**Policy Options for Connecting and Enabling the Next Billion – Phase II:
Call for Public Input**

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1. Defining the theme "Connecting and Enabling the Next Billion"?

APC considers this to be a broad term which not only refers to strategies that help to
ensure broadband is affordably available to the unconnected, but also improving the
connectivity of the billions who are still only 'barely connected' – due to the high cost, low
speeds or discrimination, or other types of unequal access present in many countries. It is
important to observe that access inequalities are more visible when disaggregated by
disadvantaged groups – particularly women (who are often concentrated in low income
groups), but also other groups at risk, such as cultural minorities, people living in remote
small islands, and in the least developed countries generally.

Connectivity inequalities are also particularly evident along the urban/rural axis. In most
developing, and even some developed countries, internet users in rural areas are often
faced with limited coverage and much slower internet speeds. In addition, those restricted
to mobile services experience broadband speeds that are comparatively low, while
latencies and costs are usually much higher than fixed wireless (e.g Wifi) or cable-based
services. In addition, mobile links usually have metered access and tariff caps which
constrain the amount of data that can be exchanged affordably, while complex tariff
packages can limit competition and restrict the user's ability to manage costs effectively.

2. The local factors to consider when adopting policy options aimed at the creation of enabling environments

The level of institutional development of the policy and regulatory agencies needs to be
first taken into account in determining where resources first need to be applied.

The availability of up to date information on the policy and regulatory environment and the
wholesale & retail market data needs to be in place along with public consultation
processes, so that evidence-based policy making can take place.

Attention then needs to be paid to the level of market dominance of existing operators in
order assess the need for policies which ensure that small new market entrants using the
latest technologies to provide services are not constrained by existing operators. Legacy
incumbent fixed national operators and a few mobile operators continue to dominate the
market for broadband. This affects availability, cost, and quality of service. National
governments often continue to protect the legacy fixed line operators or the 'new
incumbents' – the mobile operators. In addition, ISP licensing requirements can be too
onerous for small new market entrants, and interconnection regulations usually still favor
or protect the dominant providers.

Conservative spectrum allocation policies also continue to restrict the potential for entry of small new providers looking to make use of the latest technologies. For example fixed broadband operators can use new wireless technologies such as TV White Space (TVWS), and other dynamic spectrum sharing approaches, but so far it appears that only the Philippines has made it a national priority to use these systems to help address connectivity issues.

Local decentralization and community support policies can also have an important role to play in the creation of enabling environments, for example where our member Rhizomatica in Mexico was able to obtain access to GSM spectrum for the provision of services with local indigenous communities.

3. The specificities around connectivity at local or regional levels

Geographic and geopolitical factors often have an important role in determining the location of traffic hubs where multiple international fibre cables interconnect, providing a competitive market for trading capacity. These locations develop their own special network effects which attract even more operators to build infrastructure into these locations.

At the other extreme, small landlocked countries and islands can find themselves at a disadvantage with the much higher costs of upstream capacity.

Small low-income countries are generally less able to create a competitive market in broadband services due to the lower levels of potential revenues that attract operators. Areas in developing countries which are sparsely populated are particularly disadvantaged due to the high cost of network maintenance and lack of economies of scale, and as a result also suffer from high connectivity service provision costs. Areas without access to affordable electricity also face similar additional cost barriers to obtaining access.

Groups that are discriminated against culturally and socially, also suffer from similar inequalities online.

A significant portion of low-income populations may now have a mobile phone, but many still do not, and even fewer have a phone capable of using broadband access. In sub-Saharan Africa for example, the GSMA estimates that 57% of the population do not have a phone, while 32% have only a basic feature phone, leaving just 9% with smartphones (and 2% with data only devices). Low levels of smartphone use in many locations are partly the result of limited demand caused by low basic literacy and issues which limit affordability of devices (such as taxes and import duties in some countries). However more importantly, mobile broadband data services often do not extend outside of urban areas, and even where they do, are costly to use – so there is little motivation to paying more for a smartphone.

Thus it can be concluded that rural areas in developing (and even many developed countries with large sparsely distributed populations) need specially focussed policy responses to ensure everyone has equal access. For example, public access facilities

could be made more widely available, and communities
without access should be able to establish their own connectivity solutions, without having
to wait for an expensive national mobile broadband service to reach them.

It should be emphasized that there is no 'one-size-fits-all' solution and that national broadband
strategies need to be developed through extensive public consultation which include all
stakeholder groups – national and regional government structures, private sector and civil society.

4. Barriers or limitations preventing people who do have Internet access from being enabled or empowered through such connectivity

As indicated above, most of those who **do** have connectivity still suffer from high costs,
metered use and lack of transparent pricing mechanisms, which, when combined with the
intangible nature of data consumption, introduces high levels of uncertainty into the costs
of broadband access. This creates a strong chilling effect on usage, and especially limits
the incentives for local content creation. This is simply being amplified by the ever
increasing speeds operators are trying to sell – as one user aptly observed - "What good is
LTE to me? I just use up my data cap twice as fast".

Another localised problem for many of those that are already online in some countries, is
that the lack of local hosting, interconnection (IXPs) and caching infrastructure acts to slow
down the speed of services because they need to be delivered over international links.
This also acts to increase the cost of services because expensive international capacity
must be used to carry the traffic. Data sovereignty and local accountability is also affected
if strategic data and content is hosted off-shore. Surveillance and censorship of
communications data also constrains the use of broadband in some countries, some are
confined to 'walled gardens' comprising a small subset of subsidised web sites.

5. What does meaningful access mean?
One cannot speak simply of those who are either meaningfully connected or unconnected
– there is actually a spectrum of connectivity levels ranging from complete disconnection
up to the fully connected on high bandwidth unlimited connections, with the majority of
connected people somewhere in between – most of them being irregularly connected on
high cost low-speed metered mobile broadband links.

In this respect APC observes that equal efforts are necessary, not only to connect more
people, but also to move the billions who are 'barely connected' into a fully pervasive and
affordable connectivity environment. Similarly, connecting the next billion is not simply a
matter of improving the coverage of mobile broadband services, but also of improving the
affordability of both fixed and mobile services, and of having the relevant local applications
available, supported by access to skills and secure electronic payment platforms.

6. How can connectivity contribute to reaching the new SDGs?
The cross-cutting nature of connectivity means that better access to broadband and
the associated reduced communication costs and improved access to information is
expected to have a positive impact on virtually all the SDGs, but in particular, SDG 4
Quality education, SDG9 Industry, innovation, and infrastructure, SDG10 Reduced
inequalities and SDG 11 Sustainable cities and communities. Continued innovation in
the ICT sector around the IoT could also have an important role to play in helping to

7. Where using ICTs to support development has not worked

There are many, but perhaps this question is too broad to attract responses that focus purely on connectivity issues. In this area, a classic example is in some of the early 'Telecentre' deployments where public access facilities were set up without regard to ensuring that the cost of connectivity was low enough to be affordable. Many rural connectivity projects fail because not all of the components are in place – power, skills, affordable broadband, useful applications and security.

8. Can you think of ways in which ICTs or Internet connectivity could be used to help reach the SDGs?

This question appears to be the same as question 6.

9. Success stories can illustrate how Internet access can help to address real-world problems, for example, regarding some or all of the following SDG-related questions.

This is essentially the same as questions 6 and 8, and has been well documented, such as by the UN system at: http://www.itu.int/net4/wsis/sdg/Content/wizes-sdg_matrix_document.pdf

Policies to promote connectivity also require measurable targets by which to judge their effectiveness. Measures also need to pragmatic, rather than exhaustively accurate – they need to be easily obtained, objective, comparable and up-to-date. In this respect the following few simple measures are proposed, aiming to provide not only an indication of the numbers connected but also the level of internet utilization.

Comparison between countries can be useful in identifying effective policies, but the key aim with the use of indicators is to be able to measure progress in a country over time. Therefore the data points should ideally be updatable on a quarterly basis and authorities may need regulations to ensure that network operators provide the necessary data in a timely fashion.

- Number of broadband subscriptions per capita (%). 'Broadband' being defined as a connection of at least 512Kbps today but growing to the higher rates available in developed countries. Data should be disaggregated according to gender, age, geographic area and minority groups. Full data disaggregation may only be feasible on an annual basis.
- Data traffic per capita (bps). Defined as the total of domestic network data traffic generated by broadband users divided by the total population.