Alleviating Poverty through ICT as a means of Sustainable Socio-Economic Growth in Nigeria

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ABSTRACT  
Sustainability is improving the quality of human life while living within the carrying capacity of supporting eco-systems (Wikipedia, 2010). Sustainability is also a call to action, a task in progress of journey and therefore a political process (Markus, J. et al, 2006; in Wikipedia, 2010). While sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNGA, 1987; in Wikipedia 2010). This paper gave some definitions of sustainability citing some authors. It further takes a look at the impact of ICT on sustainable socio-economic development, examples of countries where ICT has been successful in enhancing economic growth, and gave some areas where ICT can be used to alleviating poverty as a means of sustainable socio-economic growth in Nigeria. Finally, conclusions were drawn and recommendations made.

KEY WORDS  
Sustainability, ICT, economic growth, m-commerce, alleviating poverty

JEL CODES  
O15, O44, Q56

Sustainability is the capacity to endure (Wikipedia, 2010). It is the potential for long-term maintenance of well being, which in turn depend on the maintenance of the natural world and natural resources. Sustainability has become a wide-ranging term that can be applied to almost every facet of life on Earth, from local to a global scale and over various time periods. Long-lived and healthy wetlands and forests are examples of sustainable biological systems. Invisible chemical cycles redistribute water, oxygen, nitrogen and carbon through the world’s living and non-living systems, and have sustained life since the beginning of time. As the earth’s human population has increased, natural ecosystems have declined and changes in the balance of natural cycles have had a negative impact on both humans and other living systems.
Sustainability is about stabilizing the currently disruptive relationship between earth’s two most complex systems-human culture and the living world ((Hawken, 2007; in Wikipedia, 2010).

The word sustainability is derived from the Latin word sustinere (tenere, to hold; sus, up) (Wikipedia, 2010). Dictionaries also provide meanings for sustain, the main ones being to “maintain”, “support”, or ‘endure” (Onions, 1964; in Wikipedia, 2010). However, since the 1980s sustainability has been used more in the sense of human sustainability on planet Earth and this has resulted in the most widely quoted definition of sustainability and sustainable development, that of the Brundtland Commission of the United Nations on March 20, 1987: “to sustainable development is development that meets the needs of the present without compromising the ability of future generations meet their own needs (UNGA, 1987; in Wikipedia 2010). At the 2005 World Summit it was noted that this requires the reconciliation of environment, social and economic demands – the “three pillars” of sustainability (UNGA, 2005; in Wikipedia, 2010). This view has been expressed as an illustration using three overlapping ellipses indicating that the three pillars of sustainability are not mutually exclusive and can be mutually reinforcing. From the foregoing, it is clear that a universally accepted definition of sustainability is elusive because it is expected to achieve many things. On the one hand it needs to be factual and scientific, a clear statement of a specific destination. Therefore, the simple definition that “sustainability is improving the quality of human life while living within the carrying capacity of supporting eco-systems” (Wikipedia, 2010) though vague, conveys the idea of sustainability having quantifiable limits. But sustainability is also a call to action, a task in progress of journey and therefore a political process, so some definitions set out common goals and values (Markus, J. et al, 2006; in Wikipedia, 2010).

The Impact of ICT on Sustainable Socio – Economic Development

There is no doubt that the use of ICT is perceived as a catalyst for economic growth. ICT is defined as a set of activities that facilitate by electronic means the processing, transmission and display of information (Estavillo, 2004; in Bongo, 2005). Thus, it is important to know how the effectiveness of such a process has an impact on a nation’s economy. Typical ICT components include hardware, software and telecommunication equipment (Kaiser, 2004; in Bongo, 2005). ICT capital is superior to Non-ICT capital in enhancing economic growth: a higher level of ICT capital stock per capita allows a typical economy to achieve a higher growth rate for given levels of growth in labor and capital inputs (Vu, 2004; in Bongo,2005). With respect to Khuong Vu’s view, it is possible to say that sometimes it may not be how much capital you invest, that makes a difference, but rather how you invest it.
Economic growth is the increasing ability of a nation to produce more goods and services (Miles, 2001; in Bongo, 2005). The use of ICT therefore enables the production of goods in a small amount of time with the assistance of computerized systems. Services are also provided more efficiently and rapidly. Growth can occur in two different ways; the increased use of land, labour, capital and entrepreneurial resources by using better technology management techniques and increased productivity of existing resource use through rising labour and capital productivity (Miles, 2001; in Bongo, 2005). This advocate furthers the impact of ICT in contributing to economic growth that occurs as a result of a country’s development partially assisted by the use of technology. What is meant by technology is the development and application of tools, machines, materials and processes that help to solve human problems (Wikipedia, 2004).

Economic growth is also closely linked with the distances we are able to travel, thus the further people are, on average, able to travel, the greater the economic activity and wealth of the society (Lake, 2004). He further stated that, the increasing use of information and communication technologies (ICT) is changing the nature of this linkage with the use of virtual mobility that renders the distance less important, but insists that the connection with mobility remains. If consumers spend less on transportation, they would save money, which could be added to their disposable income. Increasingly ICT are becoming pivotal for economic growth. By enabling “virtual mobility”, ICT provide the means to undertake many of the activities that have so far needed physical transport (Lake, 2004). This implies that it is true to say that the uses of email, online banking and e-commerce have significantly cut down on the physical transportation involved in sending mail, banking and buying goods, which as a result save money.
Definitions of sustainability often refer to the "three pillars" of social, environmental and economic sustainability (Adams, 2006)

A representation of sustainability showing how both economy and society are constrained by environmental limits (Ott, 2003)

**Example of Countries where ICT has been successful in enhancing economic growth**

The metrics used to measure economic growth are the GDP (Gross Domestic Product) which determines the value of output produced within a country during a time period and the GNP (Gross National Product) which also identifies the value of output produced within a country plus net property income from abroad (Bized, 2004). The GDP/GNP per head/per capita, which takes into account the size of the population, is also used.

During the second half of the 1990s the US, also some EU Member States (notably Ireland, the Netherlands, and Finland) and some other OECD countries—Organisation for economic Co-operation and Development (e.g.US, Australia and Canada), have recorded a resurgence of economic growth and of productivity, steady or declining inflation and diminishing unemployment through the deployment of ICT (Commission of European Community, 2001). Piatkowski (2003) indicates that in Poland, ICT investment contributed on average 0.47 of a percentage point or 8.9% of GDP growth and 12.7% or 0.65 of a percentage point contribution to labor productivity between 1995 - 2000.

<table>
<thead>
<tr>
<th>Year</th>
<th>AUS</th>
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<th>FIN</th>
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<th>ITA</th>
<th>JAP</th>
<th>UK</th>
<th>US</th>
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<tbody>
<tr>
<td>90-95</td>
<td>0.48</td>
<td>0.30</td>
<td>0.24</td>
<td>0.18</td>
<td>0.30</td>
<td>0.20</td>
<td>0.31</td>
<td>0.27</td>
<td>0.43</td>
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<tr>
<td>95-99</td>
<td>0.66</td>
<td>0.51</td>
<td>0.62</td>
<td>0.33</td>
<td>0.35</td>
<td>0.36</td>
<td>0.38</td>
<td>0.47</td>
<td>0.88</td>
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<tr>
<th>Year</th>
<th>90-95</th>
<th>95-99</th>
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<tbody>
<tr>
<td>Real Output Growth</td>
<td>3.37</td>
<td>4.72</td>
</tr>
<tr>
<td></td>
<td>1.79</td>
<td>4.09</td>
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<tr>
<td></td>
<td>-0.70</td>
<td>5.62</td>
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<td></td>
<td>0.97</td>
<td>2.60</td>
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<td>2.22</td>
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<td>2.12</td>
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<td></td>
<td>2.64</td>
<td>4.43</td>
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It is true to say that the results clearly demonstrate that when the contribution of ICT is greater, so is the real output growth. For example in the UK, between 1990 and 1995 when the contribution of ICT accounted for 0.43 of a percentage point of economic growth the Real Output Growth for that period was 2.12, whereas between 1995 and 1999, when the contribution of ICT was 0.47, the Real Output Growth that occurred during that period was 3.48. As a result, we could say that ICT drives the economy and also effective ICT investments do have a positive impact on the economy.

Alleviating Poverty through ICT as a means of Sustainable Socio-Economic Growth in Nigeria

ICTs are usually understood to refer to computers and the Internet, but many consider this view to be limited, as it excludes the more traditional and usually more common technologies of radio, television, telephones, public address systems, and even newspapers, which also carry information (Harris, 2004). In particular, the potential value of radio as a purveyor of development information should not be overlooked, especially in view of its almost ubiquitous presence in developing countries, including the rural locations in which the vast majority of the poor live. Telecentres can provide a range of ICT-based services from which they can earn an income, such as telephone use, photocopying and printing, email and word processing. This helps with financial self-sustainability, which telecentres are often required to attain, although some argue that ICT-based development services should not have to be paid for by poor people, and should be provided as a public service, rather like libraries.

Examples of areas where ICT can be applied to alleviate poverty include:
M-commerce: Mobile Commerce, also known as M-Commerce or m-Commerce, is the ability to conduct commerce using a mobile device, such as a mobile phone, a Personal digital assistant PDA, a smartphone, or other emerging mobile equipment such as dashtop mobile devices. Mobile Commerce has been defined as follows: "Mobile Commerce is any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device." (Tiwari, R.; Buse, S.; 2007).

Using Bluetooth technology, smart phones offer fax, e-mail, and phone capabilities all in one, paving the way for m-commerce to be accepted by an increasingly mobile workforce. As content delivery over wireless devices becomes faster, more secure, and scalable, there is wide speculation that m-commerce will surpass wireline e-commerce as the method of choice for digital commerce transactions.

Through the use of ICTs such as the GSM telephone, transaction costs of many Nigerian who are poor have drastically been reduced. People make called before traveling and for business transaction. The technology has led to increase service innovation, efficiency and productivity.

The industries affected by m-commerce include:

Financial services, which includes mobile banking (when customers use their handheld devices to access their accounts and pay their bills) as well as brokerage services, in which stock quotes can be displayed and trading conducted from the same handheld device

Telecommunications, in which service changes, bill payment and account reviews can all be conducted from the same handheld device

Service/retail, as consumers are given the ability to place and pay for orders on-the-fly

Information services, which include the delivery of financial news, sports figures and traffic updates to a single mobile device

Designing posters: unemployed youths can be trained on the use of computer for desktop publishing in which they can design posters and invitation cards for events likes wedding, burial ceremony, naming ceremony, graduation, and so on. Infact, printers nowadays first of all do their design on the computer and then use the computer print out to do mass printing.

Getting information: information about job search and applying for jobs online can be facilitated through the internet thereby reducing the number of unemployed youth and thus reducing poverty.
Television viewing centre: unemployed youth can tap opportunity offered by ICT through cable television channels like Dstv, hitv, mytv, and so on. This can be tap by opening television viewing centre where viewers can watch live European matches, international football matches, and other sporting activities. The rush for such centre has now made them a very lucrative business in Nigeria and has made it a poverty alleviation medium.

Cyber café: the importance of the internet cannot be over-emphasized. Cyber café is another important medium through which ICT can be used to alleviate poverty. Application for jobs, school registrations, submission of articles, completion of forms for JAMB, NECO, WAEC, and so on are now done on the internet. This has made the cyber café business a lucrative one, and a means of alleviating poverty.

Bulk SMS: using a mobile phone, bulk SMS can be sent to many people at a lower rate on GSM phone. This is another way by which ICT can help reduce poverty.

What is required to make ICTs effective anti—poverty tools?

These are presented in two categories: those that relate to (i) government interventions, and (ii) programme implementation - could also include government interventions (UNDP, 2005).

<table>
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<tr>
<th>Associated Conditions that make ICTs Effective Anti-Poverty Tools</th>
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<tr>
<td><strong>Conditions for Government Interventions</strong></td>
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<tr>
<td>• Pro-poor polices for reform</td>
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<tr>
<td>• Reform of public services for e-Government</td>
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<td>• Conducive telecommunications regulations and environment</td>
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<td>• Decentralized decision-making</td>
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<td>• Complementary infrastructure, e.g. roads</td>
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<td>• Education</td>
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<td>• Monitoring and evaluation</td>
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www.hrmars.com/journals
• Technical skills
• Local entrepreneurship
• Content development
• Participation and ownership by the poor
• Evaluation

Conclusions

Information and knowledge are critical components of poverty alleviation strategies, and ICTs offer the promise of easy access to huge amounts of information useful for the poor. However, the digital divide is argued to be the result rather than the cause of poverty, and efforts to bridge it must be embedded within effective strategies that address the causes of poverty. Moreover, earlier patterns of adoption and diffusion of technology suggest that ICTs will not achieve their full potential without suitable attention being paid to the wider processes that they are intended to assist and to the context within which they are being implemented. There are many examples of successful implementation that allow for a synthesis of experience that can lead to an understanding of how to approach the use of ICTs for widespread alleviation of poverty.

ICTs are usually understood to refer to computers and the Internet, but many consider this view to be limited, as it excludes the more traditional and usually more common technologies of radio, television, telephones, public address systems, and even newspapers, which also carry information. In particular, the potential value of radio as a purveyor of development information should not be overlooked, especially in view of its almost ubiquitous presence in developing countries, including the rural locations in which the vast majority of the poor live.

Recommendations

For effective sustainability development to take place through the use of ICT as a means of alleviating poverty, it is therefore recommended that:

Government should invest heavily in ICT as a means of alleviating poverty.
Import duty tax should be reduced on ICT equipment/tools to make them affordable to people.

Local production of ICT equipment like the GSM phone, computers and so on should be encouraged by the government.

The **Satellite Project – NARSDA** should become a success and not a political project.

National Electric Power Grid should be improved on for effective ICT production to take place.

**References**


