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Global agenda and ICT4D in Africa: Constraints of localizing 'universal norm'

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ABSTRACT

In 1996, as part of the global ICT for development phenomenon, the Africa Information Society Initiative (AISI) was launched as the action framework for the building of ICT infrastructure in Africa. Its goals included the digital connection of every African village to the global information network by the year 2010, and the leapfrogging of Africa's development through ICTs. Over a decade after the enactment of the AISI, many villages are still without electricity, and lack access to Internet services and other core ICTs. Based on the data gathered from qualitative semi-structured interviews and secondary sources, this paper analyzes the challenges and obstacles that have confronted the AISI implementation and ICT4D agenda in Africa. It examines the implication of these challenges and potential ways of addressing them.

1. Introduction

More than ever, the multilateral trade agreements and consensus reached at the meetings of international organizations such as World Trade Organization (WTO) and International Telecommunication Union (ITU) are shaping nation-states' communication policy agendas and development priorities. Examples of these influential international agreements include the 1997 WTO Basic Telecommunications Agreement, and General Agreement on Trade in Services (GATS). At the regional level, this emerging order became more apparent in the African context with the 1996 United Nations Economic Commission for Africa (UNECA) sponsored "Africa Information Society Initiative (AISI): An action framework to build information and communication technologies (ICTs) infrastructure in Africa." The AISI, which African ministers of economic planning and social development endorsed at the UNECA's Conference for African Ministers in Addis Ababa in May 1996, is the primary framework upon which the current ICT activities and policies in Africa are based on.

As the African regional framework for the ICT for development (ICT4D) agenda, the AISI's primary objectives were to foster digital connectivity and to create "a sustainable information society" by the year 2010 (UNECA, 1996/2003). That is, a sustainable information society in Africa where:

Every man and woman, school child, village, government office and business can access information and knowledge resources through computers and telecommunications;

Access is available to international, regional and national "information highways," providing "off-ramps" in the villages and in the information area catering specifically to grass-roots society;

A vibrant business sector that exhibits strong leadership capable of forging the build-up of the information society;

African information resources reflect the needs of government, business, culture, education, tourism, energy, health, transport and natural resource management;

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Table 1
ICT Penetration rates per 100 inhabitants in Africa and other regions in 2014.

Regions	Fixed telephone	Mobile phone	Internet usage	Mobile broadband	Wired/Fixed broadband
Africa	1.3	69.3	19.0	19.0	0.4
Arab States	8.7	109.9	40.6	24.6	3.1
Asia & Pacific	12.7	89.2	32.4	22.8	7.7
Europe	39.2	124.7	74.9	63.8	27.7
Americas	26.3	108.5	65.5	59.1	16.7

Source: ITU World Telecommunication/ICT Indicators Database (2014).

Information and knowledge are disseminated and used by business, the public at large and disenfranchised groups, such as women and the poor, enabling them to make rational choices in matters related to the economy (free markets) (UNECA's AISI document, par.18. Emphasis added).

However, while there is a marginal improvement in the diffusion and usage of ICTs between 1996 and 2014, "Africa [still] remains the deepest part of the global digital divide" (Hafkin, 2001, p. 326) as it was in 1990s when the AISI was initiated. Many villages across the continent are still without electricity, telephone and Internet services, in spite of the AISI's strategic goals to get every African village connected by 2010 (Foster & Briceño-Garmendia, 2010). Only about 10 percent of the rural areas in the sub-Saharan African region have electricity and less than 7 percent of them have mobile service coverage (ITU, 2008). Over 80 percent of the African population is not wired to the Internet (African Development Bank, 2013). Overall, the continent lags behind the rest of the world in ICT penetration rates. Table 1 shows the statistical comparison of ICT penetration rates between Africa and other regions of the world.

Why is there a huge gap between the AISI vision and the "reality" on the ground? Within the conceptual framework of Amartya Sen's capability approach, this paper assesses the challenges and obstacles that confronted the socio-political buy-in of the AISI and ICT4D agenda in Africa.

2. Contextual background: ICT4D agenda, policy transfer and AISI

Policy transfer refers to the diffusion of administrative arrangement, policy programs and ideas from one geo-political setting to another geo-political setting for appropriation or adoption (Dolowitz & Marsh, 2000; Stone, 2012). It is a process that typically unfolds within the context of international laws or international development aid such as "the communication for development programs of the United Nations and its specialized agencies" (Eko, 2012, p.42). The underlying principle is that it would "jump-start the wider process of social change and leapfrog over long-standing social and cultural obstacles" (Nelken, 2003, p. 455). This was the case with the AISI, which was formulated by a team of international experts and international donor organizations under the auspice of the UNECA, as part of the international agenda to build the Global Information Infrastructure (GII). The GII, which then US Vice-President, Albert Gore, proposed at the first ITU's World Telecommunication Development Conference (WTDC) in 1994, was touted as a transnational communication system that would revolutionize human relations and global economies (Chakravartty & Sarikakis, 2006; Raboy, 1999).

Initiated within the broader framework of the global ICT4D agenda to address Africa's comparative disadvantages in the global economy, the AISI enunciated a techno-deterministic promise of social, economic and political benefits for Africa if it was integrated into the global digital information economy. As expressed in the AISI plan document, "the global movement to an information age and the world-wide technological innovations … present a clear window" for Africa to adopt appropriate "leapfrog strategies" to accelerate its development goals. These development goals are: "improvement of the quality of life for every African; economic integration of the region; and, improved trade and other linkages with the global community" (UNECA, 1996, 2003, article 6). In other words, it spawned a belief in a new global "digital Jerusalem" (Sardar, 1999), and privileged appropriation of ICTs as the solution to the continent's woes of development and underdevelopment. This is a re-articulation of the modernization paradigm of mass media for development of 1960s and 1970s in the ICT4D policy discourse (Ojo, 2004; Schech, 2002; Shade, 2003).

However, unlike the proponents of the modernization paradigm and mass media for development, the AISI's initiators-cum-authors (UNECA and its team of international experts and donors) did not view African traditional belief systems and cultural norms as barriers to modernity, social-economic development and innovative growth (Kraidy & Murphy, 2008; Ojo, 2004). In other words, the conceptualization of ICT4D has been limited to a socio-economic dimension and did not include "psychological reconditioning of people's daily lives," as conceptualized by modernization theorists (Lerner, 1958; Schramm, 1964) and endorsed by several international development agencies in the 1960s (Singh, 2003, p. 190). Rather, the contemporary ICT4D discourse constructed Africa's social space as a subset of the new global information economy. By this construct, the continent's progress and engagement in international trade transactions and geopolitical relations are dependent on the development of a communication network infrastructure for the new global information economy.

This 'new' construct of the African local space fits well with the descriptions and perspectives of the neo-modernization school of thought, which is also known as neoliberalism. It is a school of thought that became popular in the 1980s, following the massive criticisms of the modernization paradigm in the scholarly literature on international development

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praxis. While the neoliberal school of thought recognizes and revises certain assumptions of the modernization paradigm, it still "retains some key ideas and concepts about the development process from the modernization school, such as a focus on nations and the view that modernization is generally beneficial" (Braman, Shah, & Fair, 2000, p. 172 cf.; So, 1990, p. 60–87). Like the modernization paradigm, it excludes "much of the variability of Third World social formations" (Brohman, 1995, p. 126).

Central to the theoretical proposition of neoliberalism is the assumption that sound market principles will guide the regulating activities, and unlock creative innovation for socio-economic transformation. Hence, in the ICT4D agenda, which is underwritten by neoliberal principles, development is equated with the building of network infrastructure and market capitalization. This is conscientiously emphasized in several global programs (such as the World Bank's Global Development Gateway and the US's Leland Initiative), action plans (such as WSIS and DOT Force), and regional frameworks (Chakravartty et al., 2006; Shade, 2003; Robins, 2002). As explicitly articulated in the AISI's document:

> The role of government is to provide a vision, a strategy and an enabling environment to develop national information and communication infrastructure and to ensure that all sectors of society can benefit from it. …. To facilitate the implementation of the AISI, African governments will need to ensure the establishment of adequate communication infrastructure through encouraging the liberalization of national telecommunication and public broadcasting services. This can be accomplished by providing enabling legislation and incentives for private sector collaboration in the development of this infrastructure, as well as by setting up a strong, independent body to regulate public/private sector partnerships, with involvement of the international private sector (UNECA, 1996, 2003, Articles 47 & 49).

Hence, the key strategic areas of focus for ICT-based efforts have been the creation of favourable market conditions for the importation and exportation of ICT goods, building of network infrastructure, telecentres and government service-delivery platforms. While the emphasis of critical network infrastructures for socio-economic development is valid, vital questions – 'Development for whom and who will gain or lose?' – were left unanswered in these programs, action plans and policy documents.

Previous African communication studies have examined technological transfer, telecommunication reforms, gender and access to digital media, and the proliferation of ICTs and mobile phones within the continent (Alzouma, 2005; Gillwald, Milek, & Stork, 2010; Jensen, 1999; Mercer, 2006; Ojo, 2013; Robins, 2002; Sonaike, 2004; Steeves & Kwami, 2012). However, international institutions and their coordination of ICT policy initiatives in Africa is still an under-researched area in the literature, in spite of international institutions' continuing claims of achieving new "mechanisms of governance at the local, national, [regional], and global scale" (Navarra & Cornford, 2009, p. 35). This study fills this gap by interrogating the disjuncture between the global agenda and the local 'polity' in Africa.

3. Conceptual frameworks

Amartya Sen's capability approach posits development as the freedom of choice. It offers a grounding theoretical understanding of human capabilities and development in the larger context of development practices and policy debates. Influenced by the Aristotelian notion of 'flourishing' as the basis of good human life, and Kantian notion of dignity and autonomy, it rests on two interrelated elements – *functionings* and *capabilities* – that are defined as follows:

> A functioning is an achievement, whereas a capability is the ability to achieve. *Functionings* are, in a sense, more directly related to living conditions, since they are different aspects of living conditions. *Capabilities*, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead (Sen, 1987, p. 36).

Inherent in this approach is the expression and demonstration of people's intrinsic freedom, productive capability and communication rights for the humanization of their communities. It sees positive synergistic relationships among human wellbeing, socio-cultural institutions and material production in national development strategies (Castells & Himanen, 2014; Kleine, 2013).

In this context, the development process involves people having the space and choices within the socio-cultural structure for the existence of *relations* such as trust and dialogue, which serves as the bridge between an individual's self-values and larger collective consciousness. While ICTs can be integrated into the larger context of social change and the development process, it is a *means* in the process not an *end*. Human initiative and creativity (both individual and collective) are the pivots on which the development process and practice must hang on. This means releasing human energies and providing an opportunity for people "to make the maximum contribution to their own development and to the self-sustaining development of their communities" (Draper, 1989, p. 9). To this end, ICTs and its artefacts will be *things to think with* and *work with*, and not necessarily *things that work magic*.

From this perspective, ICT4D should neither be about availability of information in abundance, nor about exposure to new technologies and acquisition of new technologies. It should be about how people make use of available information and technological resources to develop their own capabilities and improve their livelihood. Thus, the end goal of any ICT4D policy initiative or program should be about improving people's quality of life without depriving them (people) of their basic human rights and cultural values (Asante, 1991; Evans, 2002; Ojo, 2013; Sen, 1999). In view of this, why is there a huge gap

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between the AISI vision and the "reality" on the ground? What are constraints that hampered the AISI and ICT4D policy implementation in African nation-states?

4. Methods

For this study, the data were drawn from semi-structured interviews with people that were either involved in the AISI formulation or/and in the AISI implementation process, and ICT4D projects in Africa. A total of 28 interviews were conducted and the interviewees represented a wide range of groups – international organizations, national government, civil society, academia, and members of the High-Level Working Group that drafted the AISI. These interviews provided contextual account of the complexity of the policy process and the coordination of the AISI. In other words, the interviews provided a contextual understanding of power relations, rituals, practices, values and routines of the institutions and people involved in the implementation of the AISI and ICT4D agenda in Africa. In addition to the data and information gathered through the interviews, secondary sources of data were also consulted for statistical information and program activities. These secondary sources included the AISI document, UNECA's program documents for ICTs, the ITU's *African Green Paper: Telecommunication Policies for Africa*, and National Information and Communication Infrastructure (NICI) Plans of several African countries.

Data analysis was guided by the epistemological purpose of the qualitative case study research and qualitative interview analytical protocols, as conceptualized in Alexiadou (2001), Crouch and McKenzie (2006), Noor (2008) and Yin (1994). In this regard, the interview transcripts were used to identify the recurrent themes as well as temporal and causal linkages among them. Based on the 'axial coding' of Strauss and Corbin (1998), the similar reoccurring claims and themes, which captured the contextual realities and the differences between what the AISI envisioned, were grouped together for inductive analysis. The categories of recurrent themes and sub-themes that emerged from this process captured the subtleties in experience as well as the comprehensive picture of the collective understanding of the institutional challenges and constraints of localizing the global ICT4D agenda through the AISI framework. The categories of themes that emerged from the data are thus: Limited Expertise, Political Bureaucracy and Policy Inertia; Financial Constraints and Uneven Distribution of Resources; and AISI's Top Down Approach and a "One Size Fits All" model.

5. Findings

Broadly, there is a consensus among the interviewees that socio-political and institutional factors were primary impediments to the ICT4D policy implementation and the AISI. Specifically, 75 percent of the interviewees identified political bureaucracy and policy inertia as the major constraint that confronted the AISI and ICT4D policy implementation. Approximately 64.3 percent of them mentioned limited expertise within the national space as another barrier. While financial constraints and uneven distribution of resources were mentioned by 39.3 percent of the interviewees, one-quarter of them noted that AISI's top down approach and a "one size fits all" model also contributed to policy inertia and non-implementation of the NICI plans.

Another key factor that almost 40 percent of the interviewees identified is the waning interest in the AISI. This waning interest is due to the emergence of other 'competitive' initiatives with more political clout in terms of multilateral and bilateral financial assistance. These new initiatives include the millennium development goal (MDG)[1] and the African Regional Action Plan on the Knowledge Economy (ARAPKE). As Ben Fouche, who was a member of the UNECA's High Level Working Group of Experts that crafted the AISI, noted:

> I do not think that the AISI document is still very influential as it was published ten years ago. The present generation of politicians and government officials do not seem to be aware of the AISI as such. This statement is based on my limited current contact and involvement with African political leaders and government officials. *However, although the terminology might be a bit different, the ideas and convictions are still evident* (Fouche, 2008: personal communication).

Moses Bayingana, former Rwanda NICI program coordinator and now African Union Commission ICT policy & management expert was emphatic in his response:

> At the moment, ICT activities on the continent are guided by the ARAPKE as endorsed by the African Union (AU) Conference of Ministers in charge of Communication and Information Technologies (CITMC[2]) and by major decisions taken by different summits of the AU assembly and the executive council (personal communication, 2009).

[1] In 2002, UN held a conference on Financing for Development and MDG where international "donors promised to increase their aid contributions from an average of 0.25 percent of their GNP to 0.7 percent, in the belief that this additional US$200 billion annually would finally address Africa's continuing problems" (Moyo, 2009, p. 46). ICTs are considered to be an integral part of these action-plans. Recalculations of the implementation plans in 2005 have also led to the promise of an additional aid boost of US$130 billion a year.

[2] CITMC is the AU's specialized technical committee that promotes the development of information communication technology policies and programs in Africa. They meet once every two years.

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Funded largely by the European Commission, which made a financial commitment of almost $US 10 millions towards the first phase of the implementation process from 2007 to 2013, ARAPKE is under the coordination of the AU. While it touched on new emerging issues such as Internet governance, gender equality and African language in the cyberspace, a critical look at the ARAPKE document shows that it is still primarily a regurgitation of prescriptions and action plans of the New Partnership for Africa's Development (NEPAD), World Summit on Information Society (WSIS), MDG and the AISI.

5.1. Limited expertise, political bureaucracy and policy inertia

Although the African governments endorsed the AISI as the regional framework for ICT4D in both the African Union (AU) Assembly and the UNECA Conference of Ministers, respectively, many of them could not visualize what the AISI and its reciprocal national ICT strategies were meant to accomplish. This is partly due to the limited policy expertise within the respective national agencies tasked with the implementation process. As recounted from her experience with some of the national governments, interviewee, Tina James, independent media and ICT consultant who previously served on the ICT working group for South Africa's Foresight Initiative and the AISI Technical Advisory Committee, noted:

> Many of the ministers and their advisers don't even know how to use computers. They still do things in the old ways, and see ICTs solely from the prism of telecoms. Their secretaries and assistants are the ones checking e-mails for them and replying. If they don't use ICT resources, how can they address the problem or adopt the same resources as tools within their development plans? At times, they think dumping computers in schools are what ICTs for development is all about. No! Without resources in terms of human development, training, content and education, these are useless.

Interviewee, Ernest Ndukwe, the Nigerian Communication Commission (NCC[3])'s Chief Executive Officer from 2000 to 2010, highlighted some other challenges, thusly:

> Using the example of the telecommunications component of the national ICT policy, some of the key challenges faced in the implementation include poor regional collaboration, lack of skilled manpower, poor national infrastructure such as roads and power; high levels of illiteracy, and the multiplicity of agencies dealing with the same matters.

Several of these identified challenges were part of broader systemic problems in governance and implementation of many ICT4D initiatives across the continent, Southern European countries and Latin America, as affirmed in Boucas (2008), Christensen (2006), Kleine (2013) and Van Audenhove, Burgelman, Nulens, and Cammaerts (2001). However, in the African context, the situation is exacerbated by the absence of strong networks of non-partisan policy advocacy think tanks and independent communication regulatory bodies in many countries that are needed to provide critical expertise and technocratic legitimacy to the ICT policy and implementation initiatives. This is particularly the case due to the lack of trust and shared political values between the civil society groups and the state governments, as a result of factors such as neopatrimonialism and centralization of political power in presidential offices in many African countries (Thomson, 2011).

Against this background, there is absence of political will and commitment to the national ICT4D agenda and policy initiatives. In few countries such as Kenya, Nigeria, Rwanda, Ghana and Namibia where there are pragmatic political commitments from the presidential offices, the complex political bureaucracy and organizational structures that were set up for the ICT4D agenda have also become a barrier to the implementation processes. As an example, Namibia, under the guidance of UNECA, developed its national information and communication infrastructure (NICI) plans. Subsequently, the NICI plans were incorporated into the country's "Vision 2030" national development agenda plan. The Vision 2030, which aims to transform Namibia to a prosperous and industrialized country in 2030, covers multiple areas of development processes such as institutional and human capacity building, and national economic development. But, the institutional structure for implementing the NICI plans within the framework of Vision 2030 was mired in complex internal bureaucratic politics and lack of institutional capacity exhibited by the government agencies and departments that were given the lead roles in the implementation plans. In the absence of a clear mandate and defined responsibilities, however, these departments and agencies engaged in territorial warfare among themselves, instead of working out coordinated implementation strategies. The Namibian example is not an isolated case. It is a common experience in many other African countries.

In general terms, the implementation of ICT4D policies across the continent has suffered partially from the limited expertise, political bureaucracy and absence of coordinated implementation strategies. As a result, the ICT4D agenda is still largely political rhetoric rather than action-oriented initiatives in many African countries, more than a decade after the AISI was initiated as the continent-wide framework. Overall, the constraints of limited expertise, political bureaucracy and policy inertness also underscore the problematic nature of the international donor-driven ICT initiative and policy transfer because the importance of the local context, institutional capacities, and domestic politics in the design and implementation process of ICT4D were underestimated.

5.2. Financial constraints & uneven distribution of resources

Financial constraint was another major impediment to the implementation of ICT policies and rollout of ICT network infrastructures across the continent. Based on the 2010 estimated cost from the World Bank, an average of US$93 billion per

[3] NCC is the government agency that is responsible for the regulatory frameworks of the Nigerian telecommunication industry.

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year over the next 10 years is needed to partly reduce the continent's infrastructural gap in telecommunication and other related areas of national economies (Foster & Briceño-Garmendia, 2010). It is a Herculean task because many African countries are operating at a fiscal deficit. From publicly available data on public finance (combination of actual, estimated and projected) of African countries in the recent fiscal years (from 2012 to 2014), only Comoros, Congo and Seychelles consistently maintained an overall positive balance throughout the three years period. Against these fiscal realities, international development agencies, donors and private entrepreneurs are spearheading several ICT-related development projects and initiatives across the continent. While these provide some financial relief and leeway to governments in many instances, the mode of intervention is predominately market-oriented in nature which is problematic in several ways.

First, most initiatives are supply rather than demand-driven and often pilot-projects. Once the donor funding ran out, a number of these pilot projects were unsustainable. This is the case because the policy intervention and donor-initiated ICT projects are strong on access, but weak in situating the intervention and projects within the long-term integrative approach of national development agenda. As interviewee, Margaret Zunguze, founder and executive director for E-Knowledge for Women in Southern African (EKOWISA), characterized it:

> Dumping of technology in communities with very little attention to servicing and maintenance of the technology. No training of a critical member of communities to ensure maximum utilisation of the technology. Failure to encourage the development of local content so [that] ICT use is culturally relevant and practical.

In this regards, several of the international donor-finance ICT projects under the $US 10 million UN-wide scheme of 'Harnessing Information Technology for Development in Africa' have been abandoned or have become "white elephant projects" in many localities (Hahn & Kibora, 2008).

Another problematic dimension of international donors and corporate-led interventions is the perpetuation of the existing 'digital divide,' in particular with the private sector' mode of market intervention. Interviewee, Dorothy Gordon, Director- General of Advanced Information and Technology Institute – Kofi Annan Centre of Excellence in Accra, Ghana, observed: "private sector only gets involved when there is big market for them to make profits from their investments. For African countries with smaller populations, they often don't get involved because the market is not big enough for them to recover profits from their investments," (Gordon, 2009, personal communication). In the West African region, Nigeria has been the biggest beneficiary of foreign direct investments (FDI) in telecommunication and ICTs in the region because of its large population and deeper market base. In 2013, the FDIs in the Nigerian telecommunication and ICT markets were over $US 24 billion; this is more than a 50 percent investment growth since 2000. In the Southern African region, South Africa attracts most of the FDI in the region at the expense of landlocked countries such as Zambia. This is the difficult trade-off of public and private partnerships (PPP), especially when the market principle of demand and supply is a primary determinant of PPP projects. Such a mode of ICT4D intervention not only strengthens the spatial economic inequality among countries, it is also creates imbalance in geographical locations of ICT services and resources inside countries as well.

For instance, in Nigeria, the vast majority of ICT service providers are located in Abuja, the nation's capital city, and economic hubs such as Lagos and Port Harcourt at the expense of other non-economic vibrant and rural areas in the country (Adesina, 2006; GSMA Intelligence, 2014; Ojo, 2005; Sonaike, 2004). Also, most of the country's fibre optic backbone infrastructures are "concentrated in state capitals and a few urban centres" (Federal Ministry of Communication Technology, 2013, p. 42). Consequently, ICT penetration is much lower in the non-urban metropolitan areas where approximately 52 percent of the country's 170 million inhabitants live. Table 2 shows the penetration rate of core ICTs in both rural and urban areas of Nigeria.

In recognition of the enclave digital economy that the uneven distribution of ICT resources creates within the country, the Nigerian government introduced the universal service provision fund (USPF). The licensed telecommunication companies in the country are obliged to pay 2.5 percent of net operation revenue into the fund. The generated funds, in addition to the subvention from the federal government, are then used to extend access and service to the unconnected rural areas. Since the USPF became operational in 2006, over $US 200 million has been generated, and is being dispersed to rural network projects. So far, the impact on the expansion of access and service is extremely minimal because several of the projects are still on-going, according to the released 2012 assessment report by the government-appointed management board for the fund (USPF Nigeria, 2012). However, experiences in South Africa, Ivory Coast and Uganda, where a similar model of financing mechanism for infrastructural development has been implemented, have had a minimal success rate due

Table 2
Percentage of population with access to ICTs in rural and urban areas of Nigeria.

	Urban	Rural	Overall (Nigeria)
Internet	14.5	3.0	7.4
Personal computer	14.4	4.3	8.1
Mobile phone	91.5	77.7	83.0
Television	88.1	44.0	60.9
Radio	92.2	87.3	89.1
Broadband	N/A	N/A	6.1

Source: Federal Ministry of Communication Technology (2012) and Nigeria's National Bureau of Statistics (2012/2013).

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to political bureaucracy and absence of operational independence of the government established agencies that are tasked to administer the fund for the expansion of ICT access and service (Calandro & Moyo, 2010; Iftikhar, 2015).

In a nutshell, in spite of the growing popularity and adoption of the universal access/service fund financing mechanism since the 2003 World Summit on Information Society (WSIS) in Tunisia, the challenges of ICT connectivity and problem of a stable electricity supply to power ICTs in many African rural areas are still unresolved. But, the consensus from the study's interviewees that the problem of connectivity in the rural areas can be resolved when there are public interest backed regulatory frameworks in national contexts. Interviewee, Gaston Zongo, former ICT policy adviser for the civil society group, Panos Institute West Africa, summed it up this way:

> Well, in the developed world, the battle is trying to ensure broadband connectivity everywhere, let it be through ADSL, cable or wireless. In Africa, though narrow band mobile communication is reaching more and more villages, Internet access reminds a yet-to-be realized dream. Common justifications for the failure cite the lack of electricity, illiteracy and poor revenue of the rural populations. But the reason may be mainly an irrelevant policy and strategies combined with a lack of true political will. Recent trends in technology evolution are making easier and cheaper to connect remote villages (e. g: VoIP, WiMax). But a suitable policy and an enabling environment are required to make this happen.

Hence, conscious planning and evidence-driven policy interventions are needed to address the growing disparity of diffusion of ICTs within national geographical boundaries of nation-states.

5.3. *AISI's "One Size fits All" approach*

Though the UNECA and sub-regional bodies' efforts are complementary to the ICT4D initiatives in African contexts, the top-down approach of advancing an ICT4D agenda and the accompanying policy frameworks were considered to be further key constraints to the ICT4D agenda in the African context. The AISI, as the regional framework for ICTs activities in development, did not emerge from participatory analysis of African ICT, media and policy environments. Rather its formulation occurred through the UNECA, which followed a top-down approach in leadership and consultation. At the national level, the UNECA consulted with the government officials and consultants. "But the problem is that the government officials and consultants do not encompass the totality of a society. They are only a segment of the society and a fraction of many stakeholders in the ICTs for development process," (Akoh, personal communication). Similarly, as another interviewee also noted:

> The ICT policy as it is being designed (and implemented whenever and wherever) here and there does not result from an insightful analysis of the African ICT sector per se, but is driven by the global trend impulse by the WTO agreements on trade and services as concluded back in 1997–1998 (Zongo, personal communication)

Consequently, the AISI underestimates the challenges and problems each African country faces with its standardized prescriptions and deliverable target date of 2010 for the continent's integration into the global digital economy.

Specifically, the proposition that every village in a continent would be digitally wired and connected within a 14-year time span (from 1996 to 2010) is "hyper-utopia." The prescription ignores the political and economic diversities of the continent where several countries have had their national and human development stunted by internal political violence and civil wars. In this respect, the multi-faceted socio-economic and political problems of the continent's 54 countries were lumped together and systematically reduced to a singular 'engineering problem' that needed a 'quick technological fix.'

In the AISI blueprint document, the industrial research and development (R&D) activities, which are essential building blocks for technological innovation and ICT capability building, were not included or proposed as an integral aspect of the policy prescriptions and reforms to be undertaken. In the 16 times that the word "research" appeared either alone or in conjunction with "development," "centres," "laboratories," or "organizations," in the 28-page AISI document, the reference was primarily referring to the provision of access and diffusion of information. The fact that none of the current 54 African countries has leapfrogged its development through the ICT4D agenda is illustrative of this.[4]

6. Discussion

Behind the institutional and socio-economic barriers that confronted the AISI implementation are the political realities that diverged from the unrealistic expectations of development leapfrogging through the national ICT4D plans. Although the

[4] As it was the case in 1996 when the AISI was initiated and the ICT4D agenda became an important policy discourse in many African countries' national development plans, none of the 54 African countries is in the top rank of the United Nations Development Program (UNDP)'s 2014 human development index (HDI). With the exception of Ghana, Equatorial Guinea, Sao Tome and Principe, and Zambia that moved slightly up to the next bracket of the medium human development class, all the African countries with low HDI in 1996 are still the same ones in the 2014 ranking. This is the paradox of African development initiatives, and international development assistance, which has gulped over $US 2.3 trillion over the past 50 years (Easterly & Pfutze, 2008; Easterly, 2006). Based on the collated figures by the Organization for Economic Cooperation and Development (OECD), $US 137.2 billion was spent on development assistance in 2014 (Elliott, 2016).

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economic globalization and market power of multinational corporations pose significant challenges to the economic autonomy of nation-states at some levels, nation-states are still considered the primary decision-makers within their respective geographical boundaries (Flew & Waisbord, 2015; Krasner, 2001). Therefore, amidst the dominant forces of globalization and pressure from the international donors for conformity to the international norms, nation-states have not fully lost their territorial power of sovereignty. To this end, nation-states cannot be coerced to act or implement the AISI against their national interests. More so, the fact that the AISI is a non-binding regional agreement means that there is no bilateral or multilateral sanction for the nation-states' non-action on the national ICT plans. In addition, the international donor-driven ICT policy interventions are not sufficient to achieve the goals for ICT4D in Africa.

In the same vein, for many African political leaders, the monetary investments in ICTs and network infrastructures have no immediate political rewards in comparison to pressing needs and concerns such as food and housing for the masses. Based on political calculation, the benefits of compliance with the global ICT4D agenda does not exceed the cost of non-compliance. Thus, there is no political urgency to allocate necessary institutional and financial resources to ICT4D plans. Though the UNECA, as the regional promoter of the AISI, forged collaborative capacity-building arrangements with the sub-regional economic groups to nudge political leaders into policy actions through sub-regional multilateral cooperation, context-specific capabilities are needed in the process and structure of the local ICT strategies for sustainable development. This means a structural transformation from a technology-centric focus to policy learning engagement where behaviour and decision-making processes encompass wider societal mechanisms such as the development of human skills through education.

Domestic institutions and a multiplicity of societal actors such as governments, civil society, innovators and social entrepreneurs mediate the degree and relevance of ICT4D initiatives, as evident in the case of M-Pesa and *Ushahidi* in Kenya. The M-Pesa is a mobile phone money transfer network in Kenya, while *Ushahidi* is a crowd-sourcing technology and internet-mapping tool. Invented in Kenya, during the violence that followed the country's 2007 presidential election, *Ushahidi*, Swahili word for "witness", allows for fast real-time reporting violence. Since its invention, it has proved efficient and effective in saving human lives in the humanitarian crises such as the 2010 earthquake in Haiti. M-Pesa expanded the freedoms of choice and social opportunities for an average Kenyan and other East Africans in conducting business transactions and developing communal networks of business entrepreneurs. As a result of M-Pesa, the time and space constraints in the remittance of money from cities to villages/rural areas have been minimized (Mbiti & Weil, 2013; Morawczynski, 2008). In addition to social and communal benefits, M-Pesa has created new job opportunities that have led to improved livelihood and freedom for individuals (Gencer, 2011; Morawczynski, 2009).

An important factor supporting the uptake of both M-Pesa and Ushahidi was the Kenyan government's policy decisions that allowed competition in the telecommunication sector, and also enabled ICT-driven innovation clusters to emerge from socio-cultural contexts. Through the liberalization of telecommunications, the government broke the monopoly of the state-owned telecommunication company and allowed more firms to compete in the telecommunication market. The drive to maintain a competitive edge led to M-Pesa, which started out as an experimental pilot project of Kenya's dominant mobile network, Safaricom, UK Vodafone Group and the UK Department for International Development in 2003. Safaricom is partly owned by the Kenyan government.

The flourishing of M-Pesa is also rooted in the communal value of trust within the local ecosystem of operation. In accordance with the country's regulatory frameworks for telecommunication and financial services, the M-Pesa's network of cash agents and the participatory public operate on the basic presumption of communal trust that is in turn instrumental in the prevention of corruption. As a result of this synergy among the social contexts of technological application, human capital, communal values and regulatory norms, there is an emergence of "innovation in situ" (Avgerou, 2010) or what has been described in some contexts as the "creative capitalism approach" to ICT4D (Kinsley, 2009). That is, a socially-embedded process of ICT application and innovation in the local environments, where there is an enhancement of people's capabilities through the expansion of choices for socio-cultural interactions, and basic livelihood and economic transactions across multiple time-spaces.

Sensitivity to local contexts, both in material and non-material terms, created incentive for the thriving ecosystem of engagement in this case. In the absence of the network of communal trust, or what Sen (1999) describes as the "transparency guarantees," the widespread usage and acceptance of M-Pesa might have been limited. Communal trust fosters participatory engagement of various societal actors in the integration of ICTs into socio-economic activities; showcasing the vitality of the interwoven relationships between local institutional capability, socio-cultural conditions and practicality of ICTs in the socio-economic development. Underlying this interwoven relationship is the interpenetration of the human capital and political-economic dynamics in the web of communal-centered regulatory governance that resonates with the networked communities of citizens, civil society groups, entrepreneurs and other societal stakeholders.

Against the backdrop of the AISI and ICT4D agenda in the continent, country-specific socio-cultural and political order matters in embedding ICT4D initiatives in the national development agenda. In this context, nation-states need to think and act strategically in foregrounding their ICT policies on local inventiveness. Albeit capacity building, this implies that local knowledge and global norms should be complementary in the process. In contrast to the current mechanism that externalizes the locus of intervention in tandem with international donors' interest, the AISI and its corresponding national plans (NICI plans) need to be firmly rooted in the epistemic saliency of local knowledge informed by evidence-based policy research and participatory communal engagement. In other words, there is a need to have a pragmatic shift of focus from the linear global fixity of an ICT agenda that is framed and measured in terms of ICT access and diffusion to

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human-centered and socio-cultural oriented frameworks that hinge on the polycentric mechanism of participatory action and governance.

For example, as it has been seen with Kenya and M-Pesa, foregrounding ICT4D initiatives and policy approaches in local realities ensures that local knowledge and global agendas are complementary in building local inventiveness. While it is recognized that ICTs are not 'magic bullets' in the development process, M-Pesa's success underscores the fact that a mixture of domestic political forces, institutional actors and socio-cultural norms within each geographical nation-state largely drives the temporal ordering of the national policy regime and application of ICTs for social change and community development. In the backdrop of flawed telecommunication reforms and skewed AISI implementation, the political buy-in that M-Pesa got from various stakeholders fostered communal mechanism that allowed it (M-Pesa) to improve individual livelihood and fulfill socio-economic needs. In sum, from the foregoing, ICT4D initiatives are more likely to flourish when there is causal linkage between context-specific capabilities (such as human capital and cultural values) and societal forces (such as a clear-cut policy regime, political systems, socio-economic structure) within the geographical spaces of nation-states.

7. Conclusion

As this study shows, there was an absence of necessary political-economic machinery to drive a causal linkage between context-specific capabilities (such as human capital and cultural values) and societal forces (such as a clear-cut national policy regime) for the AISI's widespread implementation across the continent. Specifically, the AISI implementation was significantly hampered by socio-political and institutional factors that ranged from policy inertness to limited financial resources and absence of political action. Consequently, in spite of the increase in the proliferation of ICTs in many African countries, the idealized information commons and inclusive sustainable African information society that the AISI envisioned is far from reality.

Though the AISI failed to actualize its vision of an inclusive digitally networked African information society, it developed a common interest for the ICT4D agenda within the continent because it was the first continent-wide initiative with action plans for the appropriation of ICTs for development in Africa. As such, despite the problematic challenges that confronted the initiative, it still holds symbolic value in the continent-wide discursive space of the ICT4D agenda.

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