

## CHAPTER 6

### ANALYSIS OF THE RESULTS

The role of the Internet as a source for information in development has already been discussed in chapters 1 and 3. Chapters 4 and 5 provided primary information on the state and usage of the Internet in developing countries. This chapter synthesises the findings that researcher obtained from analysing list contributions, the case study and the literature review so as to provide comprehensive answers to each research question.

The chapter is divided into three sections. Section A deals analyses the findings that fulfil objective one – which is to determine whether or not existing technical, educational and socio-economic resources and infrastructure will enable the Internet to be used as an information resource in developing countries. The findings that the researcher analyses in this section were derived mainly from a content analysis of what she found on the three selected atelectronic discussion lists.

Section B deals with objective two, which is “to establish the degree of usability of the WWW as an information resource in Botswana and other developing countries”. In this section researcher analyses responses obtained from the case study.

In Section C, the researcher integrates the findings she obtained from both Sections A and B with what she found in the literature review – and she then draws relevant conclusions.

**6.1 Section A. Objective 1: To determine whether the existing technical, educational and socio-economic resources and infrastructure will enable the Internet to be used as an information resource in developing countries**

*6.1.1 What are the prevailing environmental conditions that encourage or discourage Internet connectivity?*

Contributions from the three e-mail discussion lists, AFTI-DEV, DFID, and GK, consistently described the Internet environment in developing countries as chaotic, haphazard, poorly maintained, inconsistent and unreliable. They identified the following hindrances or barriers to Internet access: poor infrastructure, limited finances, social inequalities, a shortage of human resources, and the absence of authoritative guiding policies. Although contributors to the three lists raised varied sub-issues within each of the broad categories, there was general agreement among contributors about the broader areas of concern as they have been listed here.

Contributors to the lists also universally confirm that the Internet had an enormous potential for use in education – particularly in on-line education. The contributors noted that this potential was being generally neglected (for various reasons) in

developing countries. There seem to be a general consensus of opinion that if quality on-line computer education were embraced as an option, developing countries might save an enormous amount of money on education in the national budget.

It was noted that the almost limitless potential of the Internet for social, educational, economic and personal improvement and enrichment is not being realised in developing countries for all kinds of reasons. These reasons have already been variously analysed earlier in this text. It would appear that – except for countries in the Far East and South America – governments have largely paid lip service to their commitment to participating in the information society but that they not taken action to eliminate non-access to the Internet and computer-related technologies with as much vigour as they might. Most countries (and countries in Africa in particular) still need to deregulate the telecommunications industry. They also urgently need to formulate information policies that will provide a framework for efficient, widespread and cost-effective use of the Internet. The conditions in most developing countries are sadly not conducive to the widespread, cheap and effective use of the Internet by the majority of citizens.

One wonders why development agencies are calling for widespread usage of the Internet (UNDP, (1999))– as though it would be a panacea for all development issues. Certainly, widespread access by ordinary people to the Internet could eliminate many of the disadvantages and deficits experienced by people in the erstwhile colonised Third World. But how can development agencies recommend widespread usage of

Internet when they must be as aware as anyone else that the necessary infrastructure for such widespread usage *simply does not yet exist*. Before computer technologies, and the Internet in particular, can be used to assist Third World countries to overcome their problems and deficiencies, the necessary infrastructure and deregulation need to be firmly in place.

One wonders about the sincerity when apparently well-meaning people and organisations, throughout the world call for access to the Internet as a development catalyst (UNDP, (1999) Onyango (2000) Kgengwenyane (2000)), as though such access does not go hand-in-hand with the social, educational and political development<sup>x</sup> and the development and maintenance of that infrastructure on which computer technology depends. There seems to be a general belief among many apparently well-intentioned developers that the potential inherent in the Internet will help developing countries to “leap frog” their historical deficiencies so that they will be enabled to reach the same levels of development that have been achieved by developed countries. This literature review has clearly shown (Ngwainambi, (2000), Ochieng 2000,<sup>x</sup> Heeks(1999)) that the environmental contexts and conditions in most developing nations are not yet conducive to widespread usage of the internet, – and that nearly all developing countries still suffer from disabling deficiencies, scarcities and shortfalls in numerous areas of development. The socio-economic, educational and political needs of developing countries are as diverse and complex (and often as intractable) as are their information needs. When certain necessary conditions for development and stability do not prevail in a developing country, would mere access to the Internet by



large number of citizens suddenly remedy all their deficiencies and solve their problems?

It is the researcher's opinion that widespread usage of the Internet in developing countries (where necessary provisions for development and stability do not obtain) would benefit the manufacturers of computer technology more it would benefit the citizens of those countries themselves.

#### *6.1.2 Are there measurable benefits communities to using the Internet?*

The contributors to the AFTI-DEV List debated this particular point at length and highlighted that fact that the poor are not well served by the Internet. Contributors to the GK and DFID Lists also affirm this when some of them stated that there is are very decided unequal access to computers and computer technology that is predicated on whether one is rich and poor or whether one lives in a rural or urban situation.

There was a call from GK List to use the Internet for distance education. This contributor cited that countries such as Zimbabwe and South Africa are already using this technology very effectively and are thus reducing the cost of education. This kind of utilisation of Internet provides us with an example of how disadvantaged communities may benefit from Internet access. In the period under review no other communities reported success stories that are sustainable and productive.

The discussions on the lists tended to emphasise providing the Internet to the majority of the people in each developing country. But it is simply a well-known fact that the majority of people in most developing countries are either illiterate or do not speak the language used on the Internet. The most important issue for researcher is not about providing the Internet unconditionally but rather about *using the Internet to solve development-related problems*. Once the Internet is used to solve a community's *specific* problem or problems, then solutions to other problems (such as the problem of which language is being used and levels of literacy among users) can be found and implemented with a little ingenuity and imagination.

It is the researcher's contention that the issue of Internet provision in developing countries, particularly in Africa, is not linked to considerations of good governance or providing specific and general services that will benefit the population at large. Instead governments in Third World countries promise whatever will secure votes when it comes to election time.

The governments of Third World countries understand only too well that the majority of their populations are illiterate and so (they wrongly believe) can have no conceivable use for the Internet. For these self-serving governments, the provision of Internet service is not politically profitable because it will not secure the votes of illiterate urban voters. The same governments therefore drag their feet when it comes focusing on the provision of the kind of infrastructure and universal education that will enable the

majority of citizens to gain advantages from electronic and computer technologies and the Internet in particular.

### 6.1.3 What policies are promoting Internet usage?

Contributors to all three lists concurred that there is a dearth of policies that provide an authoritative framework for Internet usage. National governments were particular condemned for being unsupportive of widespread Internet usage. The contributors cited import very high duties on IT equipment, oppressive state control of telecommunications, and lack of commitment to Internet issues as some of the areas in which governments needed to change their attitudes.

Table 6.1 below summarizes the areas in which authoritative guiding policies are required to facilitate Internet usage in developing countries.

**Table 35 Summary of policy considerations**

<b>CURRENT SITUATION</b>	<b>POLICY IMPLICATIONS</b>
Stratified access by educated, gender, literacy and geographical location	Internet provision policies are needed that will enable usage by every sector of the population (but especially by the disadvantaged, the uneducated and the underprivileged).
Lack of provision of computers in schools	Devising ICT policies that will empower computer education in all schools
Lack of appropriate local content	Train and indicate people so that they themselves will be able to place relevant local content on the Internet.is
Mechanisms for combining, radio, digital and print modes	Develop appropriate information policies that encourage the convergence and complementarity of technologies.
The private funding of Internet access	Governments should be involved in funding access and in encouraging open competition.



<b>CURRENT SITUATION</b>	<b>POLICY IMPLICATIONS</b>
Lack of coordinated South-South Internet usage initiatives	The development of appropriate information exchanges between developing societies
African leaders do not demonstrate commitment to Internet issues.	Encourage and establish appropriate government protocols that facilitate Internet access and commitment to appropriate universal Internet access and usage.
There are only small numbers of individuals who place content on the WWW.	Develop capacity in this area and pricing policies that facilitate affordable hosting, developing and publishing.
Lack of coordination of institutions that provide and finance Internet education	Education policies that coordinate and facilitate a computer literacy
A need for more role players to develop African content	The development of local capacity to develop and disseminate local content
Africans not participating in large numbers on such Internet bodies as ICANN.	Government should make specific efforts to lobby for African participation on Internet driving bodies such as ICANN.
Current usage of the Internet is largely driven by the needs of technology and the market place rather than by development needs.	Identifying specific developmental areas in which the use of the Internet can benefit an enormous number of people with a minimal outlay of expense.
Limited bandwidth capacity to handle audio transmission	The removal of government policies that prevent private broadcasting
Poor telecommunication infrastructure	Policies designed to create and upgrade telecommunication capacity and thus provide adequate telecommunication infrastructure in the shortest possible time
Telecentres that are privately owned and not in any way subsidised by the government	Government subsidies and sponsorship of telecentres as a matter of urgent policy
Excessively high import duties on equipment and restrictions on the use of telephones	Trade policies that encourage importation of the necessary kinds of technology and the abolition of import duties on equipment of this kind
African languages are not used on the Internet	The education and empowerment of Africans so that they can use their own languages on the Internet
Scattered and isolated virtual practitioners	The creation of virtual communities that enable isolated people to communicate with others in a virtual environment
The limited use of the Internet in distance education	The increased use of the Internet in distance education



## **6.2 Section B. Objective 2: To establish the extent to which the WWW can be used as an information conduit in Botswana and other developing countries**

In chapter 1 and in the literature review chapter, the researcher indicated that the theoretical framework of this work is predicated on *information as a resource in the development process*. In chapter one, it was also noted that SMMES have been identified as a primary growth point and engine for economic development in Botswana.

In this section, the researcher analyses the findings of a ofcase study that permitted a defined group of operators in SMMES to usage of the WWW for business information and support purposes in a developing country. This section excludes questiones that were answered as part of the needs analysis and those that were sufficiently answered by the literature review. The questions specifically excluded in this section are:

- (1) What are the information needs of SMMES?
- (2) What type of sources are currently used to provide information?
- (3) Are the available sources adequate?
- (4) What computerised data bases exist to provide current business information?

6.2.1 *To what extent do potential users have access to a computer with Internet connectivity?*

Only 10 percent of the respondents had a computer. None of the respondents had a computer with Internet access. Without computers, one cannot have Internet access. The lack of computers at the individual as well as at the organisational level therefore becomes an obstacle to accessing the Internet. However, individuals who do not own computers do not necessarily have to be excluded from accessing the Internet. Information providing organisations such as the Fredrick Ebert Foundation, the University of Botswana and the National Library Service that have Internet access could provide Internet access for organisations like BOTSBOA. For this to happen, a well-planned and cooperative partnership would need to be developed between such small-scale organisations as those involved in this case study and information centres – with the latter playing the intermediary role in permitting participants to gain access to the Internet.

6.2.2 *What levels of IT knowledge and perceptions exist?*

The study clearly shows that these entrepreneurs had a limited knowledge of computing and computer-related technologies prior to this exercise. Most of them (60%) had no prior knowledge of computing at all. None of them had used the Internet before this meeting. This indicates that there is an urgent need to train people in

Botswana to use computers if we hope to enable them to use the Internet successfully, even at an elementary level (as was the case in this study).

It became apparent to the researcher that the problem-solving approach used by the entrepreneurs during the study indicated that their training would need to be informed by adult education theory principles – and that they needed more than mere skills provision. The researcher believes that the best approach would be a specially designed multi-phased approach to training that takes into account what these people already know and that helps them to solve problems on the basis of their prior knowledge.

### *6.2.3 What are the specifications of a good site?*

Monty (1999) sets the following specifications for a good site:

- (1) They enable users to know where they are.
- (2) They make good use of landmarks so that revisits are avoided.
- (3) They make good use of cues that enable the user easily to navigate the site.

Desmarais (1994) includes qualitative criteria for measuring feedback from users. If at design stage one has included Mouty's (1999) specifications, the qualitative evaluations of the site by users may be deemed to be accurate.



What follows below is an analysis of how users responded to the site.

#### 6.2.3.1 First impressions

Users liked and enjoyed the colours and arrangement of the site. They were particularly amused to see photographs of some of their colleagues on the site. Seeing those pictures created a feeling of familiarity and a sense of ownership of the site (this probably helped to eliminate any kind of awkwardness or anxiety that might have accompanied interaction with an unfamiliar technology). One might deduce from this that when one plans sites for similar groups of people, the inclusion of familiar features on the first page helps to connect people to what is going on and evoke a sense of belonging.

Users, however, complained that the site took too long to load – even though they obviously enjoyed and liked it when it was finally downloaded and they saw photographs of themselves on the opening page. Several factors may have caused the slowness of the downloading process:

- (1) The Internet is slow in Botswana in the afternoons. The evaluation exercise was done in the afternoon. The general speed of the Internet may have caused the length of time it took to download the website.
- (2) The site contains five photographs on various pages. Downloading pictures requires more bandwidth than is required for characters. That may have been another factor that contributed to the slow downloading.

- (3) The Internet access was a-dial up link. The speed of the modem may also have contributed to the slowness of the downloading process.

Each of these factors will be discussed under other headings. Suffice it to say all the users found the site attractive and interesting once it had been downloaded.

#### 6.2.3.2 Indexing

The literature recommends that a site contain a good index (Mouty 1999; Desmarias 1994; Boyle 1997). This site has a drop down index on every page. A good index facilitates the location of information.

Users found the index to the site useful for navigation. The index consisted of buttons that led them to their stated information needs. Once they discovered what lay behind each button, the entrepreneurs were more eager to find the answers that were catalogued under each heading than to analyse whether the index comprehensively covered all they wanted to know. Thus, for instance, most were keen to “press the button” that opened pages about “Markets” and “Sources of material”. They were mesmerised by the fact that the mere press of a button could link them to markets and outlets abroad.

Clicking icons on the index and finding important information about possible markets made him realise that the website really worked *for them*. When the respondents said “It works!” they meant “This Internet works!” They then systematically went through

each of the pages that were called up by clicking on the blue buttons. The users defined what they wanted to see on this site as they went along and interrogated the index to identify each topic and the information that it contained.

The Index therefore served to make navigation easy for the users.

#### 6.2.3.3 The ease with which the entrepreneurs could use the site

All users said that they found the site easy to use. The ongoing “tutorial” on various buttons also contributed to making the site easy to use. One might have thought that a lack of *any* prior knowledge or experience of Internet usage may have intimidated some of the participants and inhibited their individual exploration. However, once users realised how easy it was to explore the site by using the various icons, there was no stopping them. They were thus soon sufficiently motivated and confident to explore the citing detail, and they were eager to open the icons that led to information that interested them (such as possible sources of materials and markets for their products).

The simplicity in layout and navigation made it easy for participants to use the site. Because the index appeared on every screen, it helped users to jump to whatever page they wanted to explore regardless of where they were on the site.



#### 6.2.4 Does the site meet user needs?

The site met the expressed information needs of users. It provided information that users had said they would like to have. However, by exposing users to the Internet it also created new information needs: *in particular it created a need for information about hard to trade on the Internet.*

##### 6.2.4.1 Content of the a site

The site provided access to potential trade partners and to sources of materials in France, Korea, South Africa and Zambia. They were, however, disappointed to find that they could not immediately trade with places in Korea, France, South Africa, and Zambia because they did not have credit cards. These perceptions and views will be discussed again under implications for e-commerce in section 6.2.3.1.1

All users said the site covered what they wanted to see – although they added that they would have liked to have details about more markets in Botswana and the SADC region because these would be closer to where they lived and attending them would be a viable option. They were disappointed to find that while all the markets listed on the site were external to Botswana, they could not immediately do business with them. The Internet creates a sense of immediacy and anticipation. If e-commerce is to become fully operational and convenient for small-scale businesses in Botswana and elsewhere, appropriate enabling Internet access and policies that facilitate free trade will need to be implemented and exchange controls will need to be relaxed or abolished altogether.

Respondents expressed a desire to have new pictures of their most recent products added to the site (just as photographs of their earlier exhibits had already been included). The subsequent discussion inspired us to discuss all the implications of e-commerce and what they could be achieved by means of it.

#### 6.2.4.2 E-commerce

These people are aware that they stand to gain an enormous amount of business if they can use e-commerce. But e-commerce can only work for them if there is a rationalisation and convergence of trade and information policies, training, infrastructural adjustments and political will. All those factors are beyond the scope of this research. However, this research has established that this group of entrepreneurs has potential to trade on the WWW by means of e-commerce. That will take more than providing an electronic catalogue. It will have to enable banking practices, credit cards and other logistics. Design will of course also play a crucial role in achieving success.

The timing of the entry into e-commerce is crucial. There is a real danger that exercises like this may create widespread pessimism and dissatisfaction among entrepreneurs. Websites like this create anticipation in users. Entrepreneurs want to engage in business that makes profits. If we want the Internet to be seen to be a workable tool, then we have to demonstrate that it can deliver the goods (i.e. that it can be used to trade successfully and maximise profits). This case study has shown that entrepreneurs will return to a service if it sells their goods or if it provides them with material and

information that they need. Thus, while respondents have shown their eagerness to engage in e-commerce, they neither have access to the Internet nor credit cards with which to conduct on-line business. The government needs to facilitate all these amenities for entrepreneurs. They need to create credit guarantee schemes, undertake training and provide services which will allow products to be digitised for uploading to a WWW.

#### 6.2.5 *How should the site be improved?*

None of the users had any more information to add to this site. This was the first time these respondents had used the Internet. Because of their lack of experience, these respondents may not have realised that they had any need to add any more information to the site beyond their desire to see their products added to the site. In other words, while they were not too keen on adding more data to the site, they wanted a site of real commercial value that would enable them to start *trading*. This has implications for information provision and what type of information is provided on the WWW. **It is not sufficient to provide information that informs potential buyers about where material is located. When buyers receive such information, they should be able to act on it immediately.** Providing such service on a site would add limitlessly to its value.

An approach to information that enables the user to not only make a decision but also to act on it, is a standard practice for successful electronic trading. A certain amount of



convergence needs to occur among sectors before consumers are hindrances that prevent them from utilising the information that they find. For instance, by the time that information on the market becomes available on the WWW, related information on credit cards, import duties, etc, must also be readily available so that users can proceed to trade electronically without any hindrances or obstacles.

#### *6.2.6 Subsequent visits to the site*

Three responses were selected. They indicated that users want to revisit the site when:

- (1) they want to find more information about BOTSBOA
- (2) they want to find new or existing markets for their products
- (3) they want to find out how to source fabrics

Despite the very short exposure of these users to the WWW, they were able to locate precisely what they wanted from the Internet. They were not just interested in manipulating or enjoying the site for its own sake: they wanted the site to deliver commercially. Furthermore, because they had been involved in the initial consultation of the site, and had indicated what they would like it to have on the site, they had a degree of familiarity with the content of the site.

This tells that us that if we want a site to be relevant, it must be based on the specified need of its users. A good target population analysis, goal analysis and content analysis are always essential when building an effective site.

### 6.2.3 *Other considerations*

#### 6.2.6.1 Design

The complaint that site took too long to load is a valid one, and one that cannot be ignored in design. It is important to be appraised of the various specifications of the equipment that participants will be using. If a group of users are using a dial-up connection with a first level modem, it may not be wise to include too many graphics. Even before one designs a site, one needs to know the about the equipment that the participants will be using. If the specifications and capacity of the equipment is known, one could use the file type that would use less space. Bandwidth can be saved by (for instance) storing graphics as “gif files”.

#### 6.2.6.2 Language

At the formative evaluation stage, it was drawn to the researcher’s attention that the language used on the site, namely English, could be a problem for the target population. However, one of the dictates of globalisation and international trade practice is that people must communicate with each other in one of the leading colonial European languages, i.e. English, French, Portuguese or Spanish. These have all become the languages of the market place. If Botswana’s textile entrepreneurs are to

compete on the global platform *beyond* the borders of Botswana, then they have sell and market in English because it is a worldwide marketing language. How this affects the needs of building local content is a topic that will be dealt with under another heading.

#### *6.2.7 What is the degree of connectivity?*

None of the respondents had Internet access in their organisations or at home. This makes it questionable as to whether developing countries should be aggressively pursuing Internet connectivity for the majority of its populations. Are there no other ways of meeting the information of needs of its citizens without wholesale Internet connectivity? Could not hybrid and complementary practices that combine the Internet and other media be rather constructed?

#### *6.2.8 To what extents can the WWW be a tool for information delivery in Botswana?*

It has already been established that Botswana is a relatively rich developing country. Its telecommunication infrastructure is one of the best in Southern Africa. However, this case study has shown that there are pockets of people who are not aware of the potential value of the telecom structure, or what the world is using it for. The

population under study was just one such group. They were not aware that the Internet had any relevance or value for their business.

**The study has shown that Internet can be a useful information resource for groups of entrepreneurs. However, the study has also shown that it is not enough to provide access to information that entrepreneurs need. It is equally important to design a commercially usable site that would facilitate e-commerce.** The site needs to go beyond being an information centre to one that enables commercial activity such as local and international trading and marketing.

While the Internet can give entrepreneurs ready access to markets and sources of useful raw materials, the population needs to be prepared, through training, access to digitisation equipment and other forms of e-trade readiness, for profitable trading and marketing activities. Policy level cooperation between the Ministry of Trade and Commerce, the private sector and Botswana Telecommunications, and the Bank of Botswana, could pave the path for successful electronic commerce, which more than anything else, is what these entrepreneurs and others need.

**This case study has shown that it is not enough to use the web as an information source. It needs to be a commercial platform.** It has demonstrated that entrepreneurs are willing to learn to use the WWW in order to conduct business and make profits.



### A summary of the case study findings

Table 6.2 below summaries the findings of the case study. The table summaries the processes that went into gathering data for the case study. In this exercise linkages were created between instructional design and information provision.

**Table 36 A summary of the case study findings**

Research questions	Findings in the case study
1. What type of information do SMMEs entrepreneurs need? 2. What types of sources are currently used to provide information? 3. Are the available information sources adequate?	Entrepreneurs depended on informal and oral information from colleagues.  They felt that current sources were inadequate because they did not give them all the information they required.
1. Are gender, education and literacy levels limiting factors in accessing information?  2. What were the other socio-cultural hindrances to information access?	The majority of the members were women. None of them had never used the Internet before.  Most had a limited knowledge of English.  Although none of the participants had graduated beyond Junior Certificate education, this level of schooling was not a barrier to accessing information since they depended on one another for information.
1. Do potential users have access to a computer with Internet connectivity?	None of them had access to the Internet.
1. What computerised databases exist to provide current information? 2. What levels of IT knowledge and perceptions exist?	Business Linkages database of BOTSBOA  Respondents had little to no knowledge of computing.

<p>1. What are the specifications for a good multimedia database?</p> <p>2. How should these specifications be adapted to meet the needs of a target population?</p> <p>3. Does my database meet these specifications?</p> <p>4. To what extent does my database fulfil the needs of my target population?</p> <p>5. How should it be improved?</p>	<p>One that meets the anticipated needs of target population.</p> <p>One should address specified information needs.</p> <p>It does not, it should be improved because users want it to be of commercial value.</p> <p>Although it supplied useful and requested information, the users wanted more.</p> <p>It must be expanded to be responsive to the commercial needs of respondents.</p>
<p>1. What is the degree of web connectivity?</p> <p>2. What are the policy issues around Internet connectivity and web availability?</p> <p>3. To what extent can the WWW be a tool for information delivery in Botswana?</p>	<p>While an infrastructure exists, Internet connection is controlled by the private sector. This will limit access to those who can afford it.</p> <p>Botswana needs a multi-sector Internet policy that facilitates and enables e-commerce.</p> <p>Because of current poor connectivity, the country may have to settle for convergence and complementarity between more than one more accessible kinds of technologies (such as radio and the WWW).</p>

### 6.3 Section C: Synthesis of the findings

This section consolidates the responses to each question as they were reflected in the literature review, the lists and the case studies. It brings together all the findings and provides a consolidated discussion and conclusion to the research report.

- (1) What are the prevailing environmental conditions that encourage or discourage Internet connectivity? What is the degree of web connectivity in Botswana?

The literature says that developing countries are hindered in their attempts to embrace Internet by expensive equipment, unreliable telephone lines, language barriers and inappropriate content (Jensen 2001; Kole 2000; Ticoll 2000). In Botswana Internet service provision is provided by the private sector and is run on a commercial basis.

The discussion lists concur with literature in the opinion that inadequate infrastructure is hindering the usage of Internet. Other items cited by the three list were absence of qualified personnel; unequal access between men and women, rural and urban, educated and uneducated as well between the rich and the poor; expensive equipment, and the absence of national information policy. The AFTI-DEV List added a lack of commitment on the part of governments to create enabling environments.

The case study indicates that there is poor connectivity among small, medium and micro scale entrepreneurs in Botswana. Before the study, the group had had no prior exposure to the Internet. This finding corroborates the one from the list that there are poor rates of connectivity among the lower classes.

All the three sources of data, literature review, lists and case study concur about unsatisfactory levels of connectivity to the Internet – specifically by the poorer members of society. The discussion lists added lack of training and appropriate policy as yet other barriers.

These findings seem to suggest that the policy of various UN agencies to bring Internet to developing countries as a tool for development may be premature or defective. While there is a call and urge for developing countries to embrace the Internet, the prevailing structural conditions are clearly not yet ready or adequate for such mass adoption and usage. It is the view of the researcher that the call for universal connectivity at this stage is inappropriate and premature. The call may be yet another futile development indicator that measures development (or the lack of it) – and reinforcing the perpetual stereotype of yet another “undeveloped” nation. Developing countries are not likely to upgrade their telephone communications in the foreseeable future because of their very limited resources. In the light of the situation, an insistence on the universal adoption of the Internet as the new tool for development will not facilitate the hoped-for “leap frog” effect that will enable underdeveloped countries to wipe out their deficits and catch up with developed countries.

Internet usage in developing countries should be used only in sectors that need it. Donor communities should not impose it. It should be based on a careful needs analysis and applied *in a sustainable manner* by all stakeholders, government, civil society and funding communities.

## (2) What measurable benefits accrue to communities using the Internet?

The literature review turned up a dearth of information in the literature that measures the impact of the Internet on communities served. While there are on-line studies that



have shown that the Internet has improved communication and the status of its users (Kole 2000; Jensen 2000; FLAMME 2000), Heeks (1998) argues that these studies only targeted users of the Internet and **not** communities that are served by those connected to the Internet. However, the literature indicated that in Singapore, Malaysia and Brazil, governments have taken a leading role in using the Internet and are encouraging other sectors to do the same.

Contributions from the lists indicated that the only communities that have benefited from the Internet are urban communities, educated communities, middle class communities and native speakers of dominant European languages such as English, French, Portuguese and Spanish. In other words the Internet benefits the elite. The poorer, uneducated, female and largely illiterate communities do not have access and therefore do not benefit from the Internet.

The case study has shown that the group studied could benefit from the Internet even though they had no access to it. There is potential wide spread benefit that they may gain from using it. The case study showed that they were keenly interested in on-line trading and that e-commerce could benefit groups such as these users beyond anything they could now dream of – if only they could be empowered and enabled with all the facilities and amenities they need to conduct on-line trading.

The lists and the case study concur that not all sectors benefited from using the Internet. The lists identified sectors that are excluded by the Internet, while the case

study highlighted that this particular group of users did not even have access to the Internet.

This leads researcher to conclude that without supportive governmental policies and agency support for the small entrepreneur, the Internet is out of reach as a tool for the small business person and remains available only to the country's elite. As a development tool, its present form does not benefit the poor, the illiterate, and rural and female populations. There is therefore need for objective research on the benefit of the Internet to users, the call for immediate widespread usage seems premature and ill-considered. There is an urgent to identify what forms of communication would be most beneficial to communities, and whether the Internet could complement other forms of communication. Furthermore, there is need to identify those groups and sectors that do need the Internet so that the Internet does not become another form of exclusion but a tool for development.

(3) What policies are already in place in Botswana? What are the policy issues around Internet connectivity and web availability in Botswana?

The literature identified the absence of a guiding policy as an obstacle in the way of expansion of the Internet. In Botswana there is no Internet policy.

The lists identified the need for appropriate policies that will encourage growth and development on the Internet. They also suggest that the government urgently needed to

deregulate telecommunications, abolish import duty, and itself become an active subsidiser of Internet use and infrastructure in the country.

The case study contained no specific question that referred to policy. It was evident that there is no government policy either in relation to providing access to this particular group, or on the future of e-commerce in Botswana.

The literature, the lists and the case study concur that there are no Internet supporting policies in most developing countries. Policies provide supportive frameworks for developments. Absence of policy makes for implementation difficult if not impossible. This observation leads the researcher to conclude that all policies that relate to information usage and the Internet urgently need to be reviewed and harmonised with each other so that they can provide guidance for rational future actions for expanding Internet usage and providing the necessary context and infrastructure in which this can take place.

(4) What are the information needs of SMME entrepreneurs?

The literature identified the information that entrepreneurs needed as being information about financing, government schemes, management training, sources of raw materials, exports, customers, laws and regulations, sources of skilled labour, and premises

The list analysis identified no specific information need but noted that the Internet lacked African content from developing information.

The case study confirmed the information needs identified by the literature and added that information needs arose out of exposure to the Internet about how to trade on the Internet.

These findings show that information needs are static rather than dynamic. While the literature and the initial needs analysis revealed lists of the information needs of this population group, new experiences resulted in additional information needs. Exposure to the Internet created a new need, a need for information about how to conduct trade over the Internet. This made the researcher realise that frequent evaluations and analysis are essential if one is to continue to meet the expanding information needs of a population. **New experiences create new information needs. These evolving new needs should be captured and addressed on a regular basis.**

(5) What types of sources are currently used to provide information?

The literature showed that the majority of the population depends on oral information from personal networks of family, friends and associates. When need they had for information they acquired from their personal contacts.

The list noted that the radio was a common medium for the transmission of information in most developing countries, and called for a convergence of ICT (and particularly



radio and the Internet) so as to fulfil the information requirements of populations in developing countries.

The case study confirmed these findings because the majority of the people stated that they consulted associates whenever they wanted to acquire business information. They source information from their immediate environments and networks.

This led the researcher to conclude that the oral tradition as an information source is still deeply entrenched in developing countries. It should not be eradicated but rather augmented by new technologies so that people receive up-to-date information and so that they can be inspired by new developments from other places in the world.

(6) Are available information sources adequate?

The literature showed that currently available sources of information are not adequate. Print information is not easily usable. Oral information is usually out of date. The existing information centres were not responding to the information needs of entrepreneurs.

The case study showed that existing information sources were not adequate. They did not provide new information on the most current developments in government. Government information is in print form and is not easily available to entrepreneurs. It

also showed that it did not provide information for markets or sources of raw material outside of Botswana.

The lists indicate that language is a limiting factor in the usage of available information sources, as they tend to be in the languages of former colonial powers, i.e. in English, French, Portuguese or Spanish.

The inadequacy of information sources manifests in a variety of ways: it extends from language to print to being out of date. The provision of adequate and relevant information cannot be universal. It should be based on a careful analysis of the target population and its ability to utilise those information sources. They need to ensure that information sources are easily comprehensible to target populations and that they are in a format and language that is understood. No matter what sources are used, they all need to respond to the principles of information provision, which include accuracy, currency, authority, and authenticity (this last principle has been added by the researcher).

(7) To what extent are socio-cultural issues of gender, education and literacy limiting factors in accessing information?

The literature identified lack of education, being female, and illiteracy as limiting factors to accessing information. Uneducated people and the illiterate tended to have limited access to information because information is either in an ex-colonial language (which

assumed some degree of education) or in print form (which also assumed some degree of education). Gender was also identified as a limiting factor in accessing information because women had a limited access to information because they were either less educated than men or they are socialised into subservient roles that limit their capacity and initiative to undertake inquiries.

The lists concurred that language, education and gender were limiting factors to accessing information on the Internet. The less educated and illiterate could not read nor understand the languages of the former colonial masters that are used to disseminate information on the Internet. The lists also added that gender was a limiting factor to accessing information on the Internet because women could not on the whole afford the equipment that would enable them to access the Internet.

The case study differed from the lists on the limitation of language to accessing information. It showed that although language maybe a limiting factor, there are forms of relationships among entrepreneurs that can bypass the limiting constraints of understanding a European language. The entrepreneurs interpreted the content of the site among themselves and continued to explore it together. Because they worked in groups with varied but generally limited English language skills, they were able to translate the content of the site for one another. It showed that entrepreneurs were determined to bypass the language limitation in order to trade.

The list and the literature concur that there are socio-cultural factors such as gender, literacy and language that limit both access to information and to the Internet. This reminds us that it is not enough to consider only physical barriers to accessing information. Social issues also impact negatively on access to information. However, putting local content in local languages does not take into account the predominant languages of the market. The sole use of local indigenous languages could limit access to markets. The content needs to use the language of the market. Languages understood beyond the borders of a population need to be used if one hopes to maximise the size of one's markets.

(8) What physical barriers exist that limit access to information?

The literature and the lists concur that physical barriers to access are distance from an urban centre and inability to afford equipment for accessing information on the Internet. In both print and Internet environments, urban populations had more access to information and to the Internet than did rural populations.

The case study showed that because small-scale entrepreneurs did not have the capacity to own computers, they therefore did not have access to the Internet. Other physical barriers to information include information centres that are inaccessible (Mulindwa 1988).

This led the researcher to conclude that physical barriers are the same in a print format as they are in an electronic environment. The same barriers to information exist in a print



environment. An approach that takes all factors into account should be applied when solving information problems that occur in both electronic and print environments.

(9) What computerised databases exist to provide current information?

The literature has shown that there are limited databases on business information in developing countries.

The lists concur with the view that there is a limited amount of local content in electronic format – whether it is on the WWW or in a fixed database. A need to digitise local content was strongly expressed on the AFTI-DEV List.

The case study reported that there a database containing demographic information on small business was maintained jointly by the Ministry of Commerce and the Fredric Ebert Foundation. The database lists small-scale companies that are involved mainly in the textile sector and in small-scale manufacturing.

It is a good start that there was database of small-scale industries in the Ministry of Commerce. However, it is questionable what the database was used for, and whether it benefited the entrepreneurs. It certainly does not provide current information on business practice in Botswana. None of the entrepreneurs had used before.

The lists and literature concur that there is a dearth of electronic information from developing countries. In the case of Botswana there exists a database of business information. It is however not presented in a manner that benefits the wider community. This leads the researcher to conclude that local information should not be presented electronically but that it should be usable in a manner that benefits the community of users as well.

(10) What are the specifications of a good web site?

Mouty (1999) states that a good site must:

- enable users to know where they are
- make good use of landmarks
- make good use of cues so that it is easy to navigate

Other specifications for a good site include meeting and responding to the needs of the target population and being up to date and attractive.

The lists indicate that a good web site is one that is locally and externally relevant and that provides good local content.

The case study showed that a good site is one that responds to the needs of users and adapts to the changing information needs that arise out of varied exposures.

A combination of good local content and responsiveness to needs of communities of users is essential. Developing nations need readily usable information that will enable them to function more efficiently and more profitably.

In a dynamic Internet environment such as those that exist in developing countries, it is not enough to use “international” standards for measuring the quality of a web site. It is not the animation and the glamour of the site that is relevant but rather the content and the degree to which it is flexible enough to grow with the evolving needs of its users. To the standard information science criteria for evaluating a website, I would add **flexibility**. The site must be flexible enough to accommodate the evolving information needs of the user community.

- (11) Does my database meet these specifications and the needs of my target population?

The literature says that a good web site should be usable with the equipment that is available to end users, and that it should meet the needs of those users.

The lists were silent about the specifications of a good site beyond that the content should be relevant to communities served.

The case study showed that the site used by this group of user was simple and usable on the available equipment. However, the site did not meet all the needs of entrepreneurs because their needs kept evolving.

Usage of the WWW in developing countries should not respond to the desires of the developer but should rather be guided by the evolving needs of users. As the users discover more about the Internet, they will demand more from it. It will then be the responsibility of developers to respond to that need and to develop appropriate sites that are informed by user needs and the equipment of end users.

(12) How should the site be improved?

The literature indicates that constant evaluation helps to keep a site relevant.

The case study showed that the site needed to be open-ended so that it grows with the growing needs of the population.

This leads the researcher to conclude that developing websites for dynamic entrepreneurs need to be designed by innovative developers that share a commitment to the growth of the user community. As the users learn more and ask for more, the developers should grow with them. The political commitment of developers should be similar to that of users so that developing is not seen as a separate art but as an integral part of community development.



(13) To what extent can the WWW be a tool for information delivery in Botswana?

The literature has indicated that the Internet is the new tool for development. In Botswana there has been a call by both the Vision 2016 and practitioners to start embracing the Internet as a new strategy for communication.

The lists indicate that the WWW has a potential to be a tool for information delivery but that infrastructure problems would first have to be remedied. The lists called for attention to issues of training, affordable equipment and sustainable growth in order for profitable usage of the WWW to be sustainable.

The case study has shown that Internet usage could be more effective if it was sector-based. Intervention should be by sector, particularly with commerce-based groups that need to find a way to expand their business. Such an approach would make the Internet more usable in Botswana and in developing countries. In general needs and requirements of developing countries should determine where and how the Internet should be used. The wholesale adoption of the Internet in Botswana would not be sustainable. It should rather be implemented in a sector-by-sector approach and its implementation should rather be based on the needs of a target population and backed up by the adequate training of users. The extent and usage of the WWW need not be

externally imposed. It should rather respond to the needs of growing organizations and sectors.

#### 6.4 Conclusion

The application of the WWW case study affirmed the findings of the content analysis that there is indeed unequal access to the Internet as well as a lack of policy on the Internet provision. It is also uncoordinated and fraught with problems. The problems are both technical and socio-political, and require both the government and civil society to solve them. The relevance of these findings goes beyond design issues. They incorporate other issues that concern the Internet, whether these arise out of discussion groups, chat lists or any other forums. They raise the fundamental question about whether developing countries should be pursuing the Internet with such zeal when fundamental problems remain unresolved. Perhaps the Internet should be applied in certain sectors and not in all sectors of development? All these are questions that need well-considered answers.

The application of the WWW case study affirmed the findings of the content analysis that there is indeed unequal access to Internet as well as a lack of policy on Internet provision. The case study, however, did show that entrepreneurs are extremely keen to use the Internet for on-line trade or e-commerce. The small business sector, which is sustained by its profits, could benefit enormously from access to the Internet as an information source and as a medium for trade. The study showed that if the policy issues that inhibit access to Internet were removed, and if users were given access to

Internet, they could solve more personal questions (such as language usage) and use the Internet to expand their businesses and make them vastly more profitable.