

Factors Inhibiting the Implementation of Digital Villages in Kenya

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Abstract

The achievement of an information-based society is one of the main priorities of the Government of Kenya (GoK) towards the realization of national development goals and objectives for wealth and employment creation. However, even in their efforts the ICT sector is still currently more active in urban areas, resulting in wide regional disparities in the distribution of ICT facilities. In order to address this disparity, the Kenya ICT Board (KICTB) supported the roll out of new “electronic centre’s” which were named Pasha Centre’s (and are also commonly referred to as Digital Villages). The Digital village’s initiatives in Kenya commenced with a lot of optimism in 2009 however five years down the line it cannot be recorded that they have been successful. The purpose of this study was to establish the factors that have hindered the successful implementation of digital villages in Kenya. For this study desk research methodology was adopted. The secondary data from published reports was discussed with emphasis on the area of interest to this study. The findings of this study indicated that there were various factors that hindered the successful implementation of digital villages in Kenya. The study recommended need for having a government policy for the digital village project. This policy if developed will serve to protect such projects in future enabling them to take off and function independently.

Key Words: Digital Villages, Pasha Centres, Kenya ICT Board, Inhibiting, Implementation.

1.0 Introduction

Developed countries have already experienced a revolution in Information and communication Technology (ICT). According to Sola (1990), in most cases this is normally considered an industrial revolution of some sort. This craze has awakened many nations Kenya notwithstanding. Nations have discovered the pivotal role of ICT hence today it forms part and parcel of their daily interactions, according to the Economist (2009), ICT is core in every nation because it forms part of the economic, social and political empowerment.

Efforts Made by developing nations to reap the benefits of the ICTs are challenged by the lack of infrastructure especially in the rural areas where majority of the population is poor. As a result some developing nations like Kenya have come up with innovative ideas to encourage development of ICT infrastructure in the rural areas and provide the rural community with access to information. One such innovation is the development of “Pasha Centers”

The Kenyan Government, together with external stakeholders and private contractors, has been increasing their ICT investments to provide the entire population with information and communication regardless of demographic factors (Hallberg et al, 2011). Therefore the Government, through the Ministry of Information and Communication (MoIC), recognizes that the provision of Information and Communication Technology goods and services is important for enabling economic and social development by improving communication and facilitating information flow. However, even in their efforts the ICT sector is still currently more active in urban areas, resulting in wide regional disparities in the distribution of ICT facilities.

In order to address this disparity, the Kenya ICT Board (KICTB) supported the roll out of new “electronic centre’s” which were named Pasha Centre’s (and are also commonly referred to as Digital Villages) (Obora et al, 2014). These existing e-Centres according to KICTB were also to be upgraded. Digital villages are hubs that provide a host of services to the public via computers connected to the internet, or by using and marketing other ICT-enabled applications. This work was to be done under the Kenya ICT Program (KICTP) initiative, which had an aim to provide internet access and e-Services at the grassroots level via multi-stakeholder partnerships. The purpose of the Digital villages is to enhance the livelihoods of local citizens and encourage new micro-enterprises by providing access to information, education and new markets.

Although the objective of the digital villages was quite splendid, it is far from being realized. This study seeks to establish the success of the digital villages in Kenya and determine the factors inhibiting the potential of the digital villages from being realized.

1.1 Problem Statement

The achievement of an information-based society is one of the main priorities of the Government of Kenya (GoK) towards the realization of national development goals and objectives for wealth and employment creation. ICT is one of the fastest growing sectors in the country. Harnessing of ICT will therefore help the Government to realize a number of its key public policy objectives. Most ICT facilities in the Kenya have traditionally been located in urban areas; this has resulted in glaring disparities between urban and rural areas in the distribution of ICT facilities. To redress the disparities, the Kenya ICT Board embarked on the implementation of digital villages in 2009. However five years down the line it cannot be recorded that they have been successful with some pasha managers abandoning the project (Obura, 2014). For all this period, only 63 centers have been opened with others failing to pick up and others closed down as they could not break even. This study thus sought to assess the success of digital villages with a view of determining the factors inhibiting their success.

1.2 Objectives

The objectives of this study are;-

- To establish the aim of the digital village project in Kenya
- To determine the factors inhibiting the implementation of the digital villages in Kenya

1.3 Purpose of the study

The purpose of this study was to establish the factors that have hindered the successful implementation of digital villages in Kenya and suggest remedies to be employed by the government so as to achieve the intended objectives.

2.0 Methodology

For this study desk research methodology was adopted. Desk research refers to secondary data or data that can be collected without fieldwork. To most people it involves published reports and statistics and these are certainly important sources. Desk research therefore is the collection of secondary data from internal sources, the internet, libraries, trade associations, government agencies, and published reports. It is frequently carried out at the beginning of a study as a stage-gate to see if more costly primary research is justified.

2.1 Genesis of Digital Villages in Kenya

The fast growth of the use of Information and Communication Technologies (ICTs) has had a profound impact on many aspects of our daily life. Recently, ICTs have dramatically transformed the current society and many economies around the world (Acilar, 2011). Today, ICTs have become an essential part of modern

culture and cover almost all aspects of our lives. With the advancement of ICTs, especially the dawn of the Internet and the World Wide Web, the world has today become like a global village.

The mass diffusion of the Internet across most populations across the world has led many to speculate about the potential effects of the new medium on society at large. Enthusiasts have heralded the potential benefits of the technology suggesting that it will reduce inequality by lowering the barriers to information allowing people of all backgrounds to improve their human capital, expand their social networks, search for and find jobs, have better access to health information and otherwise improve their opportunities and enhance their life chances (Hargattai, 2003).

However the study done by Hargattai, (2003) cautions that the differential spread of the Internet across the population will lead to increasing inequalities improving the prospects of those who are already in privileged positions while denying opportunities for advancement to the underprivileged. While the telecommunications infra-structure has grown and ICT has become less expensive and more accessible, today more than ever, the invisible line that separates the rich from poor, men from women and the educated from the illiterate; also separates the connected from the disconnected (Zaidi, 2003). The unequal access to and utilization of ICTs is now being recognised as one of the prevalent issues of our times (Sciadas, 2005).

Almost every indicator shows that there is a significant difference between developed and developing countries in terms of accessing and using ICTs. For example, according to International Telecommunication Union (ITU), while approximately 72 % of the population is Internet user in developed countries, this ratio is 21 % in developing countries. The number of fixed telephone lines per 100 inhabitants in developed countries is estimated about 41, but, it is 12 in developing countries (ITU, 2010). With such disparities it can therefore be very challenging to access up-to-date knowledge and information in developing countries (Suchak & Eisengrein, 2008).

Much attention among both academic researchers and policy makers has been paid to what segments of the population have access to the Internet or are Internet users. Access is usually defined as having a network-connected machine in one's home or workplace. Use more specifically refers to people's actual use of the medium beyond merely having access to it. Such studies more often reveal that in developing countries there is evident Internet use by people in urban areas compared to rural areas (Rogers & Shukla, 2001).

Furthermore, Acilar, (2011) & Iskandarani, (2008), affirm that as a result of advances in information technologies, the knowledge gaps between the information-rich and the information-poor have deepened over time and that has caused excluding certain parts of the world from enjoying the fruits of the said global village. This phenomenon has birthed what is referred to today as the digital divide.

The term "digital divide" was introduced by Larry Irving, Jr., former US Assistant Secretary of Commerce for Telecommunication and Communication in the mid-1990s in order to focus public attention on the existing gap in access to information services between those who can afford to purchase the computer hardware and software necessary to participate in the global information network, and low income families and communities who cannot (Boje & Dragulanescu, 2003).

Wilson (2004) defines the digital divide as "an inequality in access, distribution, and use of information and communication technologies between two or more populations." According to Wilson there are eight aspects of the digital divide: physical access, financial access, cognitive access, design access, content access, production access, institutional access, and political access. There are also philosophical and sociological sides of the digital divide because of a potential missed opportunity on the part of millions of people to obtain desirable jobs and enhance their lives by using computers and the Internet (Friedman, 2001).

"One strategy for bridging the digital divide within a nation, and between nations, is to encourage telecenters". (Rogers & Shukla, 2001) The first telecentres were established in the early 1980s in Scandinavia to promote the use of advanced Information and Communications Technology (ICT). They were funded from public funds for three years. This approach was seen as a way of letting people, especially farmers,

experiment with different ICTs. Similar projects were subsequently replicated in other parts of Europe and North America.

The centres aimed mainly at facilitating access to computers and online applications. African countries such as Ghana, Kenya, and Senegal were early in establishing private telecentres. Nonetheless, apart from private contractors, telecentres in Africa have received considerable support from international development organizations, e.g. UNESCO, ITU and IDRC (Benjamin, 2000; Jensen & Esterhuysen, 2001). In Kenya these centres are referred to as Pasha Centres and were aimed at bringing ICT services closer to the people in the rural areas.

2.2 Role of Digital Villages in the Realization of MDGs in Kenya

The Millennium Development Goals (MDGs) are eight goals to be achieved by 2015 that respond to the world's main development challenges. The MDGs are drawn from the actions and targets contained in the Millennium Declaration that was adopted by 189 nations and signed by 147 heads of state and governments during the UN Millennium Summit in September 2000. Kenya has made tremendous efforts in implementing the MDGs since the process started in September, 2002.

While the country is on course to achieve universal primary education due to the introduction of the free public primary education and reduction of HIV/AIDS as a result of the introduction of free antiretroviral (ARV) drugs in Government health facilities hence improving the survival rates of people living with HIV, other MDGs are still lagging behind. With the launching of the Vision 2030 and its first MTP (2008-2012), the UNDP supports the Government's initiative to disseminate the documents and sensitize the people of Kenya and its partners on the development goals enshrined in the Vision 2030. This is highly important.

Since these goals were intended to increase an individual's human capabilities and advance the means to a productive life, the MDGs emphasize that each country should develop policies tailored to its own needs and how to achieve these. Currently the MDGs emphasize three areas, human capital, infrastructure and human rights (UNDP, 2013). This study emphasizes infrastructure. The objectives of infrastructure include mainly access to information and communication technology.

Most developing countries Kenya notwithstanding have put up interventions like using the limited resources to achieve these goals within the stipulated time. In Kenya the target is to ensure information infiltrates to the rural areas where larger populations abide. The government of Kenya therefore resolved to set up digital villages to be used as hubs to disseminate the information and incline the nation towards achieving the MDGs.

2.3 Digital Villages in Kenya

"One strategy for bridging the digital divide while positively attaining the MDGs within a nation, and between nations, is to encourage telecentres". (Rogers & Shukla, 2001) The first telecentres were established in the early 1980s in Scandinavia to promote the use of advanced Information and Communications Technology (ICT). They were funded from public funds for three years. This approach was seen as a way of letting people, especially farmers, experiment with different ICTs. Similar projects were subsequently replicated in other parts of Europe and North America.

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The Kenyan government, together with external stakeholders and private contractors, is increasing its ICT investments in order to reach the entire population regardless of the current demographic factors (Hallberg et al, 2011). The *Digital Villages Project (DVP)* is one of the largest efforts to do so. A Digital Village is a centre dedicated to providing access to Information Technology mainly through computers and

usually located within rural areas where access to this information is normally limited (ICTBoardofKenya,2010).

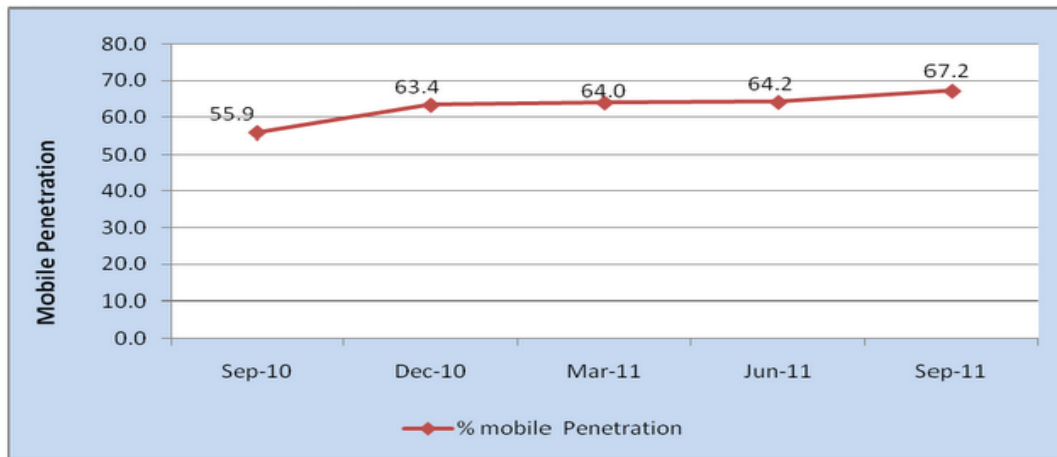
This helps encourage and enhance communication between the user and the outside world. Some Digital Villages also provide learning material through the use of either pre-loaded software or online courses from around the world, allowing a user to increase their knowledge in a particular field (Tole, 2012). In the Kenyan situation this would mainly focus on Agriculture, Health Care and Software development. Digital villages are referred to as *Pasha Centres* in Kenya, meaning “to inform”, and are located in rural and resource-poor environments. This was birthed in 2007 when the Kenyan government through the then constituted ICT board set-up initiatives in order to allow communities located within remote parts of the country access information and communicate better with the outside world. The main goals of the ICT Board of Kenya and Pasha projects were as follows (ICT Board of Kenya, Pasha Report, 2011):

1. Provisioning of telecommunications infrastructure by the governments.
2. Enable access to information by the occupants of rural areas.
3. Encourage communication between these communities and the outside world.
4. Encourage creation of other economic opportunities within these communities aided by ICT knowledge such as Software development and local content.
5. Enhance support of current economic activities within an area such as agriculture or tourism.
6. Introduce the concept of Business Process Outsourcing within the country which would allow the decentralization of government functions and access to information from local offices.

Whereas in Kenya these centres are referred to as Digital villages in other countries such as Sri Lanka they are commonly known as Tele centres (Hansson et al, 2010). A digital village in Kenya serves to provide services with regard to Internet and telecommunication. In addition, digital villages are also meant to provide certain training, education, and governmental services (e-Government).

'Pasha', the government Digital Villages' project was started in 2009; the aim was to establish a few Digital Villages within constituency level. The major goal of the Kenyan Government to take this approach was the reduction of rural/urban migration (Vision2030). The major benefit of the Digital Villages has been the introduction of government services online. This has resulted in digitalization of records from its ministries such as Ministry of Lands where users can now be able to gain access to this data through a public portal. This has in turn marginally helped reduce the number of people travelling to urban centres in search of these records.

According to the CCK, out of the total population of 41 million, 34.9% have access to the Internet with over 95% of this figure accessing the Internet using mobile devices. CCK (Sector Report, Quarter1, 2011/2012) estimates that there are 27 million mobile subscribers in Kenya, representing a mobile penetration rate of 60%. This is shown from a CCK figure as below:

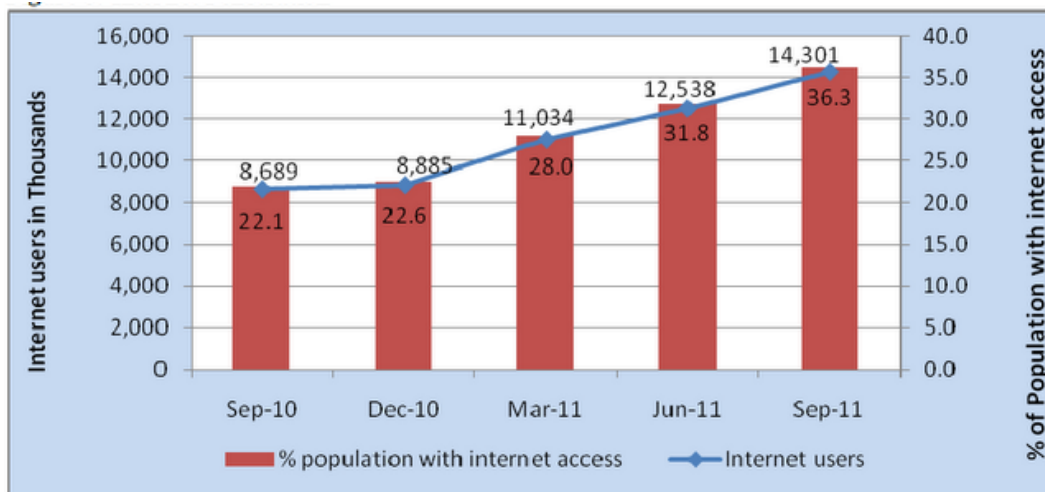


Source: CCK, Operators' Returns

Figure 1.1 Kenyan Mobile Penetration Rate, CCK Quarter 1 2011/2012

Even with these acknowledgeable strides key among the problems in Kenya's ICT development is the wide digital divide between rural and urban areas, with the latter having more access to these facilities? The problem lies in the fact that over 50% of this country's population resides within rural areas indicating the large economic potential of these areas (Kenya Economic Update, 2010). There have been numerous problems within rural areas such as poor transport network, limited access and the cost to the last mile that are resulting in a slower reach of ICT to these communities. As compared to urban areas, where Internet access is readily available and cheaper to access, it is considerably more expensive to obtain the same services in a rural area.

There are currently over 14 million Internet users in the country most of whom access using mobile devices. This is according to the latest sector report for quarter1 (2011/2012) from CCK. A figured is playing this is shown below:



Source: CCK, Operators' Returns

Figure 1.2 Internet Users in Kenya, (Source: CCK Quarter 1, Statistics Report 2011/2012)

Digital villages in Kenya were started in 2009. These Kenyan Pasha centres, have adopted an entrepreneurial model where ICT is used to bridge the digital divide and at the same time used by the

digital village entrepreneurs as a source of livelihood. These centers are run by entrepreneurs who have undergone training. A development loan from the revolving fund was awarded to these entrepreneurs who setup Pasha Centers. Normally availed loan was to be repaid hence the entrepreneurs had to come up with innovative ideas to ensure sustainability of the Pasha Centers.

The revolving fund was released to successful entrepreneurs who had vision and strategies that would enable the Pasha centers to grow. The first pasha center was then launched in 2009 in Kagundo, followed by other six centers across peri-urban and rural communities across the country. These were in Malindi, South Imenti, Garrisa, Siaya and Mukuru Kiaba.

These six centers acted as a pilot program that would provide future insights for other Pasha centers. These launches were made possible with the Kenya ICT Board working closely with Cisco Systems (Drury, 2011).

The Pasha project was met with a lot of optimism some six years ago mainly because the government had just unveiled the Kenya ICT board, comprised of private sector executives earning World Bank-level salaries, and the expectations were high. The idea was to set up a digital center in each of the 210 constituencies in the country. The centers would provide digital services, mainly government services, allowing people to reduce the distance they needed to travel in search of government services.

The centers were also supposed to spur innovation and provide employment in rural areas, hopefully allowing more people to move from Nairobi, the capital, to the rural areas, decongesting the capital. However for all this time only about sixty three (63) centres have been opened with others failing to pick and others closed down as they could not break even. It's therefore important to assess the factors inhibiting the vision of the digital villages in Kenya.

2.4 Factors Inhibiting the Implementation of Digital Villages in Kenya

A large digital divide exists between most developing countries strong IT sector and the low levels of overall telecom and computer diffusion. This is the case in India, Brazil and Kenya. (Hallberg et al, 2011). As concluded Castells, (1998) "Technology does not help solve social problems". This has mainly been seen in developing countries where the problems incurred range from political interference to a surprising reluctance by communities to support development projects.

A report on the factors shaping successful Pro-poor ICT in a study done on Commonwealth Developing Countries (Commonwealth policy studies unit, 2005) indicated that most of the partnerships which participate in ICT village provision have failed to succeed in delivering the goals they had initially projected. There was also no evidence on poverty assessment measures of these partnerships, thereby any indication of a timeline through the project and the benefits it had produced were not concrete (Sunden & Wicander, 2002).

In implementing the Pasha project partnerships can only be successful if the individuals all establish their roles and including the local communities in the project undertaken. The partnerships should not use a 'one size fits all' approach to providing Digital Villages to rural communities as this bound to result in failure. Largely, failure of the Pasha project in Kenya is due to various factors inhibiting the vision of these villages in Kenya. These include factors that are working against the implementation of these villages;-

2.4.1 Infrastructures

Infrastructures are facilities and/or equipment's that are required by any telecentre or digital village to function adequately. They includes: Computer sets, printer, photocopier, fax machine, internet connectivity, power back up and others. According to Adul Razak (2009), for digital villages to be successful and serve as an agent of developing knowledgeable society, they should be (1) well equipped with computers both for community and digital villages operators, (2) the computers should be regularly up-dated to meet up with the latest software in the market and ensure that they can be used for online

purposes, (3) the digital villages should be equipped with Wireless Fidelity (WI-FI) for those who want to use their personal laptops or computers, especially when the computers in the digital villages are fully occupied (4) special arrangements should be made for disabled groups by providing assistive facilities.

Figure 1.3: The Settings of Mukuru (the picture is representative of many deprived environs in Kenya) and Mukuru Promotion Centre (Photo Source: David Hallberg, 2011)



If these are achieved, the digital villages will function effectively and serve as effective agents for community to have access to knowledge and achieve desirable outcomes. However it has been observed that lack of constant power supply, and affordable and stable connectivity as well as difficulties in maintaining the digital villages equipment's are the most common problems affecting telecentres success (Fillip and Foote, 2007).

According to Fillip and Foote, (2007) the unstable power supply causes serious impediments to the digital villages such as, loss of revenue, paralyze activities in digital villages and early break down of computer equipment's which affect the success and long term sustainability of the digital villages. Also, Gichoya (2005), in his work claimed that lack of infrastructures as one of the factors affecting implementation of ICT projects. In line with this, Islam and Hassan (2008) also argued that lack of reliable communications infrastructures and inadequate bandwidth is also a factor affecting the take up services in the digital villages.

According to Gyamfi (2005), poor quality infrastructures and complete absence of infrastructures'(such as electricity) and cost of connectivity created barriers to information, making it difficult for people to use ICT services in many Sub-Saharan countries. In Ghana for example, majority of the rural communities have no constant electricity supply as a result the digital villages cannot function effectively (Alemna and Joelm, 2006). In Dhar village in rural India, lack of basic infrastructure such as power supply and poor connectivity has prevented the digital villages from providing effective services (Conroy, 2006).

This paralyzes activities in the villages and prevents people from enjoying the benefits of the ICT projects. Consequently, Caroline, Brenda and David (2006), suggested that availability of infrastructures and other items such as spare parts, hardware, and soft ware's and the irregular supplies in digital villages will help

attain the vision. Thus if Kenya has to realize the vision for the digital villages then there is need for the infrastructure to be maintained in order to keep them functioning and maintain the support and interest of the community.

2.4.2 Political Interests

Public projects are often left uncompleted or delivered to a poor quality (World Bank, 2004). Failure to deliver these projects undermines citizen welfare and leads to an estimated loss of US\$150 billion per year in public resources (World Bank, 2007). The extent of these failures varies within and across countries, driving national and global inequalities (Banerjee et al, 2007). Politicians are normally viewed as critically important agents in the delivery of public projects.

Politicians are elected by citizens to decide public policy, including the delivery of public projects like the digital villages. When faced by high levels of political competition in their constituencies, politicians may be incentivized to improve the quality of potentially vote-winning public projects. Consequently, they may seek to overcome barriers such as bureaucrats' inefficiency, inertia, or corruption.

However existing evidence suggests that political competition has hindered the delivery of public projects like the digital villages in Kenya. This is because politicians are able to influence the bureaucratic arm of government, to satisfy their short-term electoral concerns. Typically, because politicians do not undertake public projects themselves, they work behind the curtains to ensure that only those digital villages in their areas could take off because they can use these as campaign tools to better their political ambitions (Iyer and Mani, 2012).

Still in the Kenyan scenario even though the digital villages were started to aid the people the reason they've not made headway is because most sitting politicians often take up office and instead of improving or finishing the projects started by the previous regime they abandon them for new projects of their own because the thought is who will get the profit or is it the votes. In Kenya politicians are more interested in getting the credit for what they have implemented and in the process most good projects like the digital villages have failed or even stalled.

2.4.3 Literacy Levels/ Capacities and Knowledge

This is an important factor which according to many scholars or researchers influences digital village success. Leaders of digital villages need to have certain level of competency and experiences in order to manage the digital villages effectively and also enable them achieve their objectives. As Hunt (2001) suggests, qualified and well trained leaders, employees, volunteers and skilled technical support should be employed to run the affairs of digital villages. This according to him is because, without well trained leaders and staff, assisting users to use ICT and conducting activities in the centre cannot be possible.

Similarly Benjamin (2000) in his opening remarks at ICT international conference emphasized the importance and need for competent leadership to be engaged in digital villages. He further stated that community projects like digital villages need leaders who are competent, trained and adequate community support in order for them to be successful and sustainable. However this could not be the case in Kenya because the leaders of the digital villages only bought the idea because of what they expected as their returns their knowledge of the digital village notwithstanding. Moreover, it has been argued that in most cases, the success or failure of digital villages is determined by the skills and characteristics of the leaders (Rothschild, 2008).

According to Mphalele and Maisela (2003), and Bahaman et al. (2010), sound management and administrative skills are very crucial to the success of digital villages. While Colle, (2005), asserts that leadership, management quality and flexible leadership, ensures the success and sustainability of digital villages. Abdul Razak (2009) claimed that there is positive correlation between the personality of leaders and digital village success, as they are charged with the responsibility of managing the activities in the

digital villages. Based on available literatures it's therefore important to note that competency of leaders is an important factor that leads to digital village success.

Furthermore it's important to consider the literacy levels of the digital village user in the rural areas. Most people in the rural areas in Kenya are school dropouts, in most cases they've already given up on their lives and the introduction of such a project by the government is deemed of no benefit to them at all. Unless there are awareness seminars to educate the users of the importance of the project and what they'll gain at the end it will be difficult for these villages to make headway even if more money is pumped into them. Managing an ICT centre requires qualified staff, technical staff with know how in the manipulation of computers were to be hired to execute services in these villages. However this was not the case, the entrepreneurs who started these projects also teamed up as the technical staff, this could have contributed largely to their failure to take off because without expertise knowledge in an area service delivery to the customer is limited.

2.4.4 Security

Computer security is the protection of the items you value, called the assets of a computer or computer system. There are many types of assets available in the digital villages, involving hardware, software, data, people, processes, or combinations of these. To determine what to protect, we must first identify what has value and to whom. Electronic appliances in most cases need protection from adverse effects of conditions like power outages. However it's sad to note that the entrepreneurs who rolled out these projects had no security measures to ensure that there were no casualties in case there was such a calamity. This could have affected the implementation of these villages because power outage is a norm in rural Kenya.

Furthermore clinical matters affecting electronic devices like infection of viruses could have set in. Due to the fact that most entrepreneurs who run these villages did not have technical know-how it's quite possible that most of the machines once infected were literally written off rendering them useless and unavailable for use by the customer. In some cases security matters include normal theft, rural areas in Kenya today is occupied by the poor, starting such a centre in the village could make it vulnerable to normal thieves who could steal the electronic appliances to sell and make quick cash, thus hindering the progress of the project.

2.4.5 Financial Resources

Combinations of factors have resulted in the slowed growth of the digital villages' project, a public private partnership initiative that was expected to deepen use of ICT in rural areas in Kenya. The Pasha fund was created to provide seed capital to entrepreneurs interested in setting up businesses in the 210 constituencies. It was presumed that the people would receive funds ranging from Ksh. 850,000 to 2 million (US\$10,000 to \$25,000). They would then set up the business, provide value addition and allow the business to sustain itself with time and repay the loan.

There was a rigorous application exercise and funds allocated to each entrepreneur would be repayable over a three (3) year period. These repayable funds received by the entrepreneurs could be used to finance set-up costs and or upgrading of an existing facility. However the entrepreneurs that received loans from the digital villages revolving kitty to set up the digital villages noted that the project failed to take off as initially expected.

This has been due to many license fees that the centres have to pay as well as the structuring of the loan that entrepreneurs received to start off the digital villages. These included licenses for training, offering connectivity, not understanding that the Centres were social enterprises in nature. Some of these were public services aimed at deepening digital literacy and the digital villages do not generate revenue from all

these services as ICT knowledge is still dismal in the rural areas. There due to these lack of funds some of these villages were retarded and never picked up at all or failed along the way.

2.5 Location of the Digital Village

Bailey and Ngwenyama (2009) in their model of digital village success explained that the location of a digital village plays a very important role in determining their usage, which in turn leads to their success. Also, they argued that the location of a digital village and its operating environment determines the extent with which digital villages' services and facilities are utilized.

Islam and Hassan (2009), in their own part, argued that location of a digital village is very important and therefore, they should be in a place where people frequently visit and where they can easily gain access to.

For instance, studies have shown that one of the reasons why digital village in Thiruvadaur village, a rural community in India was not successful despite all efforts made by the operators, was because it is located far away from the community (Kumar and Best, 2000). This could also be the case in Kenya since even though these villages were set up in the rural areas they were secluded to the areas that were chosen by their entrepreneurs and this could not cater for all the users. According to Scott (2001), Holmes (1999) and Robinson (1998) digital villages should be located in a place known by the community as a stable place such as schools, libraries, museums, and other similar places. This will lead to success, attract more users and minimize the costs on them. Therefore it would have been better if areas like schools would have been chosen as the appropriate location of these villages to make them accessible to the common 'mwananchi'.

2.6 Generic Services

The generic services that are offered by the digital villages are likely to influence its adoption by the host; this should be sensitive to community requirements. The closer the software tools match the needs of the community, the more likely they will be used. The quality and responsiveness of management planning for maintaining suitable levels of products is important as well as the extent to which a digital villages is able to effectively network with other centres in order to share experiences, cross- fertilize ideas and promote joint learning (Harris, 2001). It's important to note here that the digital village failure to take off could have been due to the fact that though these villages were set up in the rural areas the services offered therein were not customized to the community in which they were set up.

Rural Kenya today is comprised of the small scale farmer and the business people; if such a project is setup in their neighbourhood it's in order for the services offered to take care of their needs. These villages should have taken care of the farmers input, soil sampling and how to interpret the results as well as modalities of how to market their produce. This would have served to educate the farmers and thus customized to the needs of the community. However since was not the case they could have been ignored by a larger portion of the population thus causing them to fail?

2.7 Government Bureaucracies

According to world health organization (2010) most countries in the region have not developed national policies, strategies or regulatory frameworks that are necessary for establishing common technical infrastructure, interoperability and standardization protocols. In addition countries also need to address ownership, confidentiality, security of data and quality of information (Kulecho, 2015).

All these bureaucracies when laid up in place interfere with the implementation of any project in a country the digital village project notwithstanding. This is because those who make rules and the procedure of regulation make them in such a way that they are tedious for those affected. Furthermore when tax bodies like Kenya revenue authority (KRA) set in it becomes cumbersome for the entrepreneurs especially if the project is nonprofit making like the digital village one. This could have led to the abandonment of the project all together.

2.8 Lack of Monitoring and Evaluation

According world health organization (2010) the majority of the ICT projects, initiatives, national plans or frameworks implemented so far in the East African region have not been adequately monitored or evaluated. Indeed, comprehensive frameworks for monitoring and evaluation have yet to be developed here in Kenya. The challenge is to ensure the availability of efficient systems for monitoring and evaluation and for sharing of experiences and lessons learnt (world health organization, 2010). Maybe if this is put in place in this country the digital villages will pick up and the hiccups being experienced

3.0 Conclusion

Table 1.1 Correlations between Effect of Implementation Strategy and Successful Implementation of Digital Villages

		Effect of Implementation Strategy	Success of Digital Villages
Effect of Implementation Strategy	Pearson Correlation Sig. (2- tailed) N	1 30	.218 .265 30
Success of Digital Villages	Pearson Correlation Sig. (2-tailed) N	.218 .265 28	1 30

Adopted from Obora *et.al*, 2014

This study depended highly on secondary data adopted from various sources, Table 1.1 was adopted from Obora et al, 2014, from the findings the Pearson correlation coefficient was 0.218, and this implies a very weak positive correlation. The level of significance on the other hand is $0.265 > 0.05$ this implies that there is no significant relationship between effect of implementation strategy used and success of the digital villages.

This means that the strategy adopted by the KICTB towards the implementation of the digital villages in Kenya was not appropriate and hence resulted in the challenges that were experienced by the digital villages at their onset which consequently could have resulted in the failure of the digital villages.

From the data above, it's true that the digital villages in Kenya have not been successful at all. This is because of the very many factors that were inhibiting the implementation of these villages as highlighted in this study. As a result of all these factors this study proposes that the government should come up with a different policy separate from the ICT Policy that would give the digital villages mandate as a stand-alone project.

For starters the government should adopt the digital villages as a public project because they offer social services that should be of interest to the government especially in its quest to deepen ICT literacy in rural areas. Furthermore this policy should protect the villages from the Ministry of Educations (MOE) threats to close them down. This is because the ministry had threatened to close these villages down because they are not accredited to train. It should be clear that what these villages do is not educational training but digital literacy. Also there should be modalities on how to repay the revolving fund loans that were acquired for the operation of the digital villages. This should include accommodative methods to the entrepreneurs as a motivation for them to venture into this project some more.

Moreover there should have been trainings and workshops and seminars on what a digital village is and how it was going to benefit the society or the communities in which they were set up. The managers of this centres as well as the people who gave the services should have been given basic technical knowledge, this could have served to demystify the urban notion and encouraged people in the rural areas to embrace the same.

Finally a baseline study should have been carried out before the start of this project in order to measure the impact. This would have led to the project implementers developing project deliverables which would have served as a guide on how to run the project, maybe this would have helped to propel the project so that it doesn't stall.

References

- Abdul Razak, N, 2009. Empowering Communities via the Tele centres: European Journal of Social Sciences-9: 3.
- Acilar A. (2011). Exploring the Aspects of Digital Divide in Developing Country; Issues in Informing Science & Information Technology; Volume 8, pgs. 231-245.
- Alemna, A.A and Joelm, S. (2006). Critical Issues in Information and Communication Technology for Rural Development: Information Development Journal, 22 (4).
- Atieno, K. V., & Moturi A. C., (2014). Implementation of Digital Village Project in Developing Countries- Case of Kenya, British Journal of Applied Science and Technology 4(5); 793-807.
- Bahaman, A.S., Hassan, M.A., Osman N. and Badsar, M. (2010). A Paper Presented At the International Conference on Sustainable Community Development, in Malaysia.
- Bailey, A. and Ngwenyama, O. (2009). Social Ties, Literacy Location and the Perception of Economic Opportunity: Factors influencing Telecentre Success in a Development Context: Proceedings of the 2nd Hawaii International Conference on System Science.
- Benjamin, P. (2000). *Does 'Telecenter' mean the center is far away? Telecenter development in South Africa and around the world.* The Southern African Journal of Information and Communication.
- Boje, C., & Dragulanescu, N. G. (2003). "Digital divide" in Eastern European countries and its social impact. *Proceedings of the 2003 American Society for Engineering Education Annual Conference & Ex-position.* Retrieved October 9, 2015, from <http://soa.asee.org/paper/conference/paper-view.cfm?id=18355>
- Caroline, I.P., Brenda M., and David, S. (2006). An exploration of the Categories Associated with ICT Project Sustainability in Rural Area of Developing Countries: A Case Study of Dwesa Project, Proceedings of SAICSIT pp: 100- 106.
- Castells, M. (1998). *The information Age 3: End of Millenium*, Blackwell, Oxford.
- Colle, R. (2005). *Memo to Telecenter Planners.* The Electronic Journal of Information Systems in Developing Countries, 21, 1, 1-13.
- Commonwealth policy studies unit (2005). Retrieved 20th August 2015, from http://www.commonwealthadvisorybureau.org/fileadmin/CPSU/documents/Resources/CW_Ideas_Report_2005.pdf
- Conroy, C., (2006). *Telecentre Initiative in Rural India: Failed Fad or the way forward?* Natural Resources Institute, University of Greenwich
- Drury, P. (2011). *Kenya's Pasha Centres: Development ground for digital villages.* Tech. rep., Cisco Internet Business Solutions Group (IBSG). Engagement Overview.
- Friedman, W. H. (2001). The digital divide. *Proceeding of Seventh Americas Conference on Information Systems*, 2081-2086.
- Gichoya, D. (2005). Factors affecting the successful implementation of ICT projects in government. *The Electronic Journal of e-Government*, vol. 3, issue 4, pp. 175-184.
- Hallberg, D., Kulecho, M., Kulecho, A., Okoth, L. (2011). Case studies of Kenyan digital villages with a focus on women and girls *Journal of Language, Technology &*

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- Hansson, H., Mozelius, P., Gaiani, S., & Meegamma, N. (2010). Women Empowerment in Rural Areas through the Usage of Telecentres - A Sri Lankan Case Study. 2010 International Conference on Advances in ICT for Emerging Regions (ICTer), 5-10.
- Hargittai Eszter (2003). *The Digital Divide and what to do about it*. CA Academic Press
- Harris R.W., (2001). Attitudes Towards End-User Computing: A Structural Equation Model, Behaviour and Information Technology, Vol. 18 No. 2. 109-125.
- Hunt, P., 2001. True Stories: Telecentre in Latin America and the Caribbean, the Electronic Journal on Information System in Developing Countries, 4. Retrieved from:
<http://www.is.cityu.edu,hk/ejisdc/vol4.htm>.
- Iskandarani, M. Z. (2008). Effect of information and communication technologies (ICT) on non-industrial countries-digital divide model. *Journal of Computer Science*, 4(4), 315-319.
- Islam, S. and N. Hassan, 2008. Multipurpose Community Telecentres in Bangladesh: Problem and Prospects. *The Electronic Library*, 27(3): 537-553.
- ITU. (2010). *Key ICT indicators, 2005-2010*. Retrieved September 09, 2015, from http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html
- Jensen, M., & Esterhuysen, A. (2001). *The Community Telecenter Cookbook for Africa. Recipes for Self-sustainability, How to Establish a Multi-purpose Community Telecenter in Africa*. United Nations Educational Scientific and Cultural Organization Paris, 2001.
- Kenya Economic Update (2010) – December 2010 Edition No 3, 3-17
- Kenya ICT Board (2010). *Pasha Centers*. Retrieved [08/20/2015] Kenya ICT Board <http://www.ict.go.ke/>.
- Kumar, R. and M. Best, (2000). *Social Impact and Diffusion of Telecentre Use: A Study Group*, Department of Urban Studies and Planning, Massachusetts Institute of Technology, Cambridge.
- Mphahlele, M.E. and E.M. Maisela, (2003). *Critical Success Factors in Telecentre Sustainability: A Case Study of Six Telecentres in the Limpopo Province*. *Communication*, 29(182): 218-232.
- Obora, C. A., Wanyoike, M. D., & Mokaya, O. S. (2014). *Effects of Implementation Strategy on Success of Digital Villages in Kenya*; *European Scientific Journal*, Vol 10.
- Pasha Report, (2011). Retrieved 17th December 2011, from <http://www.scribd.com/TandaaKenya/d/73453205-Julisha-Kenya-ICT-Market-Survey-2011>
- Robinson, J.P., S. Levin, and B. Hak. 1998. "Computer Time." *American Demographics*:18-23.
- Rogers, E., & Shukla, P. (2001). *The role of Telecenters in development communication and the digital divide*. *Journal of Development Communication*, 2, 12, 26-31.
- Rothchild, I. (2006). *Induction, Deduction and the Scientific Method*. *An electric overview of the practice of science*. The Society for the Study of Reproduction, Inc.
- Sciadas, G. (2005). Info states across countries and over time: Conceptualization, modeling, and measurements of the digital divide. *Information Technology for Development*, 11(3), 299-304.
- Suchak, N., & Eisengrein, D. (2008). Bridging the digital divide: Connecting social marketers globally. *Social Marketing Quarterly*, 14(3), 135-138.

- Sunden, S & Wicander, G. (2002). Bridging the digital Divide – ICT Solutions Supporting Economic and Social Development for the Unseen Majority. Retrieved 15th September 2015 from http://humanit.org/pdf/HumanIT2003/HumanIT_2003_Ch1_Sunden_och_Wicander.pdf, 19-27.
- United Nations Development Programme (UNDP). (2013). Promoting ICT for human development in Asia; Realizing the Millennium Development Goals. *Regional Development Report*. Elsevier, India.
- Wilson, E. J. (2004). *The information revolution and developing countries*. Cambridge, MA: MIT Press.
- World Bank. (2010). Harnessing the transformational power of ICTs for development in Africa. Retrieved from <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:22555969~menuPK:258657~pagePK:2865106~piPK:2865128~theSitePK:258644,00.html>
- World Development Report. (2010). The World Bank. Retrieved June 9, 2015, from <http://www.worldbank.org/wdr2010>
- Zaidi, M. (2003). Exploring the depth and breadth of the digital divide in developing countries: The case of Pakistan. *Canadian Association for Information Science (CAIS) 2003 Conference: Bridging the Digital Divide: Equalizing Access to Information and Communication Technologies*, Dalhousie University, Halifax, Nova Scotia, Canada, May 30 - June 1, 2003. Retrieved October 8, 2015, from http://www.cais-acsi.ca/proceedings/2003/zaidi_2003.pdf