

Bridging the Digital Divide through Community User Information Systems: Kitsong Centres

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Abstract: Botswana Technology Centre started a pilot project named Community User information Systems whose main aim is to develop computer communication systems (telecentres) that would enable communities in rural Botswana to have access to integrated email and online information. The centres have been in operation since 2004. An impact assessment survey was carried out in 2009 to find out how much the centres have made in the lives of these communities. This paper therefore seeks to share the results of this impact assessment, lessons learnt and experiences gained from operating these centres as well as recommending new services, future operations models and strategies for an improved benefit of the rural communities. These findings and recommendations can also serve as guidelines to other researcher who are looking at or already bridging the digital divide through use of tele-centres.

Keywords: tele-centres; digital inclusion; ICTs; Rural Communities;

1. Introduction

Information and Communication Technologies (ICTs) remain a critical part of today's life style. Necessary ICT skills are required in order for the communities to keep abreast with today's fast paced life. Like any other competitive country, Botswana is not immune to these new ways of life. In order to ensure that the ICT skills of the communities are enhanced, Botswana government has set up different initiatives to aid the public to enhance their ICT skills. Besides subscribing to the Millennium Development Goals and the development of Botswana's National Vision 2016 other examples of such initiatives include the establishment of the Ministry of Work, Transport and Communication; the National ICT Policy; introduction of ICT Curriculum at different level of education to mention but a few [1].

However, Botswana as a developing country is still faced with some challenges with regards to bringing its citizens aboard on this journey towards using ICT for development [2]. Low levels of adult literacy, low standards of living, low infrastructure developments in rural areas as well as the sparse populations across the country remain a challenge as to how the government and other bodies can out reach to these communities to bring ICT technologies to them [3].

In attempt to combat these challenges Botswana Technology Centre (BOTEC) developed the concept of Community User Information Systems (CUIS) whose main aim was to develop computer communication systems that would enable people living in rural areas to have access to integrated email and online information. In this idea, BOTEC set up three tele-centres in three different rural villages. These areas were chosen based on the fact

that they are in remote locations and are in the centre of other rural settlements in those areas.

1.1 Objectives of the Community User Information Systems

The main objective of these centre as outlined in the Development of the Kitsong Centres Pilot Project in Botswana Report [4] was to develop computer communication systems that would enable people living in rural areas to have access to integrated email and online information, with emphasis on the distribution of locally generated information, for the various aspects of the development of the rural economy. Other specific objectives for the Kitsong Centres included the following:

- To develop an integrated computer communication system, to link the rural communities and information providers – both government and private, to enhance service delivery and save the communities travelling time and costs
- To serve as a marketing tool for products and services in both the rural and urban communities

In 2004 the first 3 Pilot CUIS tele-centres were set up. A brand name – Kitsong Centres, meaning place of knowledge, was given to these centres. This paper shall henceforth refer to these centres as the Kitsong Centres. The services that were then developed for these centres included access to internet, email and locally generated content services as the primary services while secretarial and desktop publishing services are the secondary services. These services were informed by community expression of their information needs during the needs assessment as well as the stakeholder workshops which were conducted in 2003 where the participants expressed the kind of content that they wish to share with the communities [5].

Locally generated content included accessing a web portal that contains information on different issues about the village and government. Such information would include history of the village, different tribes found in the village, features that uniquely distinguish the village, business activities and opportunities that exist in the villages, downloading of government forms that aid socio-economic development. These downloadable forms would include information and application forms for youth grants, documentation of some of the government processes such as company registration, business license renewals, among others. Secretarial and desktop publishing services included typing, photocopying, printing, scanning, laminating, designing of programs and cards.

The pilot phase ended in 2005 when BOTEC was now satisfied that the Kitsong Centre concept was viable [4]. The centres have been in operation ever since then. In 2009 an Impact Assessment Survey was carried out to establish how much impact the centres have had on the lives of the communities. This paper therefore seeks to share results obtained from running the Kitsong Centres Impact Assessment Survey after 5 years of operation. The results include sharing the lessons learnt and experience gained from operating these centres, socio-economic benefits to the communities; attitudes of the communities towards the centres; improvements that can be brought to the centres to enhance the already existing services; how the centres could continue to operate henceforth as well as how the lessons learnt and experiences gained can help other countries doing similar projects.

2. Objectives of the Kitsong Centres Impact Assessment Survey

- Establish the lessons learnt and experience gained from operating these centres
- Establish the socio-economic benefits to the communities
- Establish any attitudes the communities may have developed towards the centres
- Establish any improvements that can be brought to the centres to enhance the already existing services

- Establish how the centres could continue operating sustainably henceforth
- Establish how the lessons learnt and experiences gained can help other countries doing similar projects.

3. Methodology

3.1 Data Collection Process

The Impact Assessment Survey was carried through use of a data collection process. The data collection process was conducted as informally as possible, with the participants being coaxed into talking more rather than less. Although the data collection instrument was prepared beforehand, the process was made easy such that it appeared to be normal conversations to an external observer. The types of questions that were asked in the data collection process were both open ended, close ended and probing questions. The reason why these types of questions were used was so that the discussions remained free and open. For questions that wanted precise answers the participants were asked close-ended questions. Where the interviewer wanted the participant to give more detailed information, participants were asked open-ended and probing questions [6].

3.2 Data Collection Instrument

Only one type of data collection tool was used to collect data from participants. This was a questionnaire. This data collection instrument was divided into two parts: the Participants' Profile Data and the Participants' views on the Kitsong Centre. Participants' Profile Data involved information on the participants' gender, age group, education level, employment status, estimate of how many times the participant had visited the Kitsong Centre as well as the services the participants were looking for.

Participants' views on the Kitsong Centres found out if the services were of benefit to the participants, if the services provided at the centres were adequate enough, what the participants would have done if the Kitsong Centre was not there, if the participants knew of any negative impact on the society that may have been brought by the Kitsong Centre as well as the improvements that the participants would like to see in the centre.

All questions were asked in the form of an interview, where the enumerators were the ones writing the participants' responses. The participants were also asked to provide supporting reasons to their views where necessary. Other support data collection media that were used include still picture cameras [6].

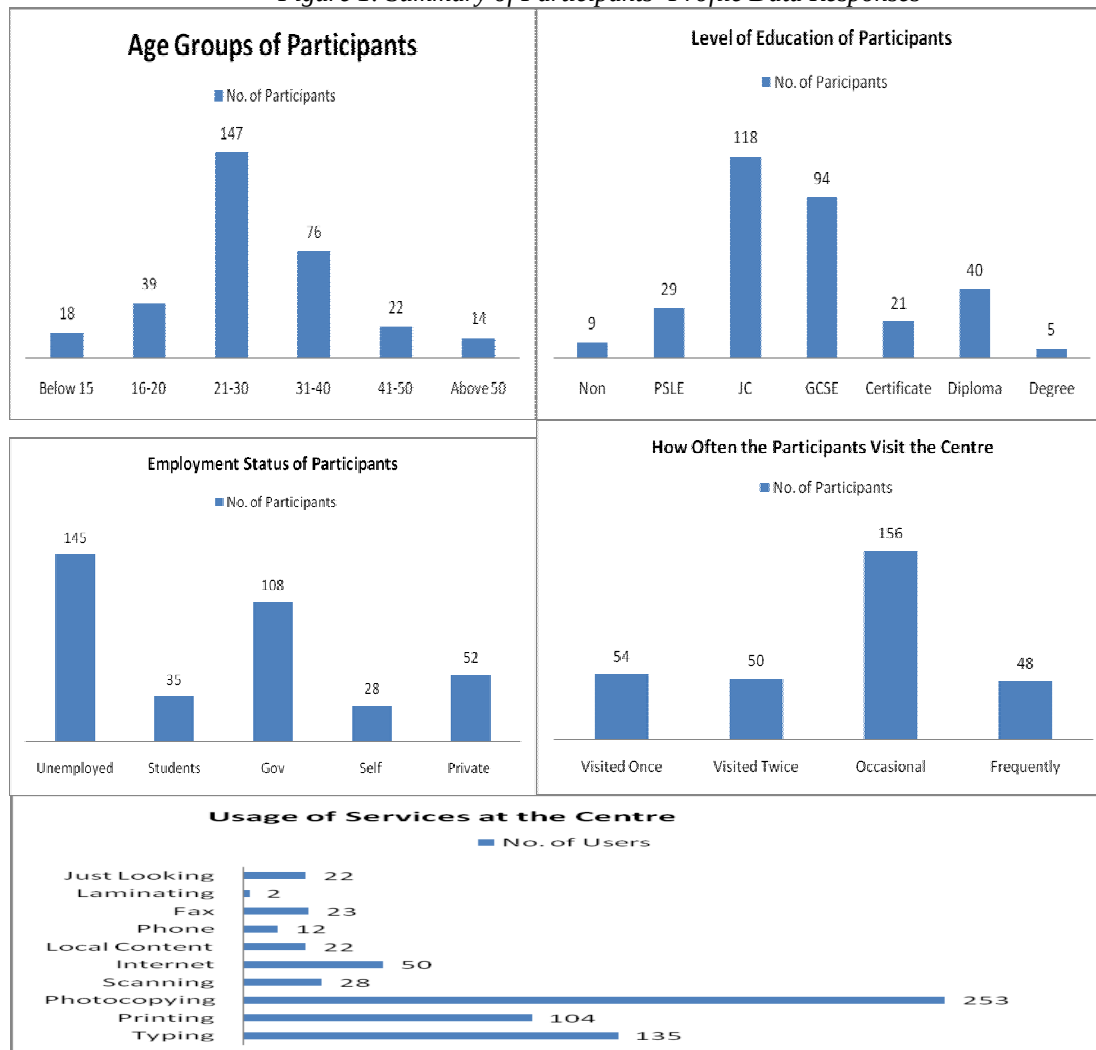
4. Results

4.1 Participants' Profile Data

A **total of 316 participants** took part in the survey, in all the three villages. 152 (48%) of these participants were male while 163 (52%) were females. The following graphs are a summary of the participants' Profile Data Responses:

Most common age group that uses the Kitsong Centres is 21 to 30 years while the least common age group was above 50 years. Most of the participants who took part in the survey had received formal education up to the level of Junior Certificate while least number of participants had degrees and above. Most of the participants were unemployed and were occasional visitors.

Figure 1: Summary of Participants' Profile Data Responses



In terms of usage of services at the centres, the most popular service at the Kitsong Centres turn out to be photocopying followed by typing and printing. Other services such as internet services, scanning, fax and local content were fairly used. The most unpopular services were lamination and phone calls. Figure 2 below illustrates in more detail the highest responses in each age group for different variables of the participants' profile data.

Figure 2: Participants' Profile Data – Highest Responses by Age

Age Group	Total No. of Participants	Highest Level of Education	Employment Status	Frequency of Visit	Most Used Services
Below 16	18	Mostly JC	Students	occasional	Internet, photocopying, typing, printing
16 – 20	39	Mostly JC	Unemployed or Students	occasional	photocopying
21 – 30	147	Mostly GCSE	Unemployed	occasional	Typing, printing, photocopying,
31 – 40	76	JC and Tertiary qualification	Government Employees	occasional	Typing, printing, photocopying,
41 – 50	22	JC and below	Employed or Unemployed	occasional	Typing, printing, photocopying,
>50	14	JC and below	Unemployed	occasional	photocopying,

From the most common age group that uses the Kitsong Centres (21 to 30 years), the age group is mainly made of unemployed GCSE graduates. These users are mostly occasional visitors and they mostly use the centres for typing, printing and photocopying. These services also remain the most common services in all other age groups.

Since the primary services that the Kitsong Centres are meant to provide are Internet Services as well as Locally Generated Content, it is also important to assess how these services have been used separately. Figure 3 below is a summary of how the internet services were used in all the three villages.

Figure 3: Summary of Usages of Internet Services in the Three Centres

Variable	Response
Total No. of Respondents	50; 9 did not manage to access internet 41 people managed to use the internet
Most Common Place	All places
Most Common Age Group	21-40
Most Common Employment Status	Government employees
Most Common Educational Level	Tertiary

From this analysis it was observed that only 50 participants out of 316 had come to use the internet services. This 50 is made of almost equal number of participants from the three villages. This 50 is also made mostly of the two age groups 21 to 30 and 31 to 40 years, most of which are government employees who have received tertiary level education. Most of these users had primarily come to use the centres for typing, printing and photocopying. Out of this 50, 9 could not manage to access internet as it was down. Figure 4 below is a summary of how the locally generated content services were used in all the three villages.

Figure 4: Summary of Usages of Locally Generated Content in the Three Centres

Variable	Response
Total No. of Respondents	22;
Most Common Place	Letlhakeng
Most Common Age Group	21-30
Most Common Employment Status	Government employees
Most Common Educational Level	Tertiary

From this analysis it was observed that only 22 participants out of 316 had come to use the locally generated content services. This 22 is made of mostly of participants from Letlhakeng villages. The 22 is also made mostly of the age group 21 to 30 years, most of which are government employees who have received tertiary level education. Most of these users had come to use the centres for typing, printing and photocopying when they coincidentally found out about the locally generated content service. All the 22 respondents were able to access the local content.

4.3 Participants' Views on the Kitsong Centres

When responding on their views towards the Kitsong Centres, the participants were asked a series of questions which wanted yes or no answers. However, some participants either willingly chose to remain silent to some questions or could not provide yes or no since they were not familiar with what the question was asking.

As follow up to the yes or no questions, participants were also asked to give explanation to justify their choice of answer. The reasons given were then grouped into positive and concerns, where positive reason means the good things the participants were happy with in

the Kitsong Centres while concerns mean those factors that the participants see lacking in the centres. The reasons were further grouped into personnel, geographical location and infrastructure and services offered by the centres. Personnel means those reasons that the participants gave because of their experiences with the personnel at the centres; geographical location and infrastructure are reasons that the participants gave because of how they felt about the location of the centres and the infrastructure at the centres. Services offered are reasons that the participants gave because of how they felt about actual services offered at the centres. Figure 4 below is a summary of participants' views on the Kitsong Centres as well as the reasons given to justify why the participants feel the way they do.

Figure 5: Summary of Participants' Views on the Kitsong Centres

NO	QUESTION	YES	NO	N/A
1	Was the service of benefit to you?	298	5	13
2	Do you think Kitsong Centres have made any negative impact to the culture of this society?	17	287	12
3	Would you consider Kitsong Centres useful?	314	1	1
4	Were all the services you were given adequate?	256	46	14
5	Do you think the services of the Kitsong Centres should be continued?	308	0	8
6	Are you aware of who is running Kitsong?	121	47	148
7	Do you think the current operator is running the Kitsong Centres well?	280	29	7
8	Aware of Locally Generated Content?	63	243	10
9	Have you used it before?	22	49	245
10	Did you find it useful?	22	0	294
11	Are you aware it is accessible for free?	33	104	179
12	Are you happy with current location of the Kitsong Centre?	216	97	3
13	Are you comfortable with the current operating hours at the Kitsong Centre?	209	96	11

14	Are you happy with the current charges at the Kitsong Centre?	Too high - 25 Too low - 5 Just ok - 280 N/A - 6			
15	What would you have done if the Kitsong Centre was not there?	Another town Ask for help from a government office No idea Give up		221 8 43 44	
16	What improvements and new services would you want to see at the centres?	<u>Improvement</u> More computers Increase room size Improve condition Internet Bring more staff	<u>No</u> 85 102 17 77 69	<u>Improvement</u> Hire local residents Find own location Provide info on SMMEs Computer lessons General Information desk	<u>No</u> 3 27 10 49 15

4.4 Patronage

For the past three years, the three centres have had visitors as illustrated in the figure below:

Figure 6: Patronage for the 3 Kitsong Centres over 3 years

Year	Centre	No. of Visitors
2006/2007	Letlhakeng	4411
2007/2008		4326
2008/2009		3901
2006/2007	Hukuntsi	2657
2007/2008		2372
2008/2009		3253
2006/2007	Gumare	1359
2007/2008		1954
2008/2009		2444

Patronage records were kept at each centre where all visitors were asked to register and indicate the services they wanted to use. Through out the years, the centres have experienced fair growth in terms of patronage. Although provision of all services was not consistent through out the years, users kept coming to make use of the available services.

5. Discussions

The study reveals that the age group which frequents the Kitsong Centres more than other age groups is 21-30. This group mainly consists of out-of-school, unemployed youth who have received JC as the highest level of education. They are also mostly occasional visitors who visit the centre to photocopy their certificates to submit for job applications.

The few students who visit these centres come to use the internet to carry out some research, mostly on their own (not as part of class assignment). When asking the teachers about using the services offered at the centres and referring their students to the services of the centres often most teachers were not aware of the existence of the centres as well as the services offered there. Government employees who used the services of the centre claim to use the centres for both official and personal use. They specially use the services of the centre to type, print and photocopy when their equipment at work are faulty. These users also stated that there was no formal agreement between the centres and the government therefore government officers could not officially consider the centres as alternative places to do their official business.

Although the primary services offered at the centres were meant to be internet and access to local content, most users used photocopying, typing and printing services more. This was due to the fact that generally there was lack of awareness and poor marketing of these services. There were also issues of lack of empowerment to use these resources.

On a more positive note, generally the participants claimed that the services offered at the centres were of great benefit to their lives as they helped them save travelling costs to more urban areas where these services have always been restricted to. They also claim that the services provided at these centres are adequate enough for their current needs with a few new requirements of establishing relationships between the centres and the government services and civil society for easy dissemination of information, improved access to services and other government initiatives.

Participants however raised lack of awareness as to who is running the centres. They were not sure if the centres were a privately owned business, a government initiative or a charity organization. This, they claim affects their attitude towards using these centres as they are not sure who to contact when they have enquiries, requests or queries. Some

participants were also sensitive about the location of the centres. They attributed poor usage of the centres to the poor locations of the centres. One centre is located at an office in the village's mail Kgotla (tribal meeting place). Participants claimed that this location was not favourable as it was not within their tradition to casually frequent the traditional meeting place, hence the limited visits to the centres. In another village the participants claimed that the location of the centre was not easily accessible as it was far from the centre of the village. With regard to operating hours, most participants were happy with the current 8 to 5 week days arrangement. However, some students and government employees felt that the time was limited as these operating hours are the same hours which they will still be at school or work; as a result there is limited time for these users to use the centres. They suggested closing time to be later and opening during the weekend. Most users were happy with the current rates charged at the centres.

When asked to suggest new improvements they would like to see added at the centres, the participants suggested that the number of computers in the centres be increased from the current 3 PCs per centre, bigger operating spaces and improved air conditioning. They also suggested that the centres should hire more local residents especially for collecting, updating and verifying local content information. They also asked for more and up to date information on government empowerment initiatives, processes and downloading of forms. Participants also requested that computer lessons should be introduced at the centres.

6. Conclusions

6.1 Conclusions

The following conclusions can be drawn, looking at the responses provided by the participants during the Impact Assessment Survey:

- Existing and new services requirements differ according to age group and level of education of users
- Although the services were customized for the rural communities, other organizations, both public and private would have liked to benefit from the centre especially using the communication facilities to reach out to other places
- Communities preferred to have the centres rendering all the initial services as well as training on how to use the services, despite their lower levels of frequenting the centres
- Communities also prefer to have all services and equipment running and working all the time as slight inconsistencies in provision of the services may spike a whole new negative attitude towards the centres
- Generally communities appreciated the centres and the services they offer despite the fact that they are not fully utilizing the services
- The services which were initially thought to be the primary services were not necessary the highly used services. The reason for this is that the communities claim to not have been trained on how to use the services or there was little marketing of such services
- Personnel working at the centres should be able to understand and adjust to the demands of the users in the rural areas to encourage them to see the centres as real places of knowledge. The personnel should be confident with the services offered in the centre and should show high level of professionalism
- Location where the centre is held should be at a neutral part of the village which is easily accessible and visible to all people.

6.2 Recommendations for Improving Services at the Centre – **Short Term**

- Carry out a complete audit of all equipment, repair and replace as necessary in order to improve infrastructure, services and resources at the Kitsong Centres
- Develop a brand and marketing strategy for the centres
- Look for a more open space area which is easy to access and at a neutral location
- Increasing number of employees at each centre. Involving local communities especially in the development and updating of local content
- Training staff working at the centres, especially book keeping and records management.
- Introducing computing lessons for the customers to empower them

6.3 Recommendations for Improving Services at the Centre – **Long Term**

- For better national roll out, the Kitsong Centres can be transferred to a Strategic Partner who will monitor the macro operations of the centres as well as conduct regular impact assessment while the researcher explore new digital inclusion services that could be added into the centres to bridge the digital divide.
- Collaborations with other stakeholder organizations (public, private and NGO) that would play as potential customers and or partners in the centres could be formally established. With the eGovernment project current going on in Botswana, the Kitsong Centres could be used as a platform for hosting the eGovernment services and access points in the rural areas. The centres could also serve as platforms for other government initiatives such as Brand Botswana, elearning platforms for non-formal education, local information access point, etc.
- With Botswana having adopted the Public Private Partnership Policy, the running of the centres can also be rolled out as PPPs between the government, private investors or local communities. Besides empowering local communities and local investors, this model would tend to attract ownership of the centres as they would be developed by the local communities for the social and economic benefit of these communities. Already existing internet cafes can be invited to take part in these partnerships to avoid Kitsong Centres taking private business out of business with their highly subsidized rates.
- Because sustainability plan was initially not considered at the beginning of this project, it is however, important to consider a viable sustainability plan which will help the centres to generate their own income. Sustainability plans such as eBusiness Models [15] and Village Information Kiosks [16] can be explored and adopted for the Kitsong Centres.

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