



**WORLD WIDE WEB
FOUNDATION**

**Advance the Web to
Empower People**



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Beyond Telecom Policies & Regulations:
Internet impacts for who and how

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Objectives



- Understand the types of Impacts
- Understand how these impacts materialize
- Understand who benefits and who does not
- Policies that can harness the positive impacts

Convince a Minister of Finance



- 5 minutes to convince a minister of Finance to dedicate more budget support for broadband Internet, what will you tell her/him

Increased broadband connections in Asia Pacific will generate US \$1.2 trillion of GDP growth and create up to 35 million new jobs by 2020, GSMA (2014), “Today, Tomorrow and the Future

The theme 'Broadband for Accelerated Growth' resonates very well with Kenya's socio-economic growth, just having been re-categorized to a middle income country upon re-evaluation of the contribution of ICTs to our economy. The impact of Broadband on Socio-economic development is well proven and can therefore not be gain-said : Francis Wangusi, DG Communications Authority of Kenya, Commonwealth Broadband Forum, 18 November 2014

"The presence of broadband as a strategic tool in any nation enables the creation of a digital economy crucial for fostering inclusive development. Broadband also plays a very important role in fostering economic development as well as enabling innovation, entrepreneurship and job creation." Dr. Omobola Johnson, Minister of ICTs, Nigeria, November 6th

Impacts of Broadband Internet



- Research on Internet broadband impacts generally falls into the following areas:
 - Contribution to Economic Growth
 - Contribution to Productivity Gains
 - Contribution to Employment

Broadband & economic growth



Country	Authors – Institution	Data	Effect
United States	Crandall <i>et al.</i> (2007) – Brookings Institution	48 States of US for the period 2003-2005	Not statistically significant results
	Thompson and Garbacz (2008) – Ohio University	46 US States during the period 2001-2005	A 10% increase in broadband penetration is associated with 3.6% increase in efficiency
OECD	Czernich <i>et al.</i> (2009) – University of Munich	25 OECD countries between 1996 and 2007	A 10% increase in broadband penetration raises per-capita GDP growth by 0.9-1.5 percentage points
	Koutroumpis (2009) – Imperial College	2002-2007 for 22 OECD countries	An increase in broadband penetration of 10% yields 0.25% increase in GDP growth
High Income Economies	Qiang <i>et al.</i> (2009) – World Bank	1980-2002 for 66 high income countries	10% increase in broadband penetration yielded an additional 1.21 percentage points of GDP growth
Low & Middle income economies	Qiang <i>et al.</i> (2009) – World Bank	1980-2002 for the remaining 120 countries (low and middle income)	10 % increase in broadband penetration yielded an additional 1.38 in GDP growth

Source: ITU 2012

Raises firm productivity: General Purpose Technology allowing firms and individuals to share information in more efficient ways

Allows firms to recombine physical and human capital in more efficient ways thus increasing output per worker

Improves markets through reduction of transaction costs – reduces costs related to information acquisition and dissemination, thus reduces search costs

Jensen (2007)	mobile phones in India, reduces price dispersion across fish markets and increases both producer and consumer welfare
Aker (2010)	Mobile phones resulted in 20% reduction in grain price difference across grain markets in Niger
Beurmann (2011)	availability of payphones in rural villages in Peru, helped raise agriculture income by 16%
Goyal (2010)	Internet Kiosks in villages in central India helped farmers bypass intermediaries and receive better crop prices

Improved match between labor Supply and demand, & Compensates for geographical isolation

Aker, Clemens & Ksoll (2011)	Mobile telephony helping match urban jobs with candidates from Rural Niger
Mansour (2011)	Young jobseekers in the US: those using the Internet were able to find jobs 25% faster than those not using the Internet
Mang(2012)	those who find their job online are better matched than those who find their jobs through other channels

Combination of technology and stimulation of innovative businesses

Advertising

Electronic commerce

Job matching platforms: Mpawa

Micro work: Elance- Odesk

Crowdfunding: Kickstarter

Who benefits



Country	Internet Penetration 2013 (ITU)
Kenya	47%
Uganda	16.2%
Malawi	5.4%

Who benefits



- Return to scale: higher effects in countries that have higher adoption of technology
- Stronger productivity impacts in sectors with high transaction costs such as finance or high labor intensity

Impact on SMEs will take longer to materialize

- Strongly dependent on complementary investments in human capital and reorganization of activities in the firm

Full potential will be realized only if complementary innovation become available

Different growth trajectories have different implications on employment (Loayza & Raddatz, 2006)

Atasoy (2013), US study	Broadband investments might result in 1.8% increases in employment. Effects larger in countries with college educated workers. Broadband compensates for geographic isolation
Forman & Al. 2012	ICTs linked to skilled labor so suggest that Internet will exacerbate income inequalities
Do Los Rios (2010); Impact of Internet adoption on household income in Peru	Internet users experienced improved income compared to those that did not have access to Internet, however Internet adoption has no effect on probability of finding employment
May et al. (2011), household data for Kenya, Rwanda, Tanzania and Uganda	Access to ICTs linked to 2.5% reduction in poverty, magnitude bigger for poorest households

Internet has an impact on wages and employment but those who are skilled will benefit more

Internet may compensate for geographic isolation allowing business and workers to expand beyond local markets which might compensate for skills bias

Improving labor market coordination

Strengthening social capital which is closely associated with employment : reconfigures social particularly relevant to the poor (Donner 2009)

Promoting the acquisition of ICT skills: links between ICT skills and finding a job (Di Maggio & Bonikowski, 2008; Mossberger et al. 2007)

Machin & Al. (2006), Banerjee et al. 2007, Carillo et al. 2010	Positive impacts on math and other subjects
Angrist & Lavy, 2002; Osorio & Liden 2009)	no significant effects of computer use on student achievement
(Sprietsma, 2012)	Negative impacts on student achievements given lack of teacher training and displacement of time from other education activities
Belo et al. 2010, study in Portugal	introduction of Broadband in schools negatively affected student learning as result of ineffective use of Internet. Students from schools that have blocked access to non educational web sites have tended to do better.

Who & What



Started with Minister of Finance.....but seems that we need to talk to minister of ICTs, Minister of Science and Technology, Minister of Education

Ministry of Finance	Revoke certain taxes
Ministry of ICTs & regulator	Competition: reduce start up costs and prevent entrenched interests from incumbent, support affordable access
Ministry of Education	Skills Development and Education for learners and teachers
Science and Technology	harness linkages between private sector and higher education

Web Index



Universal Access



Communication Infrastructure	Access & Affordability	Education & Awareness
<p data-bbox="19 342 637 449">% of populations covered by mobile cellular network</p>	<p data-bbox="685 342 1246 449">Cost of fixed broadband per capita income</p> <p data-bbox="685 521 1246 1220">Are there specific policies to promote free or low-cost public internet access, such as budget allocations for internet access in public libraries, schools and community centers, or provisions for spectrum use by community wifi options? (57% of countries don't)</p>	<p data-bbox="1304 342 1903 449">Proportion of female / male ICT graduates</p> <p data-bbox="1304 578 1903 749">Government prioritization of web access for women and girls</p>

Freedom & Openness



Freedom & Openness

To what extent has the government blocked (or required ICT firms to block, filter or take down) politically or socially sensitive Web content during the past 12 months?

P5) To what extent is there a robust legal or regulatory framework for protection of personal data in your country?

P7) To what extent are ISPs required by law or regulations to manage network traffic in a manner that is transparent and does not discriminate against certain types and/or providers of web content and services for commercial gain?

P9) To what extent are there laws and regulations in your country that provide both substantive and procedural safeguards to protect the privacy of electronic communications?

Relevant Content and Use

To what extent can women and girls find user friendly information via web-powered ICTs about reproductive and sexual health rights and services?

To what extent can smallholder farmers discover information (for free) that could affect their livelihoods using their mobile phones or other Web-powered ICT platforms?

To what extent is there a well-resourced open government data initiative in this country?

Social & Environment

teachers and administrators receiving appropriate training in how to use ICTs to improve education outcomes

extent to which web-powered ICTs made a noticeable impact on the ability of women and girls to claim and demand their rights?

Political parties web use for mobilization (WF)

Economic Impact

To what extent are web-powered ICTs contributing to the growth of small and medium enterprises (SMEs)?

To what extent does the law protect people from crimes committed over the Internet (i.e. do the laws exist and are they enforced)?

Political Impact

tTo what extent do major CSOs use Web-powered ICTs to educate and inform citizens about government decision-making and public policy issues?

Over the past year, to what extent have web-powered ICTs been used to catalyse social or political action?