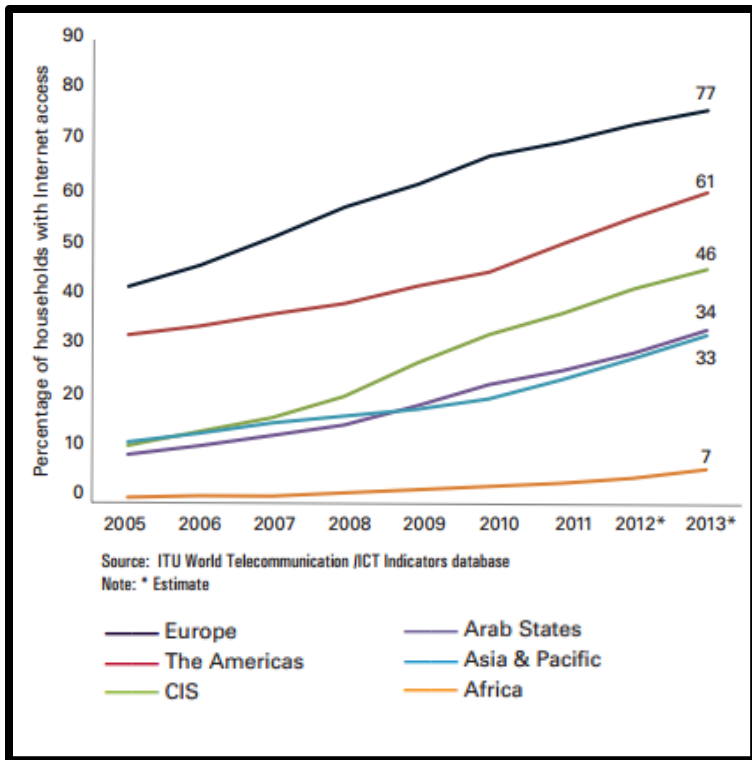
**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**1. Making broadband policy universal**  
*...national BB plan or BB*

*included in USAF*



# Broadband Commission 2015 Goals: Broadband at Households By Region



**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

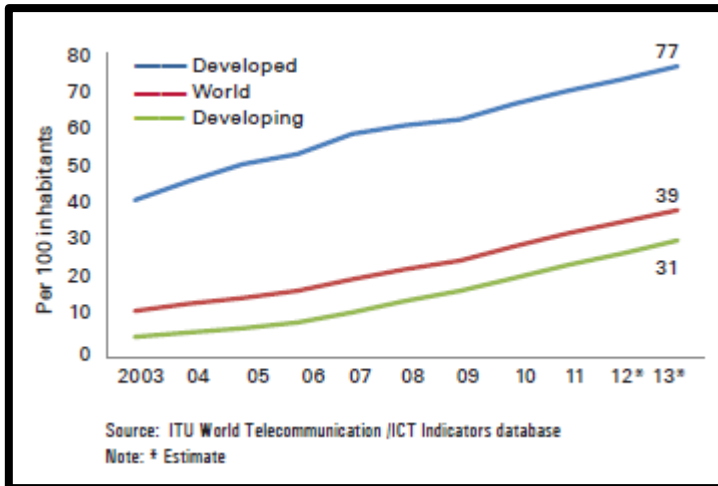
**Applications and Content**

**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**3. Connecting homes to broadband**  
*...40% households in developing countries*



# Broadband Commission 2015 Goals: Broadband at Country Development Level



**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

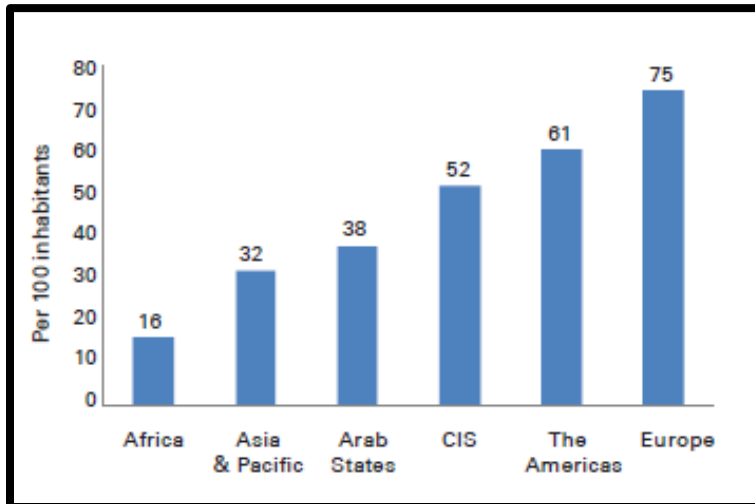
**Applications and Content**

**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**4. Getting people online**  
*...60% world wide;  
50% developing;  
15% LDCs*



# Broadband Commission 2015 Goals: Broadband by Geographic Region



**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

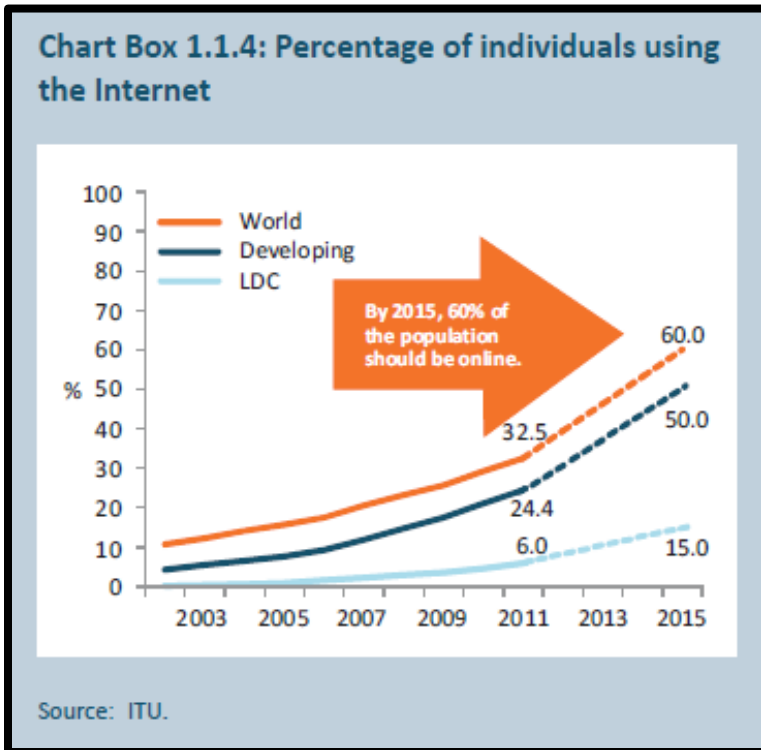
**Applications and Content**

**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**4. Getting people online**  
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# Broadband Commission 2015 Goals: Broadband at the User Level



**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

**Applications and Content**

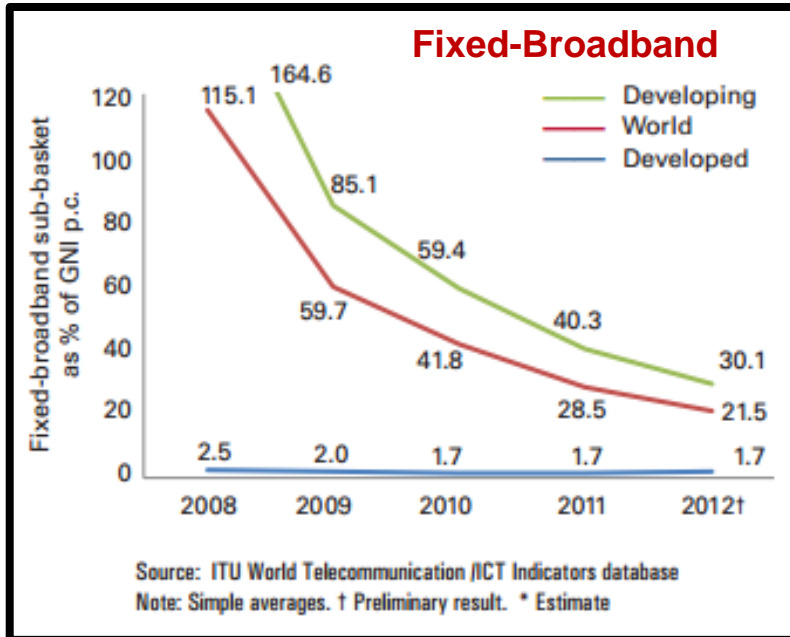
**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**4. Getting people online**  
*...60% world wide;  
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15% LDCs*





# Broadband Commission 2015 Goal : Broadband Affordability



**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

**Applications and Content**

**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**2. Making broadband affordable**  
*...less than 5% average income*



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## **Out Takes from WSIS & Broadband Commission:**

- ❖ **Predominant Focus on Expanding Access**
- ❖ **Broadband Targets Still Remain a Challenge**
- ❖ **ICT is a Broader Digital Ecosystem**
- ❖ **Value is *Derived* from Applications and Content**
- ❖ **Value is *Realized* through User Adoption**



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# CERN's: Dr. Sergio Bertolucci



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# *ICT Ecosystem* *for DEVELOPMENT*



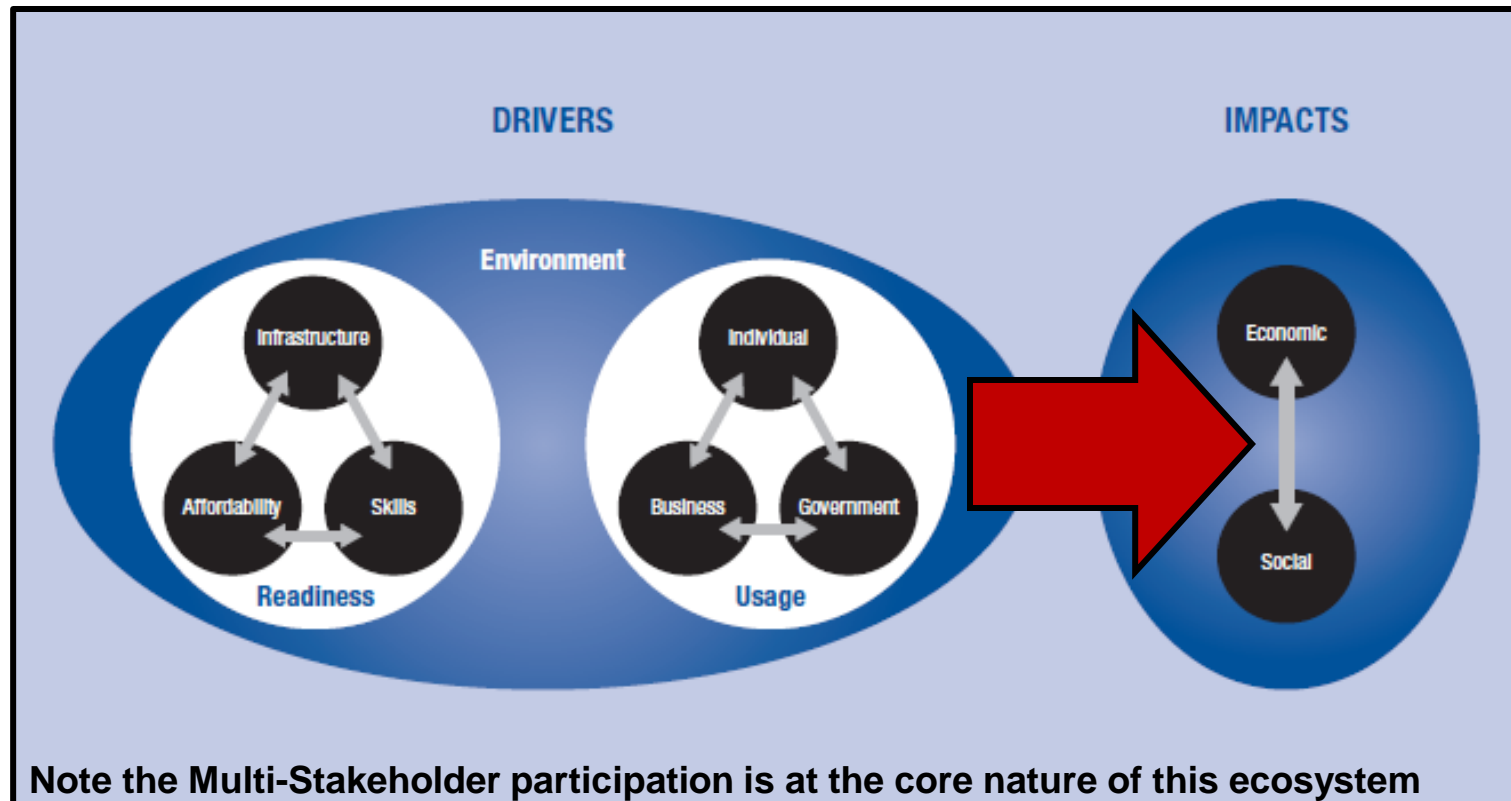
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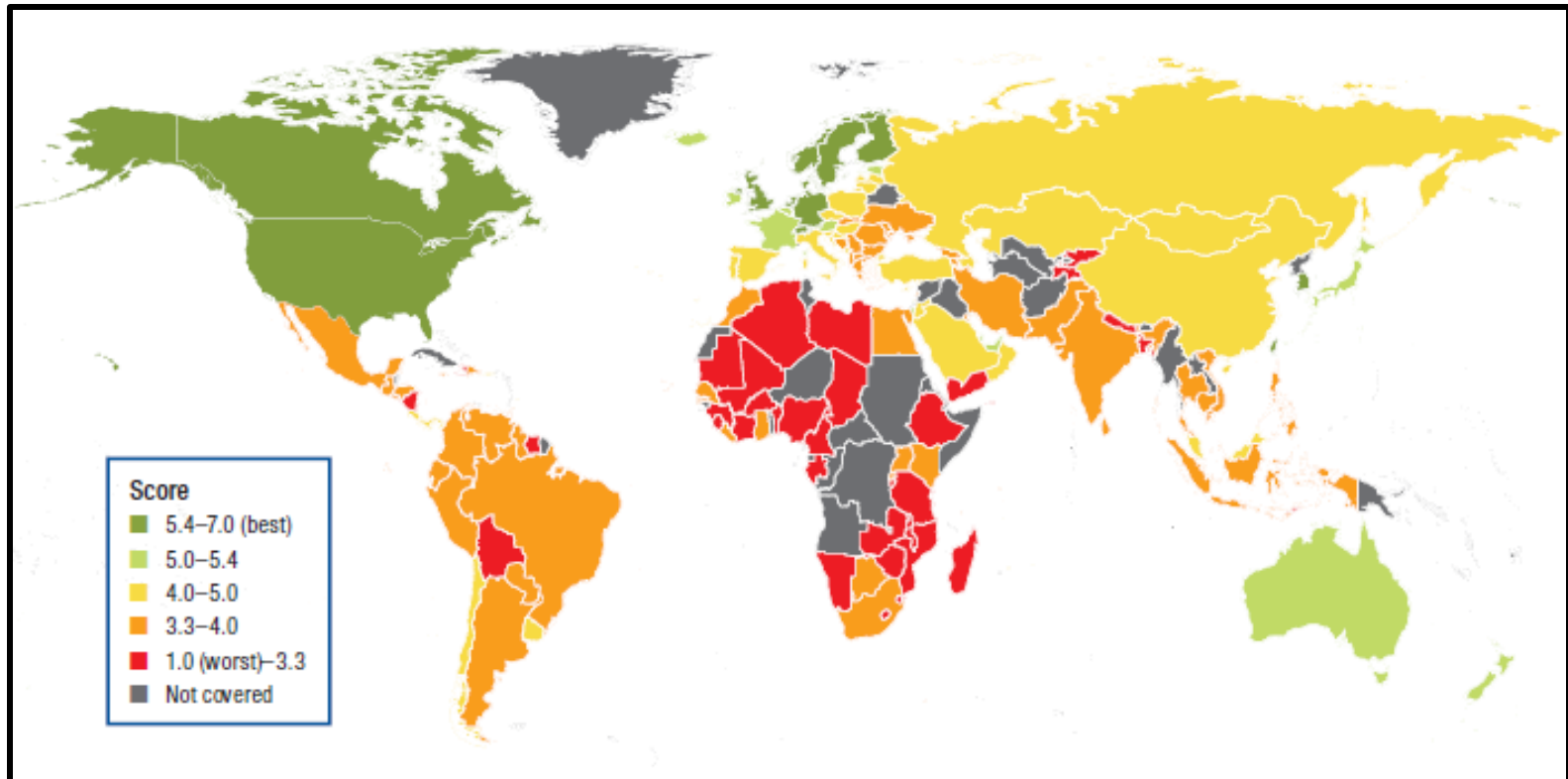
***“Digitization” - the mass adoption of connected digital services by consumers, enterprises, and governments***

# ....FOR DEVELOPMENT: Contribution for Socioeconomic Impact





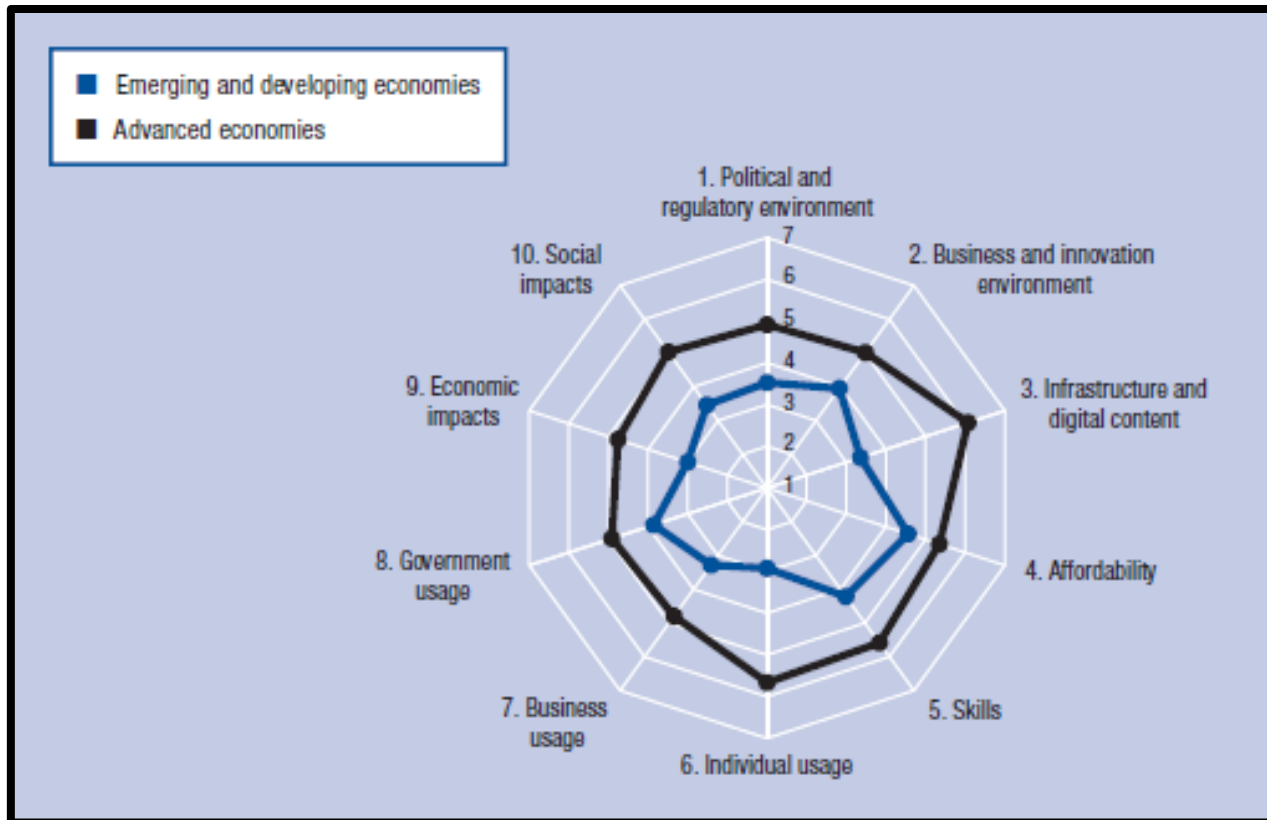
# ...FOR DEVELOPMENT: Significant Global Imbalance



WEF: GICT 2013 – NRI Map



# ...FOR DEVELOPMENT: Gaps Are Identified

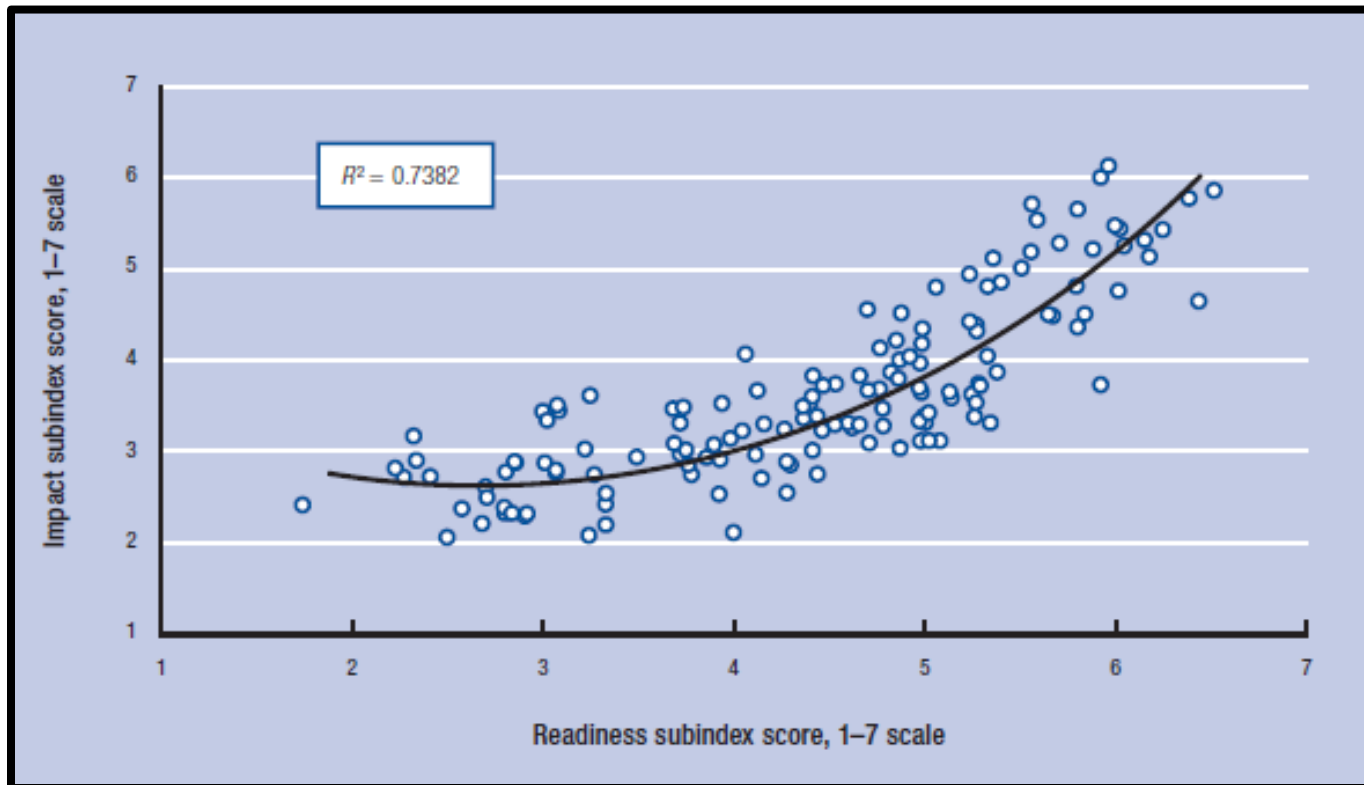


WEF: GITR 2013 – Digital Divide





# ...FOR DEVELOPMENT: Strong Link between Readiness & Impact





# ...FOR DEVELOPMENT: Evidence of Direct Impact

**Regional Impact: 2010-2011**

Region	GDP Impact (US\$ billions)	Number of jobs created
Africa	8.3	618,699
Commonwealth of Independent States	11.8	340,820
East Asia and the Pacific	55.8	2,370,241
Eastern Europe	7.0	159,015
Latin America and the Caribbean	27.0	636,737
Middle East and North Africa	16.5	377,772
North America	25.3	167,650
South Asia	9.4	1,117,753
Western Europe	31.5	213,578
<b>Total</b>	<b>192.6</b>	<b>6,002,266</b>

WEF: GTR 2013

<b>Advanced Economies:</b>	29%	6%
<b>Emerging Economies:</b>	71%	94%



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# ....FOR DEVELOPMENT: ...We Can Take Action for **GREATER** Impact

## Digital Divide

- ❖ **Bottom of the Pyramid (BOP)  
= 3.9 Billion People  
in Emerging Markets**

## Digitization Challenge

## Digitization Benefits



# ....FOR DEVELOPMENT: ...We Can Take Action for **GREATER** Impact

## Digital Divide

- ❖ Bottom of the Pyramid (BOP)  
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## Digitization Challenge

- ❖ **Digitization Costs for BOP is placed at: US\$ 1.4T over 10 years**
- ❖ **Funding Gap for Digitizing BOP is placed at: US\$ 1.2T**

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# ....FOR DEVELOPMENT: ...We Can Take Action for GREATER Impact

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## Digitization Benefits

- ❖ For the BOP
  - ❖ US\$ 4.4T => 300% Return
  - ❖ 64M Jobs
  - ❖ Move 580M People Above Poverty Line
- ❖ For Emerging Economies
  - ❖ US\$ 6.3T => 300% Return
  - ❖ 77M Jobs
  - ❖ Unlocking >US\$ 700B Market for Private Sector



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***The bottom of the pyramid  
represents the greatest  
opportunity for capturing the  
gains in job creation and  
GDP growth associated with  
digitization...***



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# Some Rural Examples

- ❖ **Sudan**
- ❖ **Vietnam**
- ❖ **Kenya**
- ❖ **Peru**



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# Sudan's Mr. Ahmed Eisa





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# Ta Van, Vietnam



- ❖ New Technology
- ❖ Multi-Stakeholder Engagement
- ❖ Across the Community
- ❖ All Sectors Benefit
- ❖ Voice and Broadband
- ❖ All Wireless
- ❖ Supported by USAF



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# Ta Van, Vietnam





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# Nanyuki, Kenya

- ❖ New Technology
- ❖ Multi-Stakeholder Engagement
- ❖ Across the Community
- ❖ All Sectors Benefit
- ❖ All Wireless
- ❖ All Solar Powered





# Ucayali, Peru

- ❖ Multi-Stakeholder Engagement
- ❖ Across the Community
- ❖ All Sectors Benefit
- ❖ All Wireless
- ❖ Partial Solar Powered
- ❖ USAF Support

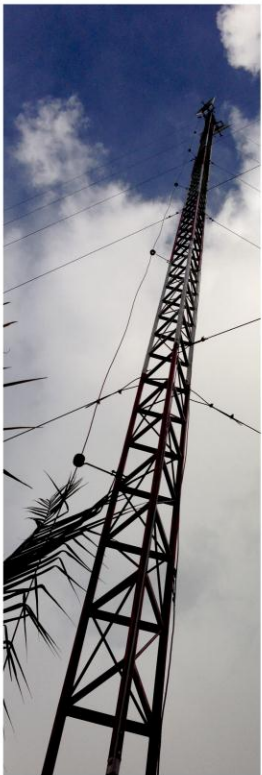




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# Ucayali, Peru





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## Moving Forward

- ❖ Approach ICT as a Broader Digital Ecosystem
- ❖ Country Government Leadership is Essential
- ❖ Multi-Stakeholder Partnership also Essential
- ❖ Leverage Existing Diagnostic Data
- ❖ Focus on Removing Local Weaknesses
- ❖ *Accelerating* Local Implementation
- ❖ Achieving Social and Economic Benefits
- ❖ Potential to Add ICT into STIP Policy Reviews
- ❖ Potential Use of CSTD for Capturing-Sharing Lessons Learned



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# *Questions*

# *Answers*

# *Comments*



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***Slides  
Not  
Used***

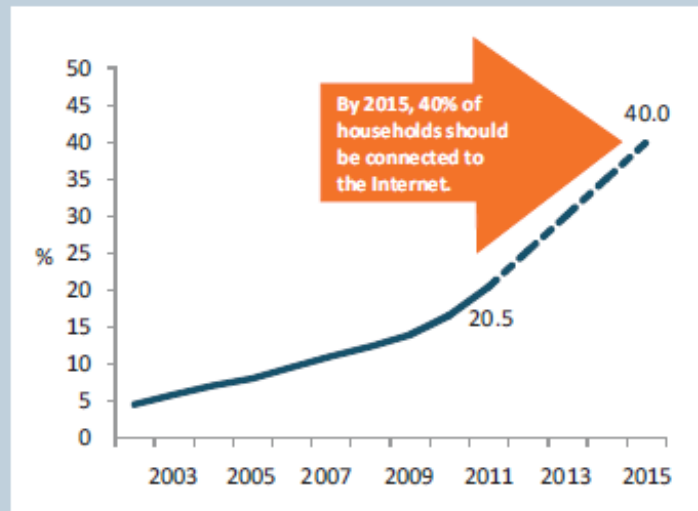




# Broadband Commission 2015 Goals

## Broadband in Households

Chart Box 1.1.3: Percentage of households with Internet access, developing countries



Source: ITU.

**User Adoption:**  
Government, Business and Citizens

**Broadband  
Build Out**

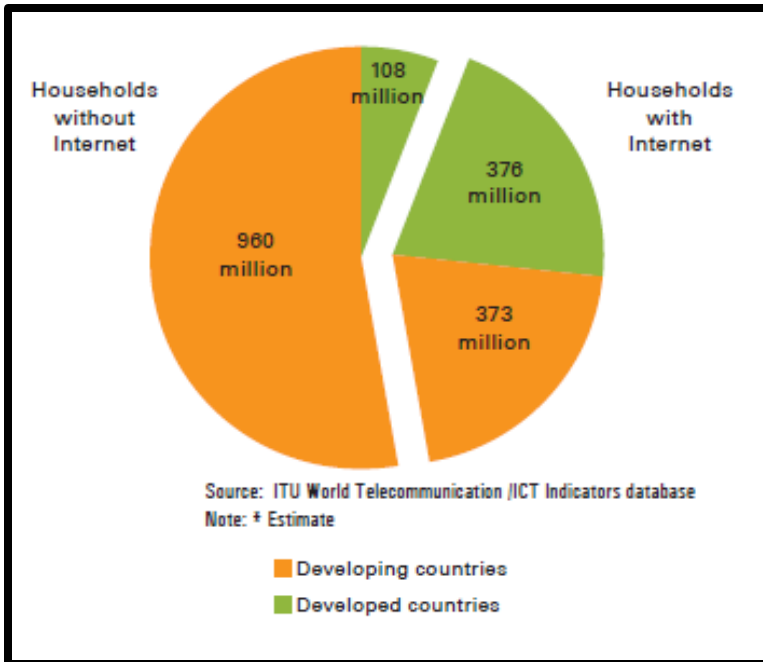
**Applications  
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**Facilitating Environment:**  
Strategy, Policy, Legal & Regulatory

**3. Connecting homes to broadband**  
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# Broadband Commission 2015 Goals: Household by Country



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**Broadband Build Out**

**Applications and Content**

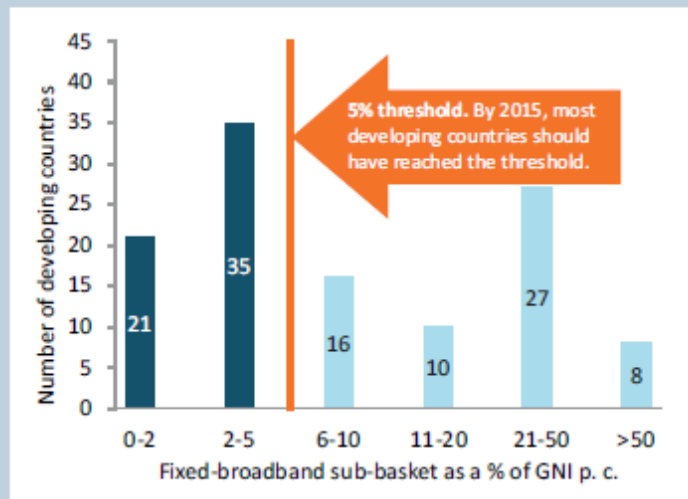
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# Broadband Commission 2015 Goal: Broadband Affordability

Chart Box 1.1.2: Fixed-broadband prices in developing countries, % of GNI per capita, 2011



Source: ITU.

Note: For further details on the methodology of the ICT Price Basket, see Chapter 3 of this report.

**User Adoption:**  
Government, Business and Citizens

**Broadband Build Out**

**Applications and Content**

**Facilitating Environment:**  
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**2. Making broadband affordable**  
*...less than 5% average income*



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***Digital technologies and applications contribute to the economic strength, societal well-being, and effective governance of a nation***



# Drilling Deeper: ...We Can Take Action for **GREATER** Impact

## Digital Divide

- ❖ **Bottom of the Pyramid (BOP) = 3.9 Billion People in Emerging Markets**
- ❖ **BOP Development Index (DI) Average is 17.5**
- ❖ **Half of the Emerging Market**
- ❖ **Quarter of the Developed Market**

## Digitization Challenge

- ❖ Digitization Costs for BOP is placed at: US\$ 1.4T over 10 years
- ❖ Funding Gap for Digitizing BOB is placed at: US\$ 1.2T
- ❖ Per Person Per Year Calculation
  - ❖ Current: US\$ 5.50/year
  - ❖ Needed: US\$ 47/year

## Digitization Benefits

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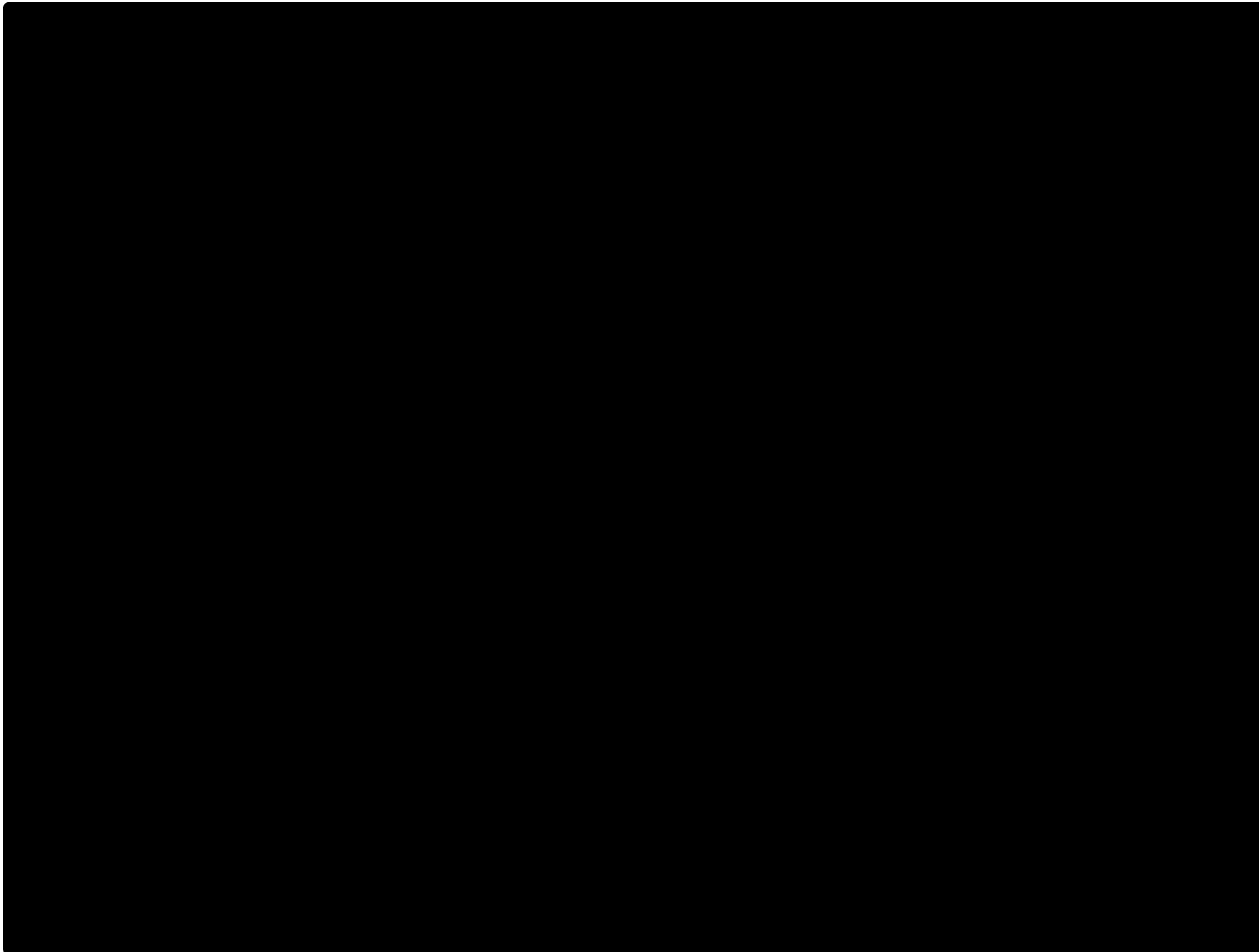


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# Nanyuki, Kenya

