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# OVERVIEW OF ICT FOR DEVELOPMENTS (ICT4D) IN DEVELOPING COUNTRIES: BOTSWANA CASE STUDY

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**ABSTRACT**

In the information and globalization era, ICTs make available an exceptional opportunity to the developing nations to meet imperative developmental goals, such as, basic healthcare, education, poverty reduction and democratic improvement, among others. The potential advantages of Information Communication Technologies for Developments (ICT4D) are massive. ICT4D has been actively promoted by the United Nations, through the UN Development Programme, as a powerful tool for economic and social development around the world. ICT4D is an initiative aimed at bridging the digital divide and aiding socio-economic development by ensuring equitable access to up-to-date communications technologies. Infrastructure initiatives and development strategies incorporating ICTs are being increasingly promoted and launched across countries worldwide. This paper is gives an overview of the ICTD4 in developing countries. It briefly shows how ICTs have been diffused in to the socio-economic developments of people in developing countries, citing Botswana as a case study example of these developing countries. Botswana's ICT4D programmes and initiatives are mentioned in this paper, together with examples of the projects undertaken. The importance or significance of each project or initiative in the development of the socio-economy of Botswana has also been highlighted. The significance of this paper is to help those who wish to know about the ICT4D especially in the developing states. It could also be helpful to the researchers and scholars or anyone who is interested in knowing about the ICT4D in Botswana, the past and the current progress in ICT.

***Keywords: ICT4D, economic developments, programmes, initiatives***

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## 1. INTRODUCTION

There is little doubt about the increase pervasiveness of the impact of Information Communication Technologies (ICTs) on economies and regions, and on their ability to alter spatial relationships in the way economies function (Grimes, 2000). Furthermore, studies that have examined the impact of ICTs and developments indicate that, given their role in the existing changes of advanced economies, ICTs offer the promise of new business and employment opportunities along with elevated productivity gains. Governments globally are promoting and infusing the ICTs into their developments. In the eighth Millennium Development Goal, ICTs are mentioned in concert with building a global partnership for development. This is based on open trading, financial systems and making available to all the benefits of new technologies, especially those related to information and communication (Joseph, 2012).

Multinational companies are now increasingly relying on the new ICTs to enable them function across the globe. According to Grimes (2000), with the globalization of economic activity, there has also been an increasing separation of the different functions of large corporations, allowing companies to locate less skilled operations in a wider variety of regions. This locational separation of functions is a consequence of the separation of production and consumption which characterizes this new stage of economic activity (Grimes, 2000). These developments are not restricted or limited to any sector: both the government and private sectors are partakers. Increasingly there is a drift towards the industrialisation of the service sector, which is resulting in the activities such as data processing and telemarketing becoming more mobile internationally. The arrival of the Internet, high performing telecommunications network and other forms of Information communication technologies have radically and permanently changed the way citizens, business, government, communities and countries access information and services (Botswana eGovernment strategy, 2011).

There are several initiatives worldwide in infrastructure development, policy and regulation that are aimed at bridging the digital divide and propelling the socio economic developments. Each country in the world is expected to undertake certain measures especially in the areas of Information and Communications Technology (ICT), policy and regulatory framework within its boundaries to achieve in bridging the digital divide and promotion of the socio-economic developments (Mutula, 2008).

The government of Botswana has put in place some plans, policies and strategies to harness the power of ICTs to drive the socio economic development of the nation. These include Vision 2016, the National Development Plans (NDP7-10), National ICT Policy (Maitlamo), the formulation of the

Universal Service Policy and the liberalisation of the Telecommunications sector. These efforts are in line with international initiatives such as the WSIS declaration of 2003, the WITFOR Gaborone declaration of 2005, SADC IT protocol, ECA action framework to which the Government of Botswana is a signatory (RTS, 2002).

## 2. OBJECTIVE

The major objective was to do an overview of ICT4D in developing countries using Botswana as a case study example. Thus, determining the current status of Information and Communication Technologies for the socio-economic developments in Botswana. The study focused on the programmes and initiatives for ICT4D which are driven and guided by Botswana's national ICT Policy (Maitlamo).

## 3. METHODOLOGY

Data and information used in this paper is composed from literature and document analysis from government working papers, policies, strategies and minutes. Some of the data was obtained through telephone and face to face interviews with the relevant stakeholders involved.

## 4. FINDINGS AND DISCUSSIONS

The ICT4D initiatives which the Government of Botswana has put in place in line with the National ICT policy (Maitlamo) include the Connecting Communities Programmes and the Rural Telecommunications Development Programmes (RTS, 2002; WITFOR, 2005). Through these programmes, several projects and initiatives have been put in place. Examples of these projects and initiatives are discussed in the sections below coupled with their benefits.

### 4.1 CONNECTING COMMUNITIES PROGRAMME

There are several initiatives and projects that the government of Botswana has implemented and is supporting, some of these initiatives have started and are ongoing. These initiatives include the Sesigo ePublic Libraries project. Sesigo project is sponsored by Bill and Melinda Gates in collaboration with the Government of Botswana. The Sesigo project is aimed at provision of free Internet access and free computer training in libraries and reading rooms throughout the country. The librarians also receive computer and Internet training so that they are able to assist users. 78 of the country 's 98 libraries are ready for implementation, and six are already fully equipped and currently providing free Internet access and training for local residents. Many of those benefiting from the programme have been first –time computer users, with ages spanning from 5-80 years

old.It is anticipated that over 70,000 members of the public will benefit from the programme and that will contribute significantly to development and community engagement.

There is also the Thutonet project that incorporates the schools connectivity initiative, to link all secondary schools to the Internet throughout the country (IST Africa, 2011). The government has also implemented the I-partnership project. This is a computer ownership project for government employees and unemployed youth to buy computers using government scheme. The government has also started on implementing e-government. This is undertaking major service delivery reform programmes aimed at improving service quality by going online. A government web portal with information and e-services has been developed to improve service quality with a customer focused design (eService Assessment Report, 2009).

To enhance service delivery further, the government has initiated several computerisations of projects in the public sector. The services which have been manually driven are now digitised. An example of such projects is the Department of Road and Transport's drivers licensing system. The driver's licenses are made accessible at all government Road Transport offices and depot across the country. Another example is of the Ministry of Agriculture's Livestock Identification and Trace-back System (LITS), developed to maintain a record of all the cattle in the country. The system uses data from other Government department like the National citizen identification system for identifying cattle owners (Botswana Current State Report, 2010).

The Attorney general office has placed many of the country's laws online. It has been working on the development of a number of pieces of legislations that are important in enabling greater levels of ICT usage. The telecommunication act and cybercrime legislation has now been enacted. Implementing legislation in support of data protection and electronic transactions will be now become important, as they will be required to fully enable more sophisticated levels of electronic transactions.

e-Health is another initiative that the government of Botswana has put in place. The e-Health initiative activities include the following: installation of local area networks (LANs) and wide area network (WANS) in health facilities; an Integrated Patient Management System (IPMS) at both Princess Marina and Nyangabwe referral hospitals, as well as Sekgoma Memorial and Letsholathebe district hospitals; Warehouse Management System (WMS) at the central medical stores (Botswana eGovernment Strategy, 2011).

The other initiative of Connecting Communities Programme is the Kitsong centres; an example of the public access venues which seek to help in providing access to Internet, local content and ICT

services to the people living in rural areas. The ICT services provided include to access of computers, the Internet, photocopying, printing and faxing facilities. To date, over 50 centres have been introduced in towns and villages up and down the country and are providing convenient access to local and community services, business websites and online information.

Botswana Post is planning to introduce online computers terminals into all of its major post offices and agencies. A number of post offices are already equipped with computers and Internet facilities which provide customers with access to online websites, information and services. Botswana Post is planning to increase its role in providing electronic access to services in the coming months; including the online payment of bills and completion of government forms and documents.

There are a number of positive signs that indicate Botswana is on its way to becoming an online society. Companies and business of all sizes, and from all sectors, are now using the Internet and wireless technologies to market and deliver their products and services. Most of the major banks are now offering trusted and secure online banking to check account balances, transfer money, request bank statements and pay bills. Many are also taking advantages of the large number of mobile phone users in the country to provide "mobile banking services" directly to cellular phones. This is a very convenient and innovative way to access common banking services without actually having to visit the bank itself- and is especially useful for those in rural and remote communities who live in a considerable distance from their nearest bank branch.

Similarly the major insurance and professional services companies are also moving many products and services online to increase sales and reduce costs and make it more convenient for their clients to carry out self-service transactions from comfort of their homes. Air Botswana has recently launched a comprehensive website that allows clients to check flights times, book a flight, reserve and pay for their travel without having to visit a travel agent or Air Botswana office. Even small and home-based businesses are now effectively using the Internet as a sale and marketing tool, for example, the retail supermarkets, wholesales and big shops.

### 4.2 RURAL TELECOMMUNICATION DEVELOPMENT PROGRAMME

In Botswana both the government and the private sectors are the consumers of ICTs but the government being the biggest consumer. The government is embracing technology as an efficiency tool for the development (Iyanda & Ojo, 2008; Nkwe, 2011). The government use of ICTs is particularly visible through the central government site and use of ICTs in the control of national income and expenditure sources (Uzoka & Ndzinge, 2009; Nkwe, 2011). Developments in the ICT

sector have been phenomenal and continue to grow. Policies have been developed with an aim to improve penetration, increase uptake and bridge the digital divide and diversify the economy. The telecommunication industry has been liberalised, this is to help drive costs down (Nkwe, 2012).

Botswana's on-going liberisation of the telecommunications sector continues to deliver important benefits. Following the 2008 launch of the country's third mobile service provider, beMobile, the Wireless federation reported that Botswana is likely to pass Nigeria and South Africa as the Africa's most extensive user of the mobile telephones. In 2004 only 31% of the population were users of mobile phones. Today, it is estimated that in excess of 85% of the population has the use of a mobile phone (Botswana eGovernment strategy, 2011).

Telecommunications access, reliability bandwidth and consumer cost are likely to benefit even more in coming years as Botswana begin to see the results of its sizeable investments in the West African Cable Systems (WACS),Eastern African Submarine cable system (EASSy) and SEACOM initiatives that will provide high performing broadband networks between Botswana and the rest of the world. Botswana also has some connections through some fibre links to countries such as South Africa, Namibia, Zimbabwe and Zambia. The latest being the trans-Kalahari fibre optics (Botswana eGovernment Strategy, 2011).The trans Kalahari fibre optic project, which was completed in recently will ensure that good quality telecommunications infrastructure reaches major towns and villages.

Botswana Power Corporation (BPC) has been rolling out an extensive rural electrification initiative since 2006.At the end of October 2008 over 52% households were connected to the national grid, and a total of 270 villages had been electrified. In order to meet the increased demand of power (domestic electricity) an expansion of the Morupule B power station has been made so that the country meet the current and future of demands of domestic market.

## 5. CONCLUSIONS AND SUMMARY

The aforementioned examples provided are just a representative sample of initiatives that reflect the growing level of domestic and international connectivity that is beginning to emerge within Botswana-There are many more example that merit mention. The overall trend is encouraging and clearly demonstrates that, as a developing country, Botswana is beginning to understand and embrace the broad societal benefits of the networked economy and global information society and lay the important infrastructure to become a connected country. However despite best intensions and major investments in infrastructure, Botswana is not yet making progress it needs to achieve to be

the competitive in the connected world. This is highlighted in the overall global standings in terms of national connectivity and e-readiness. According to the reports released by the world In economic forum (WEF) Botswana's rankings have been dropping. This does not mean that Botswana have been inactive, far from it, but it is a clear indication that other countries are mobilizing more effectively, have been more decisive in their implementation and usage of ICT, and are beginning to amass the social and economic benefits that are available through gainful and productive inclusion in the digital economy.

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