A4AI ALLIANCE FOR AFFORDABLE INTERNET

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AFFORDABLE INTERNET IN GHANA: THE STATUS QUO AND THE PATH AHEAD

Ghana, one of sub-Saharan Africa's most influential nations, has prioritized ICT investment in recent years. This case study—which is intended to be a snapshot, not an exhaustive exploration of issues—briefly analyses the status quo, summarizes the policy environment, and presents some challenges and opportunities facing Ghana in the country's quest to make broadband truly affordable.

This case study was prepared by Kojo Boakye, Policy Manager at A4AI, with contributions from the A4AI team.

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1. INTRODUCTION

At present, affordable broadband remains a dream for the majority of Ghana's 25 million inhabitants. At the end of 2012, the ITU reported that only 17.1% of Ghanaians used the Internet.[1] Another 2012 survey (Research ICT Africa) provides insights as to why.[2] Cost was cited as the primary reason for not accessing the Internet, with almost 60% of respondents reporting that they found the Internet expensive to use. Other barriers centered around lack of local peer users and content.

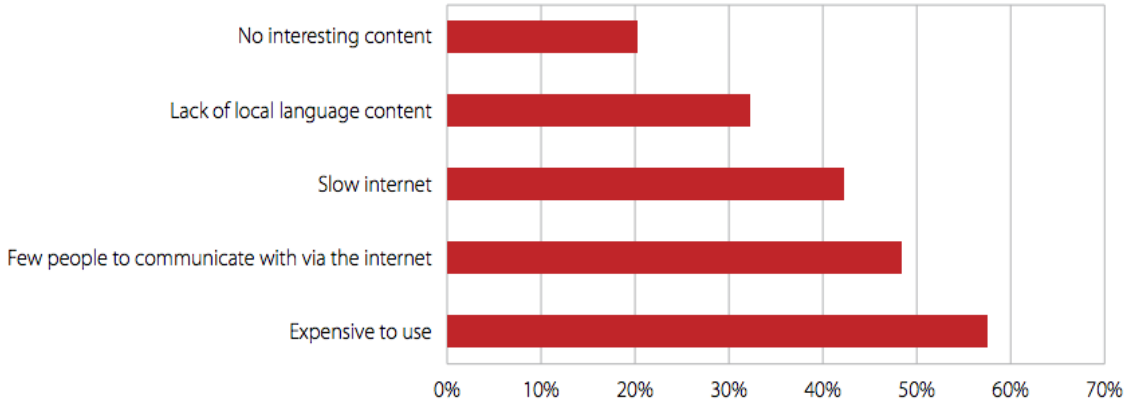

Figure One: Barriers to Internet Use in Ghana

Source: Research ICT Africa, 2011-12 data. Data based on multiple responses

The Government of Ghana seems committed to tackling this challenge. At the recent regional preparatory meeting for the World Telecommunications Development Conference (WTDC-2014), Ghana's Minister of Communications, Dr Edward Kofi Omane Boamah told fellow participants: "*We should endeavor to provide high-speed internet at very affordable prices and good quality for the benefit of everybody irrespective of their location.*"[3] Rhetoric is being backed up by action, primarily via the development of a new national broadband policy.

1. ITU Statistics Database (2013) Individuals Using the Internet [Online] Available from: http://www.itu.int/en/ITU D/Statistics/Documents/statistics/2013/Individuals_Internet_2000-2012.xls
2. Research ICT Africa (2012), Evidence for ICT Policy Action, Policy Paper 4, What is Happening in ICT in Ghana, A Supply and Demand-Side Analysis of the Sector
3. My Joy Online (2014), Africans deserve faster more reliable Internet services [Online] Available from: http://www.myjoyonline.com/news/2013/october-2nd/africans-deserve-faster-more-reliable-internet-services-omane-boamah.php?print=1. [Accessed 2nd February 2014]

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2. LOOKING BACK

The last few years have seen rapid progress…

In 2005, Ghana unveiled a National Telecoms Policy (2005 NTP). Some of its specific policy goals included achieving universal access to telephone, Internet and multimedia services by 2010; and national penetration of universal telecommunications services to reach 25% of the population, including at least 10% in rural areas by the year 2010.[4]

In many respects the growth of Ghana's ICT sector over the intervening decade has exceeded all expectations, suggesting that the implementation of the NTP 2005 has been a success. For instance, between 2005 and the end of 2012, mobile penetration grew from 13.28% to 100.28%.[5] Owing to multiple SIM card ownership (the GSMA estimates that there are about two SIM cards per subscriber in Ghana[6]), true universal telephony service is yet to be achieved. However, Ghana's policy makers can justifiably argue that, due to the liberalization and increased competition that developed under NTP 2005, universal service to telephony can be achieved in the near future.

Ghana's access to international bandwidth has also increased significantly since the start of the decade thanks to liberalization and increased competition. Between 2010 and 2013, four fiber optic submarine cables were landed in Ghana, boosting the amount of international bandwidth from 320 Gigabytes to over 12 Terabytes. The arrival of the Main One, Glo-1, WACS and ACE cables unleashed significant competition for international bandwidth and a dramatic fall in the wholesale cost of capacity. Today, the cost of an E1 connection in Ghana is around $1,200, down from as much as $12,000 in 2006.

… but many challenges remain…

The dramatic increases in international bandwidth and mobile phone penetration have not translated into widespread Internet access. Although there are some 149 licensed internet service providers (ISPs), 2012 ITU figures suggest that only 17.1% of Ghanaians use the Internet.[7] Whilst these figures mean Ghana does relatively well in comparison to many other countries in sub-Saharan Africa, when assessed alongside countries like Kenya (32%), and close neighbor Nigeria (32.88%), improvement is called for.[8]

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4. Ghana, Ministry of Communications, (2005), National Telecommunications Policy, 2005
5. ITU Statistics Database (2014) Individuals Using the Internet [Online] Available from: http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2013/Mobile_cellular_2000-2012.xls
6. GSMA, Mobile Intelligence, SIMs Per Subscriber for Ghana at the end of Q4 2012.
7. ITU Statistics Database (2013) Individuals Using the Internet [Online] Available from: http://www.itu.int/en/ITU D/Statistics/Documents/statistics/2013/Individuals_Internet_2000-2012.xls
8. Ibid

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As in much of Sub-Saharan Africa, disparities between urban and ICT ownership and usage also remain a challenge in Ghana. According to the 2010 Ghana Census, only 47.8% of Ghanaians own a mobile phone, and while 63.4% of urban dwellers own phones, only 29.6% of rural dwellers do.[9] In respect to Internet usage, the Census found that the difference between urban and rural users is even more pronounced. While 12.7% of urban dwellers used the Internet in 2010, only 2.1% of rural dwellers did.[10] From the figure below, it is clear that public points of access remain important for Ghanaians.

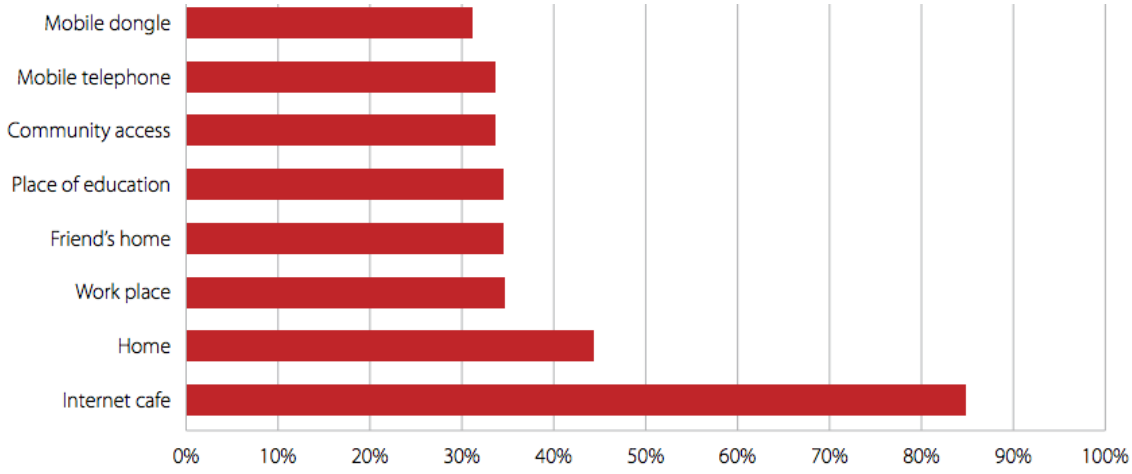

Figure Two: Place of Internet use in Ghana

Source: Research ICT Africa, 2011-12 data. Data based on multiple responses

9. Ghana, Ghana Statistical Service, (2012), 2010 Population and Housing Census, Summary Report of Final Results.
10. Ibid

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3. THE RISE OF MOBILE BROADBAND

In a similar vein to many other developing countries, the rise of mobile broadband in Ghana appears impressive. In 2012, wireless broadband penetration was said to be at 33%, up from 0.24% in 2009, giving Ghana a rank of 49 out of 146 countries.[11] However, analysis of data indicates penetration level reported by the ITU actually represents the 33% of Ghanaians that use some form of mobile data service, including mobile broadband. A4AI analysis, developed using industry data for the number of mobile broadband subscribers, suggests the actual penetration figure for mobile broadband is 9%. Despite the previous lack of clarity over penetration figures, 0% to 9% in less than three years represents significant growth of mobile broadband and bodes well for the future.

Some of this enhanced penetration can be attributed to the landing of the new submarine cables. In addition, like many operators around the world, Ghanaian mobile operators see data services such as mobile broadband as a key revenue driver and have expanded networks and increased service offerings, most notably in Ghana's most populous areas, such as Ashanti and Greater Accra.

11. ITU, (2013), The State of Broadband 2013: Universalizing Broadband

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4. SO WHAT KEY CHALLENGES LIE AHEAD?

The challenge of connecting all Ghanaians to broadband is multifaceted. Low ownership of devices such as tablets, laptops and personal computers is often cited as a barrier; the Ghana 2010 census, for example, shows that only 7.9% of households own a laptop or computer.[12] A lack of access to networks that facilitate a good, higher-speed Internet experience, such as 3G, LTE or fibre optic is also a challenge. Lack of consumer demand, owing to limited local content and a relatively small number of local users with whom to interact, are also concerns.

However, the primary stumbling block is cost. As noted earlier, a 2012 study by Research ICT Africa found that almost 60% of Ghanaians said that the high cost of access prevented them from using the Internet.

A deeper analysis of broadband services in Ghana confirms that they are relatively expensive and, therefore, remain a luxury item for many Ghanaians. According to the ITU, a prepaid 500MB mobile handset mobile broadband package in Ghana costs 9% of Gross National Income (GNI) per capita, almost double the UN's 5% target, and ranking Ghana 96 out of 126 countries. A prepaid 1GB Internet dongle package costs 11.3% of GNI per capita, which gives Ghana a rank of 90 out of 124 countries.[13] In addition, GNI per capita is often viewed as a 'quick and dirty' metric, and it is important to remember that many Ghanaians do not earn close to the official GNI per capita figure of $1,410 per annum. In fact, in 2006, 51.8% of Ghanaians lived on $2 per day or less.[14] Recent figures on those living below the poverty line are not available, and whilst the number of Ghanaians living on less that $2 per day will have fallen over the last eight years, it is certain that for many Ghanaians, Internet and broadband services remain prohibitively expensive.

Table 1: ITU Mobile broadband prepaid handset prices (500MB) as % of GNI P.C. 2012

Country	ITU Mobile broadband prepaid handset prices (500MB) (Rank)	ITU Mobile broadband prepaid handset prices (500MB) as % of GNI P.C. 2012
Austria – First	1	0.1
India	67	2.9
Colombia	85	5.8
Kenya	93	8.2
Ghana	**96**	**9**
Tanzania	98	11.3

12. Ghana, Ghana Statistical Service, (2012), 2010 Population and Housing Census, Summary Report of Final Results.
13. ITU, (2013), Measuring the Information Society Report 2013
14. World Bank, (2014), Poverty headcount ratio at $2 a day (PPP) (% of population [Online] Available from://data.worldbank.org/indicator/SI.POV.2DAY

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Nigeria	99	13
Uganda	112	23.3
Mozambique	121	65.9
S Tome & Principe – Last	126	156.5

The Alliance for Affordable Internet's 2013 Affordability Report ranks Ghana 30th out of 46 countries and provides further evidence that broadband services are too expensive for most Ghanaians. [15] Moving away from the simple assessment of cost as a percentage of GNI per capita, A4AI's affordability index ranks 46 emerging and developing countries by composite scores. These scores are calculated using scores from two sub-indices: with the first sub-index assessing infrastructure deployment and the policy and regulatory framework designed to facilitate it; and the second measuring the price and adoption of broadband and analyzing policy and regulations designed to promote access and reduce the cost of services.

Ghana's composite score of 28.4 out of a possible 100 is much higher than that of last placed Yemen's (0), yet it is less than half that of first placed Malaysia (68.6). When assessed alongside other sub-Saharan African countries in the Index, Ghana ranks 12th out of 20, with a score that is less than half that of sub-Saharan Africa's leading country Mauritius (65.5).

Table 2: Affordability Report 2013: Index Rank and Composite Score

Country	Affordability Index Overall Composite Score: Rank	Sub Index communication Infrastructure	Sub-Index Access and Affordability	Affordability Index Overall Composite Score
Malaysia – First	1	71.6	72.2	68.6
Mauritius	2	61.7	76.9	65.5
Tanzania	22	40.4	43.1	34.9
South Africa	12	41.4	63.2	46.6
Botwana	16	51	46	42.9
Kenya	18	34.2	60.1	40.7
Nigeria	19	30.7	61.2	39.3
Nambia	20	31.5	57.9	38
Uganda	21	33.4	54.8	37.3
Tanzania	22	40.4	43.1	34.9

15. Alliance for Affordable Internet (2013), Affordability Report 2013

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Senegal	24	34.3	47.3	33.7
Zambia	25	32.7	48	33.2
Ghana	**30**	**29.9**	**42.2**	**28.4**
Burkina Faso	37	20.2	41.3	22.4
Rwanda	38	38	21.5	21.6
Benin	39	21	37	20.5
Cameroon	40	21.4	30.4	17.1
Mali	42	13.9	26.2	10.5
Ethiopia	43	0	28.2	3.7
Zimbabwe	44	4.7	23.1	3.6
Malawi	45	26.2	0	3.1
Yemen - Last	46	11.3	9.7	0

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5. HOW IS THE GOVERNMENT RESPONDING?

The Ministry of Communications (MoC) is in the process of finalizing a new broadband policy in which improving affordability is a key objective. The vision in the draft policy document is *"to foster the development of a broadband ecosystem, capable of sustaining broadband infrastructure and network development that support affordable adoption by all citizens to promote economic development and enhance social equality of access to knowledge and information."*[16] The policy wants to ensure affordable access to broadband infrastructure for all Ghanaians and last mile connectivity to every home by 2020.

Importantly, in outlining how to reach these goals, the policy takes into account both supply and demand, in line with global best practices. The broad objectives are: to increase broadband infrastructure and services; create universal access for broadband; stimulate demand; and develop new regulations that facilitate more broadband access and use.

Some specific government actions to date include the following.

A. PRIORITIZING OPEN ACCESS

The government has created a national backbone network that is run by the National Communications Backbone Company (NCBC), a subsidiary of Vodafone Ghana. This network is intended to be managed on an open access basis, encouraging competition, transparent pricing, interoperability with other infrastructure, devolved local applications and solutions, and, of course, increased access to and usage of broadband.

However, questions have been raised about the effectiveness of open access to date, partly because operators have invariably chosen to develop their own fiber optic networks.

16. Ghana, Ministry of Communications, (2014), Draft National Broadband Policy

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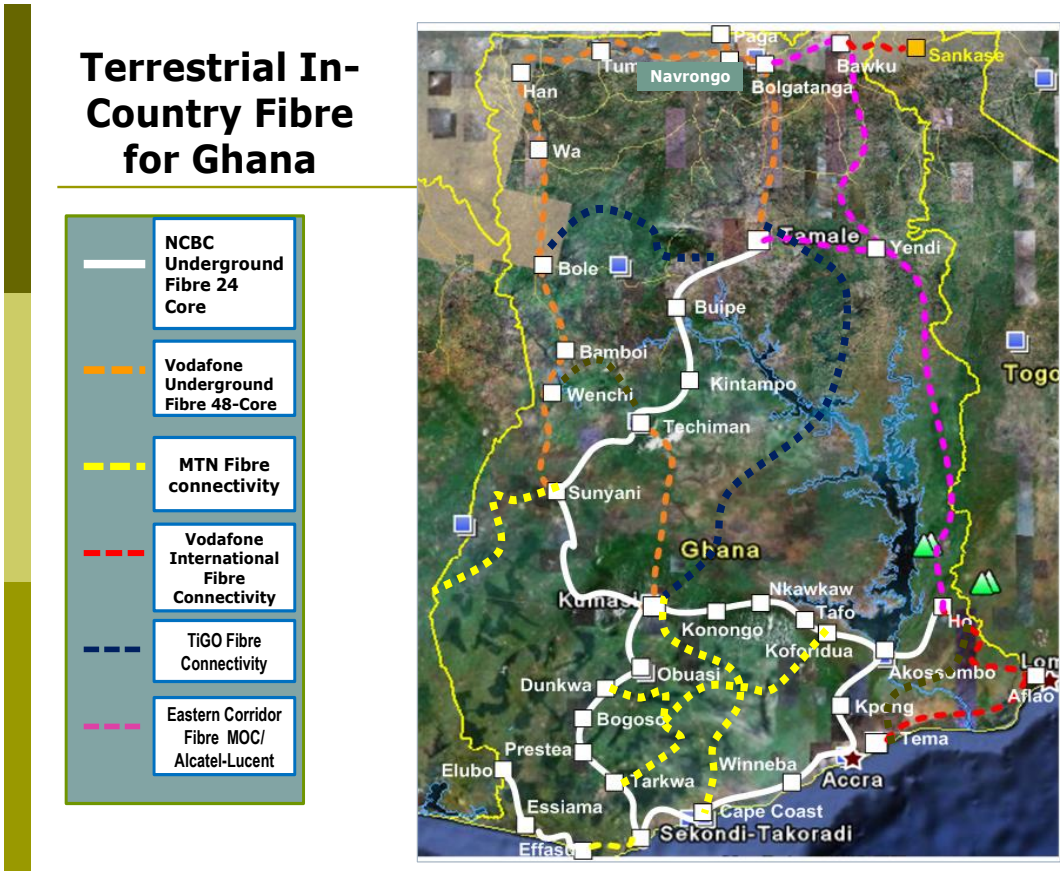

Figure Three: Map of Terrestrial Fibre in Ghana

Source: Ministry of Communications, Ghana

However, the Government has placed great faith in open access and the way in which it can help increase competition, innovation, and access, and so this trend is likely to continue. The MoC's development of the 780km Eastern Corridor fibre optic network in partnership with Alcatel-Lucent is further evidence of this faith. The MoC is encouraging Ghanaian operators to use the capacity provided by the Corridor, rather than build their own infrastructure alongside it. As well as the creation of the national backbone network, the Ghanaian regulator has created a technology neutral regulatory environment to encourage open access, designed to ensure that Ghana sees a rapid increase in broadband infrastructure and services.

The government's support for open access is also likely to go even further. During consultations for the new policy the government of Ghana has discussed making the development of more open access broadband infrastructure through public private partnerships (PPP) a central pillar of Ghana's socio-economic development. If realized, this could prove a significant boost to efforts to affordable, universal access.

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B. ENHANCING THE UNIVERSAL SERVICE FUND

In addition to developments in infrastructure, Ghana has recently witnessed some institutional developments that should enhance broadband development. One of the most important is the creation of the 'Ghana Investment Fund for Electronic Communications (GIFEC)' – Ghana's Universal Service Fund (USF). This fund's new strategic plan contains initiatives directly targeted at increasing broadband access and affordability. Over the next five years, GIFEC plans to support the roll-out of the National Backbone, enhance efforts to ensure each town or village with 2,000 inhabitants or more has broadband connectivity, contribute to connecting all public institutions, and continue the implementation of its community information centers across Ghana so they can provide shared access to broadband.

Alongside the supply-side programs, GIFEC will also bolster Government efforts aimed at stimulating demand for services. Support will be given to developers of local content and applications to ensure that users find the Internet more relevant and useful. The fund will also implement projects that will provide qualifying institutions, households and individuals with ICT devices so that they may go online.

C. REVIEW TAXATION ON ICT

Ghana's burden of taxation on the total cost of mobile phone ownership in Ghana is more than 22%. This is in stark contrast to close neighbor Nigeria where only 5.4% of the total cost of mobile ownership is represented by tax.[17] The draft broadband policy states that review of ICT taxation is a key objective of government. Once a thorough review is done, it may result in a more efficient tax regime and, as witnessed in other countries, encourage greater use of ICT services, including broadband.

D. IMPROVE SPECTRUM EFFICIENCY AND POLICY

The Government of Ghana understands that the effective use of spectrum, one of Ghana's scarce and finite economic resources, is vital for broadband expansion. The draft of the new broadband policy highlights the Government's intention to use Ghana's spectrum more efficiently. It intends *"to remove entry barriers to efficient and productive spectrum use and facilitate the allocation of the appropriate spectrum to significantly alter the business case for wireless broadband".*[18]

Achieving the more efficient use of spectrum will require the Government of Ghana to take a critical look at all current and future uses of spectrum, including its own. The draft broadband policy indicates that the State is ready to do this. As part of a spectrum re-farming exercise that will involve the reallocation of currently un-used spectrum, the Government will also consider its role as both a supplier and user of spectrum so that any risks to Ghana's increased broadband usage posed by its use of spectrum do not materialize.

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17. GSMA (2011), Global Mobile Tax Review 2011

18 Ghana, Ministry of Communications, (2014), Draft National Broadband Policy

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6. THE ROLE OF THE PRIVATE SECTOR

An important recent development in the private sector has been the establishment of Ghana's Telecoms Chamber in 2010 – its membership comprises almost all of Ghana's mobile operators (Glo has not joined), and the Chamber aims to speak with a unified voice for the sector. In its short existence, the Chamber's ability to balance and articulate the views of Ghana's mobile operators has led to some notable successes that have reduced costs for operators and benefitted consumers.

A recent example is the development of pricing guidelines for the erection of mobile towers and masts. Issued by the Ministry of Local Government and Rural Development, the guidelines mean that Ghana's Metropolitan, Municipal and Districts Assemblies (MMDA) have charged set fees since the start of 2013. These set fees, which may increase by up to 10% per year, will enhance the roll out of infrastructure by making operators' capital expenditure in Ghana more predictable. Prior to the introduction of the guidelines, the MMDA's charged various fees, which created uncertainty and undermined investment in infrastructure.

Ghana's private sector has already made considerable investment in broadband infrastructure, but the Government's recent actions present further opportunities and call for the private sector to play a significant role, both individually and through industry organizations such as the Chamber.

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7. CONCLUSIONS

Ghana has made rapid strides in recent years, but penetration rates remain relatively low, and prices remain too high for the average Ghanaian. Much hangs on the successful implementation of the new broadband policy.

Key questions in the coming months and years include:

- Will the open access model be adopted and drive prices down? And if so, how, with what characteristics, and under what assumptions and conditions in place to ensure success?
- Will policy and regulation successfully guide and incentivize infrastructure sharing?
- Can the Government and private sector work more effectively via Ghana's USF to create sustainable impact?
- What measures will the Government take to ensure efficient and timely allocation of spectrum, especially for mobile broadband?
- Will demand-stimulation programs be effective in attracting Ghanaians online to ensure the true socio-economic benefit of Internet use is realized?
- Will Ghana be able to develop a more "pro-broadband" tax regime that encourages greater investment by the private sector, increased access and more usage?
- How might Ghana enhance its data collection and sharing practices to ensure that sector developments are effectively recorded, interpreted, understood, shared and used to make evidence-based policy and regulatory decisions?

Many will be watching Ghana in the months and years ahead, hoping to learn lessons that can be applied across the world.

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ABOUT THE ALLIANCE FOR AFFORDABLE INTERNET

Launched in October 2013, the Alliance for Affordable Internet (A4AI - www.a4ai.org) is a global coalition committed to driving down the cost of internet access in less developed countries.

A4AI focuses on creating the conditions for open, efficient and competitive broadband markets via policy and regulatory reform. Through a combination of advocacy, research and knowledge-sharing, the Alliance aims to facilitate the achievement of the UN Broadband Commission target of entry-level broadband services priced at less than 5% of average monthly income. In doing so, A4AI will help to connect the two-thirds of people in developing countries who currently cannot access the internet.

A4AI's 55+ members and local partners are drawn from both developed and less developed countries and include public, private and not-for-profit organizations. The World Wide Web Foundation, founded by Web inventor Sir Tim Berners-Lee, initiated the Alliance. Members include Google, Omidyar Networks, USAID and the UK DFID. Ghana is a member of the Alliance, and in February 2014, A4AI held a multi-stakeholder forum in Accra that drew together key decision-makers in the sector to discuss issues openly and hammer out a plan to drive down the cost of broadband in Ghana.

For more information, visit: www.a4ai.org.