Abstract

Despite development and improved availability of Information & Communication Technologies, there is growing evidence of a “digital divide”. Together with other factors, this causes strains in communities, which have a detrimental impact on the well-being of community members. The mobile phone has become the primary form of telecommunication in South Africa, especially among young people. MIM is a relatively cheap method of communication using mobile telephones, which is asynchronous in nature, which allows users to multitask, and to take part in more than one conversation at a time. In this paper we explore the use of a particular MIM service, MXit, to offer advice and support to young people struggling with problems associated with substance abuse. The research focuses on a case study carried out in the Cape Flats.

The case study was based on a substance abuse counselling project known as Drug Advice Support (DAS). Data was collected through semi-structured interviews with DAS advisors, and analysis of the latest statistics of the DAS on MXit project. The interviews were conducted at the Impact Direct Centre and using the MXit platform over the period 13-27 April 2009.

For the advisors the system was found to be easy to use. The advisors had little formal education, yet they were able to learn the technology quickly and hold many asynchronous conversations thereby demonstrating personal empowerment. The service was successful, which can be attributed to three main factors: the extensive use of MIM by young people in the region, the low cost of the service, and the anonymity of the subscriber. Other factors include the widespread use of the technology, especially among the youth, and the relative low cost of using the MXit platform.

Keywords: Mobile Instant Messaging, mobile technology, Community in Tension, drug rehabilitation

1 Introduction

The availability of Information Communication Technologies (ICTs) in the last thirty years has led to large distribution channels of information and knowledge, particularly through the growth of the World Wide Web. ICTs impact on a number of sectors, including education, government, development, business, and entertainment. The increasing growth of traditional ICTs has led to a digital divide, not only between rich and poor nations, but also within communities (Arunachalam, 2002).

Following Bhatia’s report from the World Bank in 2008, that ICTs can create opportunities for deprived communities, and that there is need for research into the use of mobile technology in South Africa, this article describes how mobile technology in the form of Mobile instant Messaging (MIM) has been developed and used in a deprived area of the Western Cape to tackle drug and alcohol
addiction. The article is divided into seven sections: It sets out the aims of the research, and gives an overview of the technology and the geographical area where the research was conducted. The paper then presents the research methodology, the research findings and a discussion of the topic.

2 The Research aims and objectives

The aim of our research was to investigate how mobile technology could be used to relieve tension in a community, with specific reference to the issue of substance abuse in the Athlone area of Cape Town, South Africa.

The objectives of this research were to use and evaluate MIM as a medium for advice and support to people impacted by substance abuse. The research aimed to

1. Develop a way that MIM can be used to address substance abuse in the Western Cape through the development of a Drug Advisory help line and

2. Empower ex-drug addicts by the use of mobile technology to assist in the project and enable them to develop computer literacy skills.

3 Technological background

The growing use of mobile technology has increased access to the internet for many people disconnected from mainstream access points. The unprecedented growth of affordability and coverage of mobile telephony services in South Africa means that the mobile phone is now more accessible than the land line telephone (Bhatia, 2008). A paper by Bosch (2008) reports that while there is plenty of research on the use of mobile technology on communities in Europe, Asia and North America, there is little in the South African context, with even less on young South Africans even though the adoption of mobile technology in South Africa has been high with over 40 million mobile phone subscribers, (Classen, 2008).

Bhatia (2008) takes an optimistic view of ICT as a vehicle capable of creating new economic, social, political and educational opportunities for developing nations, and claims that they could be crucial for empowerment and development of communities. Mobile technology is constantly evolving. Its use is popular and it allows users to remain in contact with their communities. One particular form of mobile technology is Mobile Instant Messaging (MIM), which allows users to send texts instantly and make the user feel as if it is “real time”. It also prompts the user if anyone in their contact list is currently available on air. It has been proven that the use of MIM in a social and educational context is popular among young people and students in South Africa (Dourando., 2007, Francke & Weideman, 2007). This creates an opportunity to address social issues by reaching South African youths on a platform with which they are comfortable.
3.1 Mobile technology

Mobile technology comprises a wide variety of devices, technologies and software including mobile terminals, Personal Digital Assistants (PDAs), mobile phones, laptops, PCs, broadband access provision, mobile telephone infrastructure, private and public wireless networks (hotspots) (Mikleia, 2006; Paulsen, 2003). The technology continues to advance rapidly as investment; improvement and innovation occur (Paulsen, 2003). When using mobile technology as a medium of communication or learning, Attawell (2005) suggests these technologies needs to be taken into account:

2. Data delivery media: WAP, E-mail, SMS, MMS, HTTP.
4. Data formats: video, audio files, voice calls, teleconferencing, video conferencing, TV broadcast.

Mobile technology is being used by more people due to an increase in its popularity, availability and – most importantly – affordability (Paulsen, 2003). However initial set up costs are a major factor and any party wishing to institute mobile technology has to be financially able to implement and maintain it (Bates & Poole, 2003). A critique by, Paulsen (2003) points out that mobile technology will remain more expensive than stationary technology; therefore organizations may find themselves maintaining two services, the general service and the mobile service. It is important that where possible technology is produced as in this project in house or supplied by open source agreements.

Studies have also shown that many people own and use two or more mobile devices (Sharples, 2005). Students beginning university are already aware of, and using, mobile technology, according to Dourando (2007), and today’s users are “digitally literate, mobile orientated technology aware, part of the on-line community and always connected.” Mobile technology provides easy access to communication between people and, because of the instant answers and mobility, it allows for collaborative discussions (Paulsen, 2003).

Mobile technologies, such as text communication and more specifically MIM, are now not only being used as a communication tool, but also as a medium of communication (Adesemowo & Tucker, 2005). A study by the Morris Library, at Southern Illinois University Carbondale, tested the difference in service/requests/orders between their remote users and their in-house users. They found that all the remote users received the same difference as their traditional reference desk, the only important difference being the delivery medium that was used. As a result, Morris Library decided to provide the same standard and services on their virtual reference desk as the physical one (Graves & Desai, 2006). This is an example of mobile technology not merely being a tool but a medium of communication.
Mobile technology has significantly advanced in performance, users, connectivity, purpose and communication. Due to the ease of adoption of mobile phones in South Africa in developing communities (Bosch, 2008), and its popularity among young people, it presents itself as the ideal technology to be used as an enabler for community empowerment.

3.2 Mobile Instant Messaging

Instant Messaging (IM) enables near real-time communication between two or more individuals across the internet using a browser-like window. Originally this was just text, but it now includes multimedia. This technology has been embraced by the information age younger generation (Farmer, 2003), far exceeding the use of email for communication. MIM takes this further and offers the same functionality as IM but on wireless devices such as PDAs and mobile phones. Users create a contact list of people who they intend to text (Weller, 2002). It allows friends and colleagues to text in real-time and is becoming a widely used communications tool, especially among the young (Dourando, 2007).

MIM is an asynchronous communications tool and medium that allows people to text others around the world in real time; delivery of messages is instant and affordable, on wireless, handheld and desktop devices via the internet. (Bosch, 2008; Durand, 2007).

As with any communication tool, there are some benefits and some drawbacks. Framer (2003) has categorised these into the good, the bad and the ugly. What Framer calls good, is the ability to text when connected to the internet; which is positive in overcoming shyness and can also be anonymous. The bad is the receipt of unsolicited communications, and the unwitting divulgence of personal information in your profile (that can be seen by other MIM users). The ugly side can be vulnerability to computer viruses, talking to people you have never met, and target of gossip and bullying. Many of the criticisms levelled at IM are now levelled at MIM, such as its possible use for cyber-bullying, addiction (time-wasting), and the use of unregulated chat rooms (Bosch, 2008).

MIM is competing against several other media. In comparison with natural human conversation, MIM is limited as it is merely words, symbols or emoticons (symbols which signify emotions), whereas natural human conversation is interactive, containing interactive elements such as intonation, pitch, gesture, facial expression (Adesemowo & Tucker, 2005). MIM versus IM is also limited as the mobile device has a small screen layout size and input capability. Lastly, the interworking of MIM with other IM services – IM interoperability – is another drawback because the success of an IM service is based on the number of users subscribed to it. Currently, IM is not built to open standards, and users of different protocols cannot communicate. The only solution is for IM providers to open their systems (Vogiazou, 2002).
3.3 MXit

MXit is a MIM System that was created in South Africa and launched there in 2005. According to the MXit website (see www.MXitlifestyle.com), it is a MIM application that allows instant online text and data exchange between MXit users, as well as with Windows Live Messenger, Jabber, AIM, Google Talk on their mobile device. The application uses Java software and can be installed and run on most GPRS/3G enabled mobile phones at no cost. However, data sent is billed by the Service Provider (Dourando 2007). The cost of the data is 1 cent per message in comparison with an SMS rate between 35 cents and 80 cents, and this inexpensive method of communication has attracted 20 million users in South Africa, mainly between the ages of 12 and 25 (MXit Lifestyle, 2009). It is reported that students enjoyed the convenience, the low cost, and being able to arrange events. (Francke & Weideman, 2007). MXit like any other communication device is open to misuse as reported by the MXit Addicts report (2008). However, Francke and Weideman (2007), explain the vulnerability of some children and adults on MXit to a lack of meaningful relationships in their lives, which they have replaced with MIM.

4 Community in Tension

Communities can be described as “coherent areas of social existence identified by a sense of locality and community sentiment” (Day, 1999). The evolution of the World Wide Web and mobile technologies has led to the development of virtual communities. Parker and Pereira (2008) refine Day’s definition by describing a community as a “social existence that shares a common thread, ownership or participation.” Within communities there are various factors that influence their stability.

The increase of gang and drug activity on the Cape Flats in the Western Cape is a cause for concern (Plüddermann et al., 2007). Such activities have a negative impact on citizens in these communities and contribute to a sense of helplessness, especially among young people (Harker, 2008). This is called a Community in Tension (Cit.), where the well-being of its citizens is under threat.

According to Parker and Pereira (2008) causes of tension in communities include

- Lack of economic development, (characterised by unemployment, inflation)
- Social inequality (e.g. lack of social services, social issues such as drug abuse)
- Lack of education
- Lack of appropriateness and use of technology (e.g. technology not being used fully within communities for its intended use). (See Figure 1).
These factors causes tension to emerge and this tension becomes the underlying aspect forming a community, for example, a community plagued with drug and gang activities would appear to have tension among all its citizens, due to these activities having a negative impact on the community; leaving a sense of helplessness in combating drug and gang activities among the youth. In the Athlone community in Cape Town, social inequality caused tension and put the well-being of citizens at risk.

5 The Research Methodology.

The methodology to investigate how MIM could address the substance abuse problem in in Athlone, Cape Town was the development of a help line as a pilot case study, providing drug counsellors to advise and support anonymous users via MXit, with a follow up of qualitative analysis of the latest statistics in the Drug Advisory Service (DAS), database. The DAS project was hosted and produced by a local community-based organisation in Athlone Cape Town, and was launched in July 2008. The service was available to the public on a Tuesday and Thursday, between 3 pm and 5 pm. People who needed assistance added the DAS MXit contact to their mobile phones to access the service. The DAS on MXit project is a first point of contact for drug or social queries or advice. Subscribers remain anonymous until a need arises for them to have face-to-face contact at a counselling centre.

The second research aim, to contribute to existing substance abuse advice and support was measured through semi-structured interviews with DAS advisors. Five subjects, reconstructed drug addicts who
have been equipped to offer advice and support at the Centre and on the DAS, were asked the following questions of their work with the DAS project:

a) What were their objectives as Advisors on the helpline?

b) How did MIM counselling differ from face to face interviewing?

c) How did they find the technology?

d) How was the Interoperability/Connectivity?

e) What was the community response?

f) How successful was the project;

g) What were the challenges of the project and

h) What was the room for growth?

The interviews were conducted at the Impact Direct Centre over the period 13-27 April 2009.
6 The Research Findings

From its inception to 31 July 2009, DAS has resulted in 30,685 conversations and 746,440 messages during 250 hours of being online. Currently, the project has 19 support advisors who, on average, deal with 24 conversations in a 2 hour session. The maximum number of people assisted in a session by an advisor was 56. The average number of conversations during a session is 122, with 457 being the maximum number achieved. The most messages exchanged during a DAS session was 3,678 and with an average of 1,422 messages. Drug-related queries using DAS were 61.8% (18,963) of the total number of conversations. The most frequent request for support was regarding crystal meth (called tik locally) (6,637), followed by general conversations about drugs (4,674), and heroin (3,223). Figure 2 shows the breakdown of substance abuse related conversations by type of drug.

Other social issues that emerged from the data were pregnancy (174), relationship issues (2,197), education and career advice (470), suicide (207), depression (421), employment (609), abuse (334), sickness (19), HIV/AIDS (98), sex (217), rape (28), religion (1,261), and general conversations (5,687).

7 Research Discussion

DAS proved popular with youth in the Athlone area. Since the inception of this service, more than 9,000 people have subscribed, via MXit to DAS and already more than 30,000 conversations have taken place. In a DAS session, the advisors handle between 30 and 50 conversations at a time. People using this service are not only based in Cape Town, but as far distant as Polokwane (1500 km), Pretoria (1300 km), Eastern Cape (900 km), and many other parts of South Africa. The sheer volume
of respondents confirms the fact, established in the literature review, that mobile technology is being used by young people as a medium for communication. The project advisors (who are ex-addicts themselves) are empowered, having been exposed to technology, as well as being equipped to man the helpline. Their learning was demonstrated by their responses to the semi structured interviews and their long term vision for the Athlone MXit project. (See Table 1A below). The findings from the semi structured interviews prompted the following discussions.

<table>
<thead>
<tr>
<th>Advisor’s objectives</th>
<th>Four responses</th>
<th>Three responses</th>
<th>Two responses</th>
<th>one response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug advice and support</td>
<td>People remain anonymous; Lack of body language</td>
<td>people are more open with MIM</td>
<td>people express themselves better on a one to one</td>
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<tr>
<td>positive use of MXit Spiritual Counselling</td>
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<tr>
<th>MIM vs. Face-to-Face</th>
<th>Four responses</th>
<th>Three responses</th>
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<tr>
<td>People remain anonymous; Lack of body language</td>
<td>people are more open with MIM</td>
<td>people express themselves better on a one to one</td>
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<tr>
<td>empowering others</td>
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<thead>
<tr>
<th>Technology/Usability</th>
<th>Four responses</th>
<th>Three responses</th>
<th>Two responses</th>
<th>one response</th>
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<tr>
<td>ease of use, exciting</td>
<td>Loss of connectivity sometimes Contact not receiving MXit</td>
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<tr>
<th>Interoperability/Connectivity</th>
<th>Four responses</th>
<th>Three responses</th>
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<th>one response</th>
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<tr>
<td>Network slow</td>
<td>People like the fact that no one is judging them getting queries unrelated to drugs the dangers of dagga new people joining</td>
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<tr>
<th>Community Response</th>
<th>Four responses</th>
<th>Three responses</th>
<th>Two responses</th>
<th>one response</th>
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<tbody>
<tr>
<td>Counselling spiritual reach People more open Reaching out to other areas of South Africa</td>
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<tr>
<th>Success</th>
<th>Four responses</th>
<th>Three responses</th>
<th>Two responses</th>
<th>one response</th>
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<tbody>
<tr>
<td>Unsure if people are genuine Too few advisors - more from a drug background Limited time of service - not at night How to monitor follow up conversations</td>
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<tr>
<th>Challenges</th>
<th>Four responses</th>
<th>Three responses</th>
<th>Two responses</th>
<th>one response</th>
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<tr>
<td>Lack of resources</td>
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<tr>
<th>Room for Growth/Improvement</th>
<th>Four responses</th>
<th>Three responses</th>
<th>Two responses</th>
<th>one response</th>
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</thead>
<tbody>
<tr>
<td>Lack of resources</td>
<td>Believes the service can be improved Ability to expand into social areas HIV Service has potential to grow in Africa</td>
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Table 1A Summary of the interviews with the Advisors from the helpline.
7.1 Mobile Instant Messaging vs. Face-to-Face Communication for counselling
When looking at the comparison of MIM and face-to-face communication, one of the disadvantages is the limitation of MIM when compared with normal human interaction. MIM lacks the interactive elements such as intonation, pitch, gesture and facial expression. Three interviewees raised this issue, one in particular pointing out that the lack of facial expression means one does not know how genuine the subscriber is. In contrast, the limitation of not being able to see the person being assisted, contributed to the subscribers being more open due to their anonymity.

The population at large not only use mobile technology, but view it as a method of communication. Teenagers in particular are being transparent about personal issues. This means that MIM presents another form of communication for the subscribers and they feel more comfortable opening up and sharing their troubles through this medium due to anonymity. This is supported by the evidence found in the interviews that, though it is a drug advice support service, many people are contacting them for various reasons beyond just drug advice.

7.2 Use of the technology
Although the advisors found the technology frustrating at first, due to their limitation of being able to express themselves, all advisors now find the technology exciting and easy to use. Again, the growth of MXit in South Africa, since its launch in 2005 to 14 million users, indicates that people are familiar with both the technology and using the MXit system. A negative aspect that has been observed in the interviews is one of interoperability, where the connection between Jabber and MXit is not always smooth and it seems that advisors cannot always see the status of messages, and messages can be lost between the two services. This is a limitation of current MIM technologies, because various systems use incompatible protocols and standards.

7.3 Project success from the counsellors’ viewpoint
All five advisors reported that the response to the service was good, that the service is continually growing numerically, and stretched beyond provincial boundaries. People are open and transparent in sharing situations that are not related to drugs. People are also being referred by friends and relatives.

7.4 Challenges and needs of the project
According to the advisors, they require more resources, in terms of computers and internet access, since the service is limited and can only run for 4 hours a week. They are expanding the service to include more advisors with various backgrounds in order to improve service delivery. They all believe that the DAS service can be improved.
The feedback from the community, media, and other organizations, indicates that there is a clear need for more initiatives of this type and studies in the use of mobile technology for counselling purposes. More tests can be conducted, in terms of the reported counselling conversations, to determine the needs of the subscribers, to what extent they are informational or counselling requests, and how many queries unrelated to substance abuse are being received.

One question we posed was whether MIM is able to contribute to relieving tension in a community by addressing substance abuse issues in Cape Town. The research conducted and subsequent findings indicate two areas in which MIM is affecting substance abuse.

The first area where the impact of MIM use is affecting substance abuse can be seen in the response of the subscribers to the ‘DAS on MXit’ service. Reasons for the high response rate include: the affordability of the service, it is an alternative medium of communication, its anonymity and the popularity of MIM especially by teenagers.

Second, it is successful because of the openness of the subscribers and willingness to receive help and advice. This is due to the anonymous nature of MIM, which is less threatening than face-to-face contact. Once counsellors have established a subscriber’s needs and trust, they would then recommend users to visit the Centre or a drug rehabilitation centre.

The other area that is being impacted through MIM use is the counsellors themselves. Being ex-drug addicts, they are now learning through this project and using technology, thereby empowering themselves.

This research has shown that MIM is impacting the substance abuse concern, through being a tool that counsellors can use in their support, which in turn empowers them too as former drug addicts. MIM is the preferred method of communication for young people, especially those who contact the service for help or advice for their addiction, due to the ease of use and anonymity.

9 Conclusions

ICT is becoming widespread in many areas of our society, yet a digital divide still exists. Communities are in tension due to a lack of economic development, social inequality, low education, and an inability to use technology. One of the biggest causes of tension in the Cape Flats is that of drug abuse. Analysing a CIT and identifying its common tension thread can assist in finding methods that could be used to stabilise a community. The appropriation and use of technology to educate, empower citizens, create wealth, and develop the economy, in a CiT, could contribute towards the stability of such a community.
Young people have been much maligned for wasting time communicating with their friends using MIM. However, in this paper we have shown that the same methods of communication can also be used to offer our youth advice and support, through a drug and alcohol help line. The anonymity of the service was a major factor in its success. People requesting advice and support could first establish trust with the advisors, before revealing details about themselves. Other factors include the widespread use of the technology, especially among the youth, and the relative low cost of using the MXit platform.

The system is also relatively easy to use for the advisors. The advisors are themselves ex-drug addicts with little formal education, yet they were able to learn the technology quickly and hold many asynchronous conversations in a single advice session. They also demonstrated personal empowerment by being about to analyse the help line and being able to run it themselves. This research has shown that MIM as a tool is impacting the way that advisors present their advice and support for the substance abuse concerns of our young people.

10 References


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## Appendix A Transcripts of Semi Structured interviews

<table>
<thead>
<tr>
<th>Questions</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisor’s objectives</td>
<td>Advisor1: Drug advice and support</td>
</tr>
<tr>
<td>MIM vs. Face-to-Face</td>
<td>Advisor1: People remain anonymous so easier for them to open up</td>
</tr>
<tr>
<td>Technology/Usability</td>
<td>Advisor1: Exciting and easy to use though initially frustrating; negative: no facial expressions</td>
</tr>
<tr>
<td>Interoperability/Connectivity</td>
<td>Advisor1: Contact seems online but not receiving MXit messages; network slow at times</td>
</tr>
<tr>
<td>Community Response</td>
<td>Advisor1: New people constantly joining. Main questions: the dangers of dagga/tik.</td>
</tr>
<tr>
<td>Success</td>
<td>Advisor1: Counselling, spiritual reach, shy people more open on MXit</td>
</tr>
<tr>
<td>Challenges</td>
<td>Advisor1: Unsure if people are genuine</td>
</tr>
<tr>
<td>Room for Growth/Improvement</td>
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