

SUCCESS FACTORS OF PUBLIC-FUNDED COMMUNAL COMPUTING AMONG THE URBAN POOR: THE CASE OF CAPE TOWN

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Abstract

A practical way of achieving universal access is through communal computing: the use of shared computing resources. This paper explores the critical success factors for communal computing facilities operating among the urban poor by means of a case study in Cape Town, South Africa. Our research found that some of the factors do not always hold. The major contribution of this paper is that it identifies the need for researchers to re-examine how the different factors affect the success of communal computing in different setups. Another important finding in this paper is that the likelihood of a success for a communal computing facility is enhanced when the facility is “adopted” by an institution which is already established and accepted by the community.

Keywords: Communal computing, urban poor, success factor, South Africa.

1 INTRODUCTION

One of the proposed ways of bridging the digital divide is a setup where the population are accorded access through shared facilities (universal access). These shared facilities, in this paper referred to as “communal computing”, come in different forms including low costs computing such as Simputers and Volkscomputer, telecentres and the like.

Communal computing has not been very successful. Rhodes (2003) notes a number of South African initiatives which are underutilised and failing to be self sustaining. This has led to the realisation that the task of bridging the digital divide involves more than the techno-centric approach of providing the technology to the disadvantaged communities (Roode et al, 2003). In this paper we present factors which several researchers have identified as critical to the success of communal computing and research how these factors affected public-funded telecentres among the urban poor in Cape Town South Africa.

2 BACKGROUND

To appreciate the current distribution of access to ICT among different racial groups in South Africa one has to appreciate that up until 1994 the country had an apartheid policy. Due to the legacy of apartheid, locations which are predominantly non-white still have minimum access to technology. Miller (1999) notes that while 90% of all whites have telephone in their homes, the figure for blacks stands at 10%. Smart Cape (www.smartcape.org.za) is one of the many initiatives which have been undertaken to address this imbalance.

Smart Cape, a project aimed at providing free computer access and internet connectivity to the residents of Cape Town, is an initiative of the Cape Town City Council (Infonomics South Africa, 2003). The access points for the initiative are located in public libraries in the city. To access the facilities one needs to be a member of the library. In order to keep operating costs low, the initiative uses open source software. Each centre has five internet-enabled computers available to the public. At the time of the research the project had established access points in six libraries in the city, of which three were selected for this research namely: Grassy Park, Guguletu, and Brooklyn.

The Guguletu centre serves a largely black community; Grassy Park serves a predominantly coloured community, while Brooklyn serves a community in which many refugees from central Africa reside. While all three centres are within disadvantaged areas, they are also at different levels of development. Guguletu is characterised by extensive informal housing, Grassy Park is mostly formalised low cost high-density housing. The Brooklyn area is characterised by formalised low cost single unit housing.

3 PRIOR RESEARCH

Most literature dealing with the evaluation of communal computing facilities use profitability and self sustainability of the projects as a measure of success (Rhodes, 2003). However, such indicators are only relevant if the initiative is aimed at generating a profit or the funding agency has an intention of discontinuing funding at some stage. There is need, therefore, to establish separate evaluation criteria for initiatives which do not fall in the above described category.

The following lists the key factors which previous researchers claim to contribute to the success of communal computing facilities. Since we are using usage as a measure of success, we are interested only in the factors which directly affect users. As such, business-related factors have been left out.

- § *Local buy-in*: For the success of the project, it is essential to get the backing of the community. This is achieved by getting the community involved in the project from the outset and ensuring the community ownership of the project (Bridges.org, 2002).
- § *Local champion*: A champion is an individual who has influence in the community and commands respect. Having the support of local champion encourages involvement of the other members of the community (Bridges.org, 2002, Ernberg, 1998).
- § *Usefulness and relevance of computing service to community needs*: “The facility should provide services and content that meets the needs of the community” (Ernberg, 1998). To achieve this goal, it is necessary to be continuously researching on the needs of the community.
- § *Location*: The facilities should be located at a place where people visit to do other activities such as shopping. The location should also be easily accessible (Colle, 2004).
- § *Marketing and public awareness*: Advertising and public relations are necessary to promote awareness of the existence of the facility. Colle and Roman (2002) point out that community members must first become aware of the telecentre and its services before they will get involved in it.
- § *Reliability of facilities*: This refers to the frequency and the duration over which the services are unavailable. When the facilities are excessively unavailable users may lose trust in the service and reduce the usage (Bridges.org, 2002).
- § *Staff training and user support*: Gómez et al (2001) point out that “Without training, a community telecentre will be stillborn: operators will not be able to help users, and users will stay away because they don't know what to do with the available technology”. Training should also involve making users aware of how technology can be of use to their lives (Colle, 2004).

4 RESEARCH METHOD

We were interested in the people's opinion of the factors which affect their use of communal computing facilities. We therefore opted for a qualitative approach to our study.

Sample selection: Due to financial limitations, we restricted ourselves to facilities which were operating within reachable distance from our base. For these reasons we settled for initiatives operated by Smart Cape. In selecting the three centres, judgmental sampling process was applied. “In essence, the researcher selects a sample which simply satisfies his specific needs” (Ofo, 94, p.65). The intention was to choose communal computing facilities that were representative of varied communities representing different races, cultures, needs and economic levels.

Data collection methods: At each of the three centres, a single structured interview was conducted with a staff member. Afterwards, a different structured interview was conducted with approximately seven users per centre. The

interviews were recorded and then transcribed into a data collection framework document. The questions for both the staff and the users were mainly aligned with the factors identified in the literature survey. Where it was apparent that data was skewed towards a certain category of users, further user interviews were conducted to ensure the reliability of data. This was the case at Grassy Park as there was a high initial response of scholars and students.

Limitations of method: This research is based on a sample drawn from one city. There is a possibility that the findings are affected by the unique nature of the history and racial dynamics of South Africa. The findings from this research may not therefore reflect the general trends in other cities of the world. In terms of the community members, the research focused only on those who are already using the facilities. Data from members of the community who do not use the facilities may have provided further insight to our investigation.

5 FINDINGS

This section concentrates on those findings which contradict earlier statements found in the literature. The full set of findings can be obtained from the researchers.

There were also some issues identified which could not be classified under the headings. The key success factor identified was usefulness expressed as using the computers for typing up CV's and applying for jobs. This is due to the high unemployment rate in underprivileged communities all over South Africa. The biggest negative factor expressed by both user and staff is that the Internet at each site is too slow, followed by the fact that learning how to use Linux based system is difficult. It was also evident that, although capacity is insufficient; users still use the facility as there is nowhere else in the community where these services are offered free of charge.

5.1 Local Buy-in and Local Champion

Although the implementers of the project did not try hard to achieve local buy-in, it is interesting to note that this does not seem to play a role. A reason for this contradiction could be that the centres are set up in local libraries, which already had the support of the respective communities. Starting up a centre within an operational community organization such as a library, using existing staff members to run the centre, seems to be a huge benefit. People are familiar with the organisation and its staff and therefore the initial barrier, of adapting to new surroundings and new people is eliminated. The centre is seen as an extension of this existing system to expand the knowledge resources to include those offered by ICTs and people may therefore view the centre as additional resources to use within the library, not a foreign resource at an unknown location, with unknown staff.

5.2 Location

The findings confirmed the literature in that communal computing centres need to be positioned centrally in the community, lie on routes that are well serviced by public transport networks and/or be "located in or near places where people already tend to come together" (Bridges.org, 2002). An interesting observation was that the libraries are not within apparent retail or commercial areas. This means that users wishing to access the computer facilities are required to commute to the library specifically, rather than include it in their regular errands. It can be concluded, therefore, that these neighbouring services need not be retail or commercial.

Two responses emerged that were of interest. One Guguletu (predominantly black community) respondent focused on the importance of the sociable aspect of the location of the library, favouring the presence of numerous people. In contrast, two Grassy Park (predominantly coloured community) respondents noted that they felt their safety was compromised when visiting the centre because of the high volume of people using the adjacent taxi rank.

5.3 Computing Capacity and Reliability of Facilities

An evaluation of the Smart Cape Access Project noted that capacity was one of the bottlenecks of the project (Infonomics South Africa 2003). It was hypothesised that a centre with a smaller capacity will be less appealing to users and so will be less successful. The results support this proposition as both users and staff (except the Brooklyn centre) feel that there are insufficient computers at the respective centres and that usage would increase if there were a greater number of computers. We found that, although capacity correlates positively to the success of a communal

computing centre, this does not seem to be a dominant determining factor as users are still willing to wait for the service rather than go elsewhere and be required to pay

Similarly, it was observed that most users wait for computers to become available or return later when “the system is down” simply because they cannot find this free service anywhere else. This suggests that reliability is not as important to users as the price of the service. It can also be concluded that reliability is not affecting long term perceptions of the centre since most users come back to the centre. However, if there was another facility nearby offering free services, the competition would force the centre to pay closer attention to the reliability of its systems.

5.4 Pricing and Affordability

The intention with this determining factor was to obtain some measure of the elasticity of demand with respect to price. Many development organisations believe demand for ICT access to be almost perfectly elastic at a zero price. At Grassy Park, one user claimed that “The true cost of charging for this service would be suffered by the government in the total loss of usage, and wastage of these computer resources because people will stop using the facility completely as they cannot afford to pay”.

Contrary to this prevalent view, the finding of this research was that users, even the urban, felt that the service warranted a substantial “fair price”. Admittedly, it is difficult for people to attach a price to something they have always received for free, but most still felt that the service was worth a monetary value. An important observation was that this “fair price” correlates with the general income level of the community. This correlation poses an important question regarding the use of ICTs in development. Is the value lower in more disadvantaged communities because these people have less money available for expenditure on ICT access, or is it because ICT realistically presents negligible value in the struggle to put bread on the table?

6 CONCLUSION AND LESSONS LEARNT

This research has noted that some of the general factors identified in the research as necessary to the success of communal computing are also relevant to centres operating among the urban poor. However, it has also been shown that some of the factors do not have much relevance. It can be said therefore that there may not be universal rules which would work in all kinds of communal computing facilities. There is need, therefore, for further research to identify how different factors affect communal computing in different setups.

The three findings which differed most from the expectations based on the literature survey were the following. Firstly, establishing communal computing in a well established public institution may be beneficial. As in this particular case, it was noted that operating from a public library helped in creating exposure for the centre. The library acted as a local champion and made it possible for the community to buy-in the centre. Similar success stories have been recorded where telecentres have been located in Post Offices (UNDP in Afghanistan, 2003). However, care must be taken when deciding on which institution a communal computing centre wants to pair with. Some locations may not be conducive to certain categories of the community based on gender or religious beliefs (Colle and Roman, 2002).

Secondly, it was found that the urban poor have enormous demand for information and computing facilities which is not adequately met (Shilderman, 2002). A contributing factor to this high demand for ICT could arise from the fact that the urban poor are probably more exposed to technology than their rural counterparts. Finally, it was found that the predominant culture and differences in economic level did not impact significantly on the importance of most of the critical success factors.

References

[References omitted due to space restrictions. However, the references are available on simple request from the authors.]