ICTs for development: from e-Readiness to e-Awareness

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Barcelona, November 20, 2007
Executive Master in e-Governance

e-Gov 2007/2008


Module 3. Barcelona Week.
Index

- Information and Communication Technologies for Development: ICT4D
- The concept of access and the measurement of the Knowledge Society
- Digital Divide: a holistic approach
- e-Readiness and Web 2.0 for e-Governance in Developing Countries
ICTs for Development
NEW Information and Communication Technologies

- Old ones:
  - radio
  - phone
  - TV
  - printed press

- New ones:
  - digital content
  - Internet (e-mail, WWW…)
  - mobile phone
INFORMATION and COMMUNICATION Technologies

- Information:
  - databases
  - information
  - knowledge management

- Communication:
  - broadcasting
  - p2p
  - networking

- Technologies
  - multiplatform
  - multichannel
  - empowering
Information Society? (1/3)

(back to the ) Production function

- Land and Labour
- Industrial Revolution: Land, Labour and Capital
- … Revolution? Land, Labour, Capital and Information/Knowledge/Technology/…
Information Society? (2/3)

- Information as input, tool and output
- Use information to get
  - more information
  - better (quality) information

Raw data → Digitalization → Transformation Enrichment → Rich data Information? Knowledge?

SPEED!
Information Society? (3/3)

- Information Society
- Informational Society
- Knowledge Based Society
- Networked Society
THIRD Industrial Revolution

- Industrial revolution:
  - iron
  - steam engine

- Second industrial revolution:
  - steel
  - internal-combustion engine

- Digital revolution
  - information
  - computers
ICTs and Development (1/6)

Changes in Economy
- Efficiency
- Efficacy
- PRODUCTIVITY

Changes in Society
- Identity
- Interaction / Communication
- Culture / Creation
ICTs and Development (2/6)

Figure 3. Contribution of ICT to Labor Productivity Growth (% of GDP)²

- Other labor productivity growth
- GDP growth in ICT sectors
- ICT capital deepening

Source: Based on findings from Van Ark et al. (2003) and Lee and Khatri (2003).

Christine Zhen-Wei Qiang, Alexander Pitt and Seth Ayers.
World Bank (2003) ICT & Development

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ICTs and Development (3/6)

Figure 4.1: ICT’s contribution to economic growth

*Source:* ITU adapted from Jorgenson and Vu, 2005.

*Note:* The Group of 7 (G7) refers to the following countries: Canada, France, Germany, Italy, Japan, UK, and US.

Christine Zhen-Wei Qiang, Alexander Pitt and Seth Ayers.
*World Bank (2003) ICT & Development*
ICT and Development (4/6)

Figure 2. Link between Telecommunications and Growth

\[ y = 2.0376x^{0.2046} \]

\[ R^2 = 0.2120 \]

Source: Authors’ calculation from World Bank 2000a.

Christine Zhen-Wei Qiang, Alexander Pitt and Seth Ayers.
World Bank (2003) ICT & Development
ICTs and Development: the MDG (5/6)

ICTs necessary for
- Investment
- Livelihood support
- Entrepreneurship

ICTs facilitate
- Cost-effective public services
- Cost-effective private services

ICTs and Development: key issues (6/6)

Health
- e-Health
- Genomics

Education
- e-Learning
- Blended Learning
- m-Learning

Governance
- e-Governance
- e-Government
- e-Administration
- e-Democracy
- e-Participation
Access and measurement of the Information Society
What is Access

The Broadcasting model
- Emphasis on the active receiver
- Freedom of choice
- Access = Range of products on offer

Telecommunications model
- Emphasis on the sender
- Capacity to get one’s message out
- Access = Means of communication

Digital Opportunity Index

International Telecommunication Union

- 91%
- 9%

Digital Literacy
Infrastructures
Digital Divide Index / Infostate

Orbicom

- Digital Literacy: 5%
- Infrastructures: 70%
- Nondigital: 25%
ICT Opportunity Index

- 20% Digital Literacy
- 10% Infrastructures
- 70% Nondigital

UNCTAD
International Telecommunication Union
OECD Key ICT Indicators

OECD

- Content and Services: 35%
- Digital Literacy: 4%
- ICT Sector: 52%
- Infrastructures: 9%
e-Readiness Rankings

The Economist Intelligence Unit

- Content and Services: 20%
- Digital Literacy: 10%
- ICT Sector: 20%
- Infrastructures: 17%
- Legal Framework: 13%
- Nondigital: 20%
Networked Readiness Index

World Economic Forum

- Content and Services: 45%
- Digital Literacy: 10%
- ICT Sector: 9%
- Infrastructures: 24%
- Legal Framework: 4%
- Nondigital: 7%
Digital Divide: a holistic approach
What is the Digital Divide? (1/3)

Figure: 1.1: Overall, the digital divide is shrinking...
Mobile telephone subscribers per 100 inhabitants, 1994-2004 (left) and fixed telephone lines per 100 inhabitants, 1994-2004 (right)

Source: ITU World Telecommunication Indicators Database.
Note: In these charts, the digital divide is calculated by dividing the penetration rates in the developed world by the penetration rate in the developing world. Penetration rates are rounded, whereas the digital divide is calculated based on actual numbers. For this reason, the digital divide results do not always correspond to the figures indicated in the graph.

BUT: In 1994, developed countries were almost 5 points ahead than developing in mobile penetration. Ten years later, they are 58 points ahead.

What is the Digital Divide? (2/3)

Figure 1.2: …but major disparities remain
Mobile cellular penetration, by region, 1994-2004 (top left) and distribution of the 160 million 3G subscribers at the end of 2004, by region (top right), Internet penetration by region, 2004 (bottom left) and distribution of broadband subscribers by region, 2004 (bottom right).

Source: ITU World Telecommunication Indicators Database (top left and bottom chart) and ITU adapted from 3GToday.com (top right).

What is the Digital Divide? (3/3)
Fostering the Information Society

ICTs ? Development

measure test impact

test efficiency/efficacy measure

Policies ? ICTs
5 tier approach to e-Readiness

- Legal framework
- Infrastructures
- Digital Literacy
- Content and Services
- ICT Sector
Problems with the Telecomm approach (1/2)

ICTs ≈ Infrastructure

- Infrastructure
- Capacitation
- Industry
- Services
- Regulation

hard, soft, connectivity
Problems with the Telecomm approach (2/2)

- Digital Literacy: 9%
- Infrastructures: 70%
- Nondigital: 20%

ICTs → ? → Development

Policies → ? → ICTs
Problems with the e-Readiness approach (1/2)

ICTs ≈ Economy

- Infrastructure: hard, soft, connectivity
- Capacitation: digital literacy
- Industry: ICT Sector

“analogue economy” indicators

- Regulation: cyberlaw, infrastructure regulation, internet governance, privacy, censorship
Problems with the e-Readiness approach (2/2)

The diagram illustrates the distribution of problems related to e-readiness. The categories include:

- Content and Services
- Digital Literacy
- ICT Sector
- Infrastructures
- Legal Framework
- Nondigital

The pie charts show the percentage distribution of these categories, indicating that ICTs and Policies are the main areas of concern, followed by Development and ICTs. The arrows suggest a flow or relationship between these categories, with ICTs and Policies leading to Development and ICTs.
e-Readiness for e-Governance
Digital Divide and e-Governance (1/2)

**Technological Infrastructures**
- Hardware
- Software
- Connectivity

**ICT Sector**
- Infrastructure installation
- Infrastructure maintenance
- Infrastructure creation

**Digital Literacy**
- Technological literacy
- Informational literacy
- Media literacy
- e-Awareness

**Content, Community & Services**
- Locally relevant content
- Content creation, transmission & commercialization
- e-Comunication among individuals and communities
- Presence in the Net & virtual communities
- e-Services
- e-Public Sector

**Legal Framework**
- TelCos Law
- Infrastructures Policies
- Foreign trade Policies
- Intellectual property and patents
- ICT Sector fostering

- Infrastructures Policies
- R+D+I Policies
- Educative Policy

- Intellectual property and patents
- Data protection
- Identity in the Net
- Information Society Law

- Content Policies
- e-Communication Policies
- Distance learning Policies
- Internet Governance
- Foreign trade Policies
- Participative Democracy
- ICT4D
<table>
<thead>
<tr>
<th>e-Readiness</th>
<th>ICT Sector &amp; Content and Services</th>
<th>Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technological infrastructures</strong></td>
<td>• Infrastructures in institutions</td>
<td>• Realistic and progressive goals</td>
</tr>
<tr>
<td>• PC in institutions and agents</td>
<td>• Infrastructures for agents working with the institutions</td>
<td>setting in the field of digital</td>
</tr>
<tr>
<td>• Affordable generic and specific</td>
<td>• Connection among institutions and with agents</td>
<td>divide and e-sectors development</td>
</tr>
<tr>
<td>software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Affordable quality connectivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Digital Literacy</strong></td>
<td>• Infrastructures maintenance</td>
<td>• Identification of promoters</td>
</tr>
<tr>
<td>• Infrastructure creation/maintenance</td>
<td>• Creation of specific databases, applications for public/private</td>
<td>(agents, institutions)</td>
</tr>
<tr>
<td>capacitation</td>
<td>sectors</td>
<td></td>
</tr>
<tr>
<td>• Functional literacy</td>
<td>• Human resources capacitation</td>
<td>• Sponsors participation and</td>
</tr>
<tr>
<td></td>
<td>• Awareness en corresponding e-sector</td>
<td>involvement</td>
</tr>
<tr>
<td><strong>Content, Community &amp; Services</strong></td>
<td></td>
<td>• Prescriptors system</td>
</tr>
<tr>
<td>• Information about institutions and</td>
<td>• Information and user/customer feedback</td>
<td></td>
</tr>
<tr>
<td>agents</td>
<td>• Transparency &amp; monitoring</td>
<td>• Internal organization and</td>
</tr>
<tr>
<td>• Specific/sectorial information,</td>
<td>• Processes shared management</td>
<td>coordination. Legal and political</td>
</tr>
<tr>
<td>content, procedures</td>
<td>• Data sharing and agents relationship/networking</td>
<td>accompanying measures</td>
</tr>
<tr>
<td>• Use of the Net among agents and</td>
<td>• Participation in decision stages</td>
<td></td>
</tr>
<tr>
<td>institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• e-Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• e-Public Sector</td>
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</tbody>
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Digital Divide and e-Governance (2/2)
Barcelona, November 20th, 2007. Universitat Oberta de Catalunya

To cite this work:
<http://ictlogy.net/presentations/20071120_ismael_pena_ict4d_from_e-readiness_to_e-awareness.pdf>
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