Broadband Internet Affordability

1. Does it matter at the first place?

2. Why broadband access should be universal and affordable, and why connecting more people with the information, education, and health care services of the Web benefits the economy and society?

3. And, why affordable high speed internet access matters today? And, how A4AI has been supporting the agenda?
What is A4AI?

We are the **world’s broadest technology sector alliance** working to

**drive down the price of broadband**

by

**transforming policy and regulatory frameworks.**
The Web Belongs to All of Us

In 1989, Sir Tim Berners-Lee invented the World Wide Web. Then, he gave it to the world for free. Now, it's up to all of us to protect and enhance it. Find out more about Sir Tim, the history of the Web and how the Web Foundation is creating a better Web for all.
A global multi-stakeholder coalition

- 80 members from across the private, public & non-profit sectors
- Member organisations come from developed & emerging countries
- Particular focus on local partners based and working on the ground in countries of engagement (currently close to 250 partners across the countries)
Aligned around policy and regulatory best practices

All member organisations have endorsed a set of nine best practices

→ Aim to ensure open, competitive markets
→ Policies & regulations needed in place to lower cost structure for the industry
→ Grounded on principles of Internet freedom & the fundamental rights of expression, assembly, and association online
Direct support & action: Where are we working?

- Dominican Republic
- Liberia
- Ghana
- Nigeria
- Myanmar
- Mozambique
How do we work in member countries?

In each member country, we form a national multi-stakeholder coalition

civil society  public sector  private sector

to

identify key barriers to affordable access &
device tailored solutions to drive prices down
Conducting robust original research to underpin evidence-based policy

- **Annual Affordability Report**
  - Newest edition published March 2016

- **Case studies**
  - Ghana, Nigeria, Cameroon, Peru, Brazil, Dominican Republic, Myanmar, Bangladesh

- **Thematic briefings**
  - Gender Audit, Universal Access & Service Funds; Zero-rating & other mobile data plans
International advocacy through global partnerships

Working together to expand access & achieve the SDGs

- Operationalizing recommendations from the 2016 WDR report to close the digital divide & expand digital dividends (World Bank)
- Building capacity to develop strong ICT & gender policy (ECOWAS, CRASA & other regional organizations)
- Advocate for gender responsive policy and better & improved gender data and indicators (UN-Women, GSMA)
Does affordable broadband Internet matter?

Yes, it matters, but first, some facts.
Internet coverage: the trend in the last decade

Seven billion people (95% of the global population) live in an area that is covered by a mobile-cellular network. Mobile-broadband networks (3G or above) reach 84% of the global population but only 67% of the rural population.

LTE networks have spread quickly over the last three years and reach almost 4 billion people today (53% of the global population), enhancing the quality of Internet use.

Source: ITU.
Note: * Estimates. Mobile network coverage refers to the population that is covered by a mobile network.
Mobile-broadband subscriptions

In developing countries, the number of mobile-broadband subscriptions continues to grow at double digit rates, reaching a penetration rate of close to 41%.

The total number of mobile-broadband subscriptions is expected to reach 3.6 billion by end 2016.

Fixed-broadband subscriptions

Fixed-broadband penetration remains at below 1% in Africa and the LDCs.

Strong growth in China is driving fixed broadband in Asia and the Pacific, where fixed-broadband penetration is expected to surpass 10% by end 2016.

Source: ITU. Note: Data are estimates. CS refers to Commonwealth of Independent States.
THE DIGITAL DIVIDE IN 2016

Percentage of individuals using the Internet

Close to one out of two people (47%) in the world are using the Internet but only one out of seven people in the LDCs.

Developed regions are home to one billion Internet users, compared to 2.5 billion users in the developing world.

Percentage of households with Internet access

Almost two-thirds of households in the Americas are connected, compared with half of all households globally.

Almost 1 billion households in the world have Internet access, of which 230 million are in China, 60 million in India and 20 million in the world’s 48 LDCs.
More than half of the world’s population is not using the Internet.
1. A significant digital divide remains

- **6 BILLION** without **BROADBAND**
- **4 BILLION** without **INTERNET**
- **2 BILLION** without **MOBILE PHONES**
- **0.4 BILLION** without **A DIGITAL SIGNAL**

Divides persist between and within countries—in access and capability

**SOURCE:** WDR 2016 team based on Research ICT Africa and ITU data
Broadband Internet access matters
Broadband Internet access matters

Business

People’s lives

Governments

Number of small & medium enterprises on Taobao (Alibaba):
5 MILLION & COUNTING

Number of mobile money accounts worldwide:
300 MILLION & COUNTING (end of 2014)

Indians with digital identity:
950 MILLION & COUNTING
Broadband Internet access matters

DIGITAL DIVIDENDS

Growth — Jobs — Services

Business — People — Government

AGENTS

Are the benefits reaching everyone, everywhere?
Broadband Internet access matters to the nation

(Source: Deloitte, “Value of Connectivity: Economic and Social Benefits of Expanding Internet Access”)
Broadband Internet access matters to individuals

Digital identity is central to accessing digital citizenship services

- Controls personal information
- Communicate securely
- Consult physician online
- Submit tax returns
- Use as mobile key
- Vote online
- Receive entitlement
- Digitally sign contracts

Trusted digital identity as centre-piece of everyday life

Figure 4. Summary of economic impacts of extending internet penetration by region

- Africa: 92% increase in rate of growth of GDP, $450 increase in annual GDP per capita, 44m additional jobs, 30% decrease in extreme poverty (%)
- Latin America: 37% increase in rate of growth of GDP, $630 increase in annual GDP per capita, 5m additional jobs, -13% decrease in extreme poverty (%)
- India: 110% increase in rate of growth of GDP, $500 increase in annual GDP per capita, 65m additional jobs, -28% decrease in extreme poverty (%)
- South and East Asia: 75% increase in rate of growth of GDP, $630 increase in annual GDP per capita, 27m additional jobs, -16% decrease in extreme poverty (%)

Source: GSMA intelligence, IMF, ILO, World Bank and Deloitte analysis
Broadband Internet access matters to companies

Source: Internet Trends 2016 cited in the Broadband Report
Broadband Internet access matters for achieving the SDGs

<table>
<thead>
<tr>
<th>Area</th>
<th>SDG</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Health, water, sanitation | SDG 3: Ensure healthy lives and promote well-being for all at all ages.  
SDG 6: Ensure availability and sustainable management of water and sanitation for all. | Sensor- and SMS-enabled village water pumps (Rwanda, Kenya); GSM-connected fridges for vaccines in the ‘cold chain’ (Global); sensor-enabled ‘band aid’ to monitor Ebola patients’ data (W.Africa); water stream gauge with sensors to monitor river flow/depth (Honduras). |
| Agriculture & livelihoods | SDG 1: End poverty in all its forms.  
SDG 8: Promote sustained, inclusive & sustainable economic growth, full & productive employment & decent work for all.  
SDG 2: End hunger, achieve food security & improve nutrition & promote sustainable agriculture. | Connected micro-weather stations improving localized weather data and provision of crop failure insurance (Kenya); low-cost mobile-controlled micro irrigation pumps (India); soil-monitoring sensors used to improve tea plantations (Sri Lanka, Rwanda); RFID for tracking, theft prevention and vaccination of livestock (Botswana, Senegal & Namibia). |
| Education          | SDG 4: Ensure inclusive and equitable quality education & promote lifelong learning opportunities for all. | Smart identity cards with biometric features for education (Nigeria); biometric clocking to improve teacher attendance (South Africa); Connected Schools Initiative (Spain). At Kenyatta University in Kenya, staff use identity cards to clock in/out of campus. Students use identity cards to clock in, borrow books & pay for food. |
### Broadband Internet access matters for achieving the SDGs

| Environment & Conservation | SDG 12: Ensure sustainable consumption and production patterns. SDG 13: Take urgent action to combat climate change and its impacts. SDG 14: Conserve and sustainably use the oceans, seas & marine resources for sustainable development. SDG 15: Protect & promote sustainable use of terrestrial ecosystems, manage forests, combat desertification, reverse land degradation & halt biodiversity loss. | Radio-based cloud-connected devices to identify and track the presence of illegal fishermen (Timor-Leste); air pollution sensors to monitor urban outdoor air pollution (Benin); acoustic sensors to monitor sea bird populations (global); sensors and connectivity to protect game park perimeters and track animals (Africa); connected unmanned aerial vehicles monitor national parks and connecting images from camera traps (UAE); acoustic sensors in tropical rainforests ‘listening’ for illegal logging (Indonesia). |
| Resiliency, Infrastructure & Energy | SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all. SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, & foster innovation. SDG 11: Make cities and settlements inclusive, safe, resilient & sustainable. | National Plan for Smart Cities (Spain). VimpelCom has enabled donations via SMS for people struck by natural disasters in Georgia and Tajikistan. |
Broadband Internet access matters for achieving the SDGs

<table>
<thead>
<tr>
<th>Governance &amp; Human Rights</th>
<th>SDG 10: Reduce inequality within and among countries. Retinal scans used for ATMs providing secure biometric cash assistance to displaced refugees (Jordan).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SDG 16: Promote peaceful and inclusive societies for sustainable development, access to justice &amp; accountable, inclusive institutions.</td>
</tr>
<tr>
<td>Cross-cutting</td>
<td>SDG 5: Achieve gender equality and empower all women and girls. ICTs can be used to enable girls and women to learn more about their rights online and to acquire skills. VimpelCom runs an m-Literacy program aimed at empowering (digitally) illiterate women in rural areas of Pakistan.</td>
</tr>
</tbody>
</table>

Source: ITU & Cisco Systems.
Gender equality in access to ICTs and broadband is essential for empowering women and girls through access to information, learning, improved decision-making, better education, new digital skills and potentially better incomes, although there is some discussion about the impact and consequences of the Internet and web content on the perceived status of women. Gender equality was recognized as a goal in both the MDGs and the SDGs as both a principle and a stand-alone goal (SDG #5), as well as being integrated into all other SDGs as a vital enabler of true and equitable development. Improving women’s participation and empowering women has been recognized as a powerful enabler for improving their lives, as well as the lives of their families, in development projects in many different areas.

(Source: WDR, 2016)
Broadband Internet access matters in health sector

(Source: Deloitte)
Broadband Internet access matters in eGovernance

The Internet is a powerful tool to improve transparency, provide citizens with access to information, and automate revenue collection.

- Informational services
- Transactional services
- Participative democratic practices
Broadband Internet access matters in Agriculture

- Enhancing on-farm productivity
- Lab to lab, Lab to land, Land to lab, Land to land exchanges
- Facilitating market transparency
- Reducing input costs and enhancing output revenue
- Enabling efficient logistics and improved quality control
- Big data and data analytics for precision planning and decision-taking
Broadband Internet access matters in environmental protection

By 2020, broadband-enabled ICT solutions can:

- Reduce greenhouse gas (GHG) emissions by 16.5%
- Save up to 9.1 gigatonnes of carbon dioxide emissions
- Create 29.5 million jobs
- Yield US$1.9 trillion in savings

(Source: GeSI SMARTer 2020, 2012)

How?

- Shifting from traditional retail to e-commerce could lower energy consumption and GHG emissions by 30%
- Teleconferencing & telecommuting will decrease the need for air/land travel, reducing GHG emissions by 25%
- Moving newspapers online could reduce CO2 emissions by 57.4 million tonnes

(Sources: Broadband Commission, 2013)
Broadband Internet access matters in education

The Internet can drive improvements in education access and quality. Access to broadband:

- Allows increased access to information, online courses and educational resources
  - Online courses
  - Mobile learning applications
  - Web-based remote teaching
- Enables learning opportunities outside of formal settings, including in rural areas or areas where schools may not be available or accessible
Broadband Internet access matters in education

The internet plays a pivotal role in extending access to educational resources and in accelerating knowledge sharing.

The internet provides access to education resources. The internet improves the quality of offline education. Better school performance with online learning resources. As a result of education improvement, young people are more employable. Improved literacy promotes social inclusion and benefits the economy.

Access to the internet improves access to education by providing students with learning opportunities and materials online.
Broadband Internet access matters in businesses

How can broadband create opportunities and growth in the business sector?

Increase employment and entrepreneurship
- Mobile broadband will open up regional and global markets to local entrepreneurs
- Dominican Republic: A 10% increase in broadband penetration could reduce unemployment by 2.9%
- Indonesia: Mobile broadband could boost GDP by 2.9% or US$22.6 billion
- India: Broadband has generated nearly 9 million direct and indirect jobs and an additional 1% increase in broadband penetration could add US$2.7 billion to its GDP in 2015
- South Africa: Broadband and related industries can generate US$7.2 billion and a further 28,000 jobs by 2015

Small and medium enterprise (SME) growth
- Enables SMEs to generate more revenue, lower costs, higher productivity, and jobs
- SMEs that spend more than 30% of their budget on Web technologies grow their revenue 9x as fast as SMEs that spend less than 10%

(Source: Broadband Commission, 2013)
Broadband Internet access matters for the unbanked

Percentage of people with a formal bank account

Source: World Bank Findex
Broadband Internet access matters in financial sector

How can broadband create opportunities and growth in the finance sector?

**Mobile Banking:**
- Provide financial services, through Internet banking and digital payment platforms, to those previously excluded
  - More than 60 percent of Africans could have access to banking services by 2025, and more than 90 percent could use mobile wallets for daily transactions and remittances
  - Revenue from mobile financial services could increase from less than $1 billion today to $19 billion in 2025. In addition to increased revenue, productivity gains in the sector are estimated to be $8 billion to $10 billion

**E-Commerce:**
- Could account for 10% of retail sales in Africa’s largest economies, translating into US$75 billion in annual online sales
- Resulting economic activity could generate US$2.2 trillion in additional GDP, a 72% increase in the GDP growth rate, and more than 140 million new jobs (Source: Deloitte)

(Sources: Broadband Commission, 2013; McKinsey, 2013)
Broadband Internet access matters for smart cities

Access can accelerate the four pillars of smart cities

**Economic:** The city must be able to thrive and generate jobs, income and employment for the livelihood of its inhabitants.

**Social:** The city must be able to provide for the welfare (safety, health, education) of its citizens equally.

**Environmental:** The city must be sustainable in its operations for present and future generations.

**Governance:** The city must be robust in its ability for administrating policies and pulling together the different elements.
The socio-economic benefits of upgrading broadband speeds and enhancing affordability
Benefits of increased broadband speed

For BRIC countries:

- Upgrading from 0.5 to 4 mbps can increase household income by US$46 per month
- Introducing 0.5 mbps broadband connection in BRIC households can increase annual household income by US$800 per year, equivalent to US$70 per month per household

For Businesses:

- Speed matters in online commerce
- Speed matters for those who manage payment gateways
- Netflix is a case in point

Benefits of increased broadband speed

For OECD economies:

- Doubling the broadband speed can increase GDP growth by 0.3% on average.
- At the household level, the average increase in household income for a broadband speed upgrade of 4 - 8 mbps is US$120 per month.
- The threshold broadband access speed to increase earnings is somewhere between 0.5 mbps and 2 mbps on average.
- The greatest expected increase in income is for the transition from being without broadband to gaining 4 mbps, the difference being around US$2,100 per household per year (equivalent to US$182 per month).

(Source: Ericsson, “The Socio-Economic Effects of Broadband Speed Upgrades”)

![Graph showing broadband subscriptions per 100 inhabitants by speed in 2015.](image)
An analysis by the World Bank found that in developing economies, every 10 percent increase in broadband penetration accelerates economic growth by about 1.38 percentage points — more than the increase of 1.21 percentage points for developed economies, and more than the increases seen for other telecommunications services.

(Source: Intel)
Figure 4. Average price of a 1GB (postpaid, computer-based) broadband plan as a % of GNI per capita, by region

Figure 3. Average price of a 500MB (prepaid, mobile) broadband plan as a % of GNI per capita, by region

Source: Affordability Report, A4AI, 2015 showing the price for 2012, 2013 and 2014
By end 2015, 83 developing countries had achieved the Broadband Commission's affordability target.

In 2011, the Broadband Commission for Digital Development set the following target:

"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)."

Source: ITU Facts and Figures 2016
What is the state of affordability?

The high cost to connect is excluding billions from the digital revolution

*Over half the world’s population is still offline*

129 countries have met the UN affordability target of basic broadband priced at 5% or less of average monthly income by 2015

**YET**

**9 countries**
meet this target for the bottom 20% of income earners

**0 countries**
meet this target for those living in poverty
Internet for all by 2020?

In September 2015, world leaders agreed on a new global goal: Affordable, universal internet access in the world’s least developed countries by 2020.

On current trends, the world will miss this goal by 22 years.
INVISIBLE MILE
Hidden elements that are vital to ensuring the integrity of the value chain
Non-visible network components include the spectrum, network databases, cybersecurity, etc., but can also include potential bottlenecks, like international frontiers.

FIRST MILE
Where the internet enters a country
International internet access, including submarine cables, landing stations, satellite dishes, cross-border microwave, etc.

MIDDLE MILE
Where the internet passes through that country
National backbone and intercity network, including fiber backbone, microwave, internet exchange points (IXPs), local hosting of content, etc.

LAST MILE
Where the internet reaches the end user
Local access network, including local loop, central office exchanges, wireless masts
<table>
<thead>
<tr>
<th>Country</th>
<th>ADI Ranking (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>3</td>
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<tr>
<td>Thailand</td>
<td>13</td>
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<tr>
<td>China</td>
<td>22</td>
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<tr>
<td>Vietnam</td>
<td>24</td>
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<tr>
<td>Myanmar</td>
<td>27</td>
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<tr>
<td>Philippines</td>
<td>28</td>
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<tr>
<td>Indonesia</td>
<td>29</td>
</tr>
<tr>
<td>India</td>
<td>31</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>33</td>
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</tbody>
</table>

Affordability Drivers Index Ranking (APAC)

Our Affordability Drivers Index (ADI) looks at the policies, incentives, and infrastructure investments in place across 51 developing and emerging countries, and assesses the extent to which they are being implemented. This includes policies which we believe drive progress towards more affordable Internet. Countries that do well on the ADI also tend to have lower broadband prices for their citizens, although the ADI does not measure price directly.
What action must we take to make universal access a reality?

- **Commit to a new “1 for 2” affordability target**
  
  1GB of mobile data priced at 2% or less of average monthly income

- **Prioritise & expand public access initiatives**
  
  Critical to bringing connectivity to the most marginalised

- **Design policies with a gender focus**
  
  Closing the digital gender gap will require policies to reduce barriers for women
A4AI Policy Recommendations

- Redefine Affordability with income and gender inequalities in mind
  Redefine ‘entry-level’ broadband as a 1GB data plan
  Set a more ambitious cost target
  Adopt and work forward a new “1 for 2” target
- Reduce the cost of devices
- Prioritise public access facilities
- Develop gender-responsive national broadband plans
  REACT goals (Rights, Education, Access, Content and Targets)
- Integrated approach to policies for affordable broadband Internet

(Source: A4AI.org)
How is A4AI working to tackle these gaps?

- Encouraging the adoption of ambitious affordability targets to drive down prices & increase access
- Working with national coalitions & stakeholders on the ground to develop policies needed to improve affordability
- Improving collection of gender- and poverty-disaggregated data to track progress
- Advocating for expanded public access initiatives

Designing gender-responsive policy
## National Coalitions: Selected engagement areas

<table>
<thead>
<tr>
<th>Country</th>
<th>Identified Priority Issues (1st Phase)</th>
</tr>
</thead>
</table>
| Ghana    | • Data collection/research to develop solid evidence for policy decisions  
• Taxation  
• Infrastructure sharing & open access  
• Pricing transparency; user awareness of services  
**Win: 20% import tax on smartphones reduced**                                                                                                     |
| Nigeria  | • Pricing transparency; consumer awareness  
• Open access framework and infrastructure sharing  
• Spectrum policy: availability, allocation & innovative uses of free/unlicensed spectrum  
• Data collection and indicators (M&E)  
**New Minister appointed in November 2015 & joined Coalition meeting**  
**NCC has new head**                                                                                                                            |
| Mozambique | • Data collection/research to develop solid evidence base for policy decisions  
• Taxation (*submission to reduce import taxes on devices & BB infrastructure inputs*)  
• Infrastructure sharing (*draft infrastructure sharing regulations being developed*)  
**Win: inclusion of ICT indicators in 2017 National Census**                                                                                      |
### National Coalitions: Selected engagement areas

<table>
<thead>
<tr>
<th>Country</th>
<th>Identified Priority Issues (1&lt;sup&gt;st&lt;/sup&gt; Phase)</th>
</tr>
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</table>
| **Dominican Republic** | • Development of a Digital Agenda  
• Data collection/research to develop solid evidence base for measuring progress toward Digital Agenda goals and for sound policy decisions  
• Taxation and fiscal policy in general  
• Infrastructure sharing and open access  
**Win:** Revived Digital Agenda development process, had been dormant for 5+ years; got the attention of Presidential candidates |
| **Myanmar**       | • Universal Access and Service Fund  
• Open access framework and infrastructure sharing  
• Taxation and tariff structures  
• Data collection and indicators for evidence based policy-making |
| **Liberia**       | • Support ICT Policy development with multi-stakeholder approach and policy advice *(Draft policy for consultation in March 2016)*  
➢ Targeted approach and advice |
Broadband and High Speed Internet Access is what we ought to advocate for

High speed Internet Access matters

High Speed Internet Access is the lifeline of tomorrow

According to the WDR 2016, a good majority are yet to experience it!
Broadband Internet Access and Affordability is key to nation-building

Thank you

Alliance for Affordable Internet

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