Fourth Ministerial Conference on the Information Society in Latin America and the Caribbean
3-5 April 2013
Montevideo, Uruguay

Digital economy for structural change and equality
A decade of the information society

Main messages

- **2003, Bávaro**: Universalizing access.
- **2008, San Salvador**: Mainstreaming ICTs into economic and social processes.
- **2010, Lima**: Reformulating the strategy in light of the impact of technological change (broadband) on the ecosystem.
- **2013, Montevideo**: World hyperconnected by broadband, impact of digitalization on growth and social inclusion.
In summary: this fourth book

- Measures the size of the digital economy.
- Updates findings on ICTs and growth.
- Shows that ICTs are a complementary asset.
- Enters the discussion on ICTs and equality.
- Spotlights the central role of the software and applications industry.
- Draws attention to the need to promote advanced ICTs in small businesses.
- Shows the role of ICTs in health, education and government.
- Suggests strategies and policies in each area.
How we measure the digital economy

DE includes telecommunications infrastructure, ICT industries (software, hardware and services) and the network of activities facilitated by the Internet, cloud computing, mobile networks and sensors.

Digitalization index with six indicators:

1. Accessibility.
2. Network reliability.
3. Access to broadband and devices.
4. Network transmission capacity.
5. Use of applications and incorporation of ICT into diverse processes.
6. Digital training.
The digital economy: systemic vision
The digital economy in the region

- The digital economy represents 3% of GDP in Latin America (EU 27 5%, USA 6%, Japan 7%).
- Smaller gaps in mobile telephony and fixed broadband.
- Gaps are widening in mobile broadband and broadband quality is increasing slowly.
- Demand and uptake gaps are widening.
- Two speeds in the region: some countries at 75% of OECD average, others at 38% of ICT development index.
Digital economy’s contribution to GDP, 2007-2008 (preliminary measures, percentages)

- Japan 2007: 7%
- United States 2007: 6%
- European Union (27 countries) 2007: 5%
- Argentina 2008: 4%
- Brazil 2008: 4%
- Mexico 2008: 3%
- Chile 2008: 3%
The economic impact of ICTs

- ICTs have a positive impact on GDP growth.
  - Accounting for 5% - 14% of growth in 1995-2008.

- Positive impact on labour productivity (Argentina, Brazil and Chile 1995-2008).
  - Concentration in financial industry and mining (only Brazil).
Positive impact of ICTs on GDP growth: 5% - 14% in 1995-2008
### Positive impact on labour productivity between 1995 and 2008

Growth of labour productivity by sector and contribution of ICT capital to that growth  
(Average annual growth in percentage points)

<table>
<thead>
<tr>
<th></th>
<th>Total for the economy</th>
<th>Mining</th>
<th>Industry</th>
<th>Commerce</th>
<th>Financial sector</th>
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<tbody>
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<td><strong>Argentina</strong></td>
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<td>Productivity growth</td>
<td>2.3</td>
<td>-</td>
<td>2.0</td>
<td>1.6</td>
<td>1.7</td>
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<tr>
<td>Contribution of ICT capital</td>
<td>0.3</td>
<td>0.1</td>
<td>0.3</td>
<td>0.5</td>
<td>0.7</td>
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<td><strong>Brazil</strong></td>
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<tr>
<td>Productivity growth</td>
<td>1.5</td>
<td>2.7</td>
<td>-0.5</td>
<td>0.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Contribution of ICT capital</td>
<td>0.5</td>
<td>1.2</td>
<td>0.5</td>
<td>0.4</td>
<td>1.5</td>
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<td><strong>Chile</strong></td>
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<tr>
<td>Productivity growth</td>
<td>3.7</td>
<td>4.2</td>
<td>2.7</td>
<td>6.0</td>
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</table>

Note: the data for Brazil refer to 1997-2009.
The gap in development of ICTs

Variation in ITU ICT development index for the region and OECD countries, 2002-2007

Two speeds in the region: some at 75% of OECD, others at 38%
The region’s digital divide from the OECD countries is growing in mobile broadband.

OCED download speeds are 4 times faster, and upload speeds twice as fast, as those in Latin America and the Caribbean.
Structural change and equality

- Close link between ICTs and equality.
- ICTs co-evolve with the production structure.
- ICTs are a complementary asset.
- Growth needs simultaneous action on supply and demand.
- A 10% rise in the digitalization index leads to 0.8% rise in GDP and employment—three times the impact of expanding access alone.
ICTs and equality

Ratio between richest and poorest quintiles in terms of Internet access

(Multiples)
Spread of ICTs and structural change drive growth, 1990-2008

- Regressions suggest that spread of ICTs + structural change can raise growth rates.
- Included: spread of Internet and an indicator of the production structure’s technology intensity (high-tech exports as a proportion of total exports).
- The variables and their interaction have positive and significant effects.
Positive link with share of high- and medium-high-tech sectors

Relative share in manufacturing value added, 2005-2007

\[ y = 48.811x + 14.839 \]
\[ R^2 = 0.5894 \]
Positive link with export sophistication index 

(Expy) en 2005-2007

\[ y = 2.6156e^{0.0002x} \]

\[ R^2 = 0.6147 \]
Links with income distribution and education

Inequality

PISA
ICT policies for structural change

- Per capita investment in telecommunications in 2012 in Argentina, Brazil and Mexico: 10%-25% of USA.
- Advantages of creating national and regional IXPs (6 countries today) in response to United States concentration (85.5%).
- Intraregional traffic: 30% in LAC and 75% in Europe.
- An emerging region (8%) in global software and apps industry (US$ 2.7 billion in 2011-2012).
- 80% of SMEs have basic ICTs but less than 25% have advanced applications.
- Cloud computing will lower entry costs and could create jobs in SMEs.
Mainstreaming ICTs in businesses: technical progress and public policies

**First level**
- Micro (informal): small and rural sector
- No access to basic ICTs

**Second level**
- SMEs: manufacturing, commerce and services
  - Basic ICT equipment, application and uses (PC, Internet, e-mail, own website), cloud computing

**Third level**
- Medium and large companies: manufacturing, commerce and services
  - Intranet, extranet, e-commerce

**Fourth level**
- Large firms: intensive use of engineering and specialized services ERP, CRM, custom software
ICTs for equality and social inclusion

- Society is relating in new ways to technology.
- Education and technology are inseparable: simultaneous 1-to-1 experiences in education demonstrate this.
- Building skills for the 21st century (decisions, collaboration, digital literacy, etc.).
- Successful learning experiences: telemedicine, electronic clinical records, confidential telehealth.
- E-government (43% of public services online).
- Experience with public procurement and tax administration.
- Progress with integrated platforms, government cloud computing, open data and big data.
A new equation is needed between State, market and society

- Expanding broadband networks and connectivity.
- Policies to develop the software and applications industry.
- Strategies for changing the production structure, modernizing business models and enhancing competitiveness.
- Enabling public access networks (telecentres and free hot spots).
- Capacity-building among users to appropriate technology in different sectors of the economy.
- Generating contents and applications in areas of interest.
- Facilitating adaptation to new models of public service delivery in virtual and online environments.