The Role of Information and Communication Technology in Small and Medium Enterprise Development in Botswana. Results of the pilot phase of a project sponsored by the UK Department for International Development (DFID) & Institute for Development Policy and Management The University of Manchester.

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Abstract

The paper analyses the role of information and communication technologies (ICTs) in small and medium enterprise (SME) development in Botswana. It outlines the economic and policy background to SME development, and presents an analysis of the SME sector with regard to firm size, location and market sector. It presents the results of a pilot survey of firms in the SME sector examining the information and communication practices of a small sample of firms. Current developments in information and communication technologies are outlined, and some preliminary findings relating to ICT impact on SMEs are summarised. Finally, some policy considerations are mentioned and the objectives of the main fieldwork phase of the project are outlined.

Keywords

Small Enterprises.
Medium Enterprises.
Information Technology.
Communication Infrastructure.
Botswana.

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1 Botswana Institute for Development Policy Analysis (BIDPA) is an independent trust set up by a Presidential Decree. It started operations in 1995 as a non-government policy research institution.
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Introduction

This working paper will outline the objectives of a current BIDPA-based research project, which is being undertaken in Botswana, concerning the role of information and communication technologies (ICTs) in enterprise development. The paper will summarise research conducted during the pilot phase of the project, and will present the findings of a pilot survey of firms.

The introduction will outline the objectives of the study, including the research method and the intended research outputs. Section 1 will summarise the economic background to small and medium enterprise development in Botswana, as well as outlining the current policy framework within which SME development is taking place. The impact of SMEs on Botswana’s economy will also be examined. Section 2 will present an analysis of the registered enterprise sector according to firm size, firm location and market sector, and will examine the role of exporting SMEs. Section 3 will present the results of a pilot survey of firms carried out in Botswana making some preliminary comments on the information and communication practices of formal sector SMEs. In section 4 the role of information and communication technologies will be examined in the context of industrial and commercial development, and some initial findings will be presented regarding ICT impact on SME development in Botswana.

Project Summary

The project aims to find out what role new information and communication technologies (ICTs) may play in small and medium enterprise (SME) development. The project will principally focus on analysing the information and communication needs of small and medium enterprises, and will assess the opportunities for ICT application. The project will produce a set of recommendations aimed at three groups within the SME development community: Small and medium enterprise entrepreneurs, intermediary support organisations and government policy making bodies. All recommendations will guide recipients toward best practice in the application of new technologies and toward alternative non-technology-based improvements in information and communication systems.

Background

Information and Communication Technologies (ICTs) are playing a growing role in the process of industrial and commercial development within the countries of the Southern African region. Since the mid-1980s, the Botswana Government has been investing heavily in a sophisticated telecommunications infrastructure for the country and is establishing data communication networks across a range of ministries and departments, as well as within parastatal organisations and public utilities.
Currently, the Government of Botswana remains by far the largest contributor to investment in IT and communications systems, but it is expected, in the years to come, that the private sector will play an increasing role both as a provider and a user of ICT goods and services. There are a number of factors which are driving this process of change:

- The Telecommunications Act (1996) has committed Botswana to enhanced private sector involvement within a deregulated competitive environment allowing new market entrants to compete in the provision of infrastructure, network access and value added services.

- Government is restructuring and de-centralising its computer operations which will allow individual ministries and departments, at central and local level, to form their own partnerships and contracts with the private sector. This is likely to lead to increased opportunities for SMEs in the provision of IT hardware and in the support of IT systems development within individual departments and within other government funded organisations.

- Botswana's Vision 2016 document makes a strong commitment to the development of competitive industries utilising the most modern technology, including the implementation of information technology across all industrial and service sectors.

- The education system is being restructured, increasing opportunity for following technical, managerial and computer related subjects. A major programme of computerisation in schools will lead to increasing levels of computer literacy amongst the working population.

ICTs are already in widespread use within a range of enterprise sectors which are considered more information intensive. These are sectors such as financial services, travel and tourism and 'creative industries' such as printing, publishing, advertising and media. These are all business sectors where effective capture, processing and dissemination of information is critical to business success. ICTs have also been implemented, to varying degrees, within many medium and large scale firms, as well as within intermediary and support organisations in the role of project support across a range of social development sectors including education, health care and agriculture.

The role of the small and medium enterprise sector has already been recognised as critical to achieving the objectives of the long term vision for Botswana, in terms of their employment creating capacity, as a means of empowering more citizens in the process of industrialisation, and in order to create a wider base of indigenous, and sustainable, technological capability. SMEs, particularly, in urban areas, are being subjected to increased competition, as well as increased demands for quality of products and services. Surviving in an increasingly competitive environment will require raising the overall productivity of the SME sector, which in turn will require higher levels of management capacity. In this regard the ability to acquire, process and use business information becomes central, as does the ability to effectively
utilise emerging information and communication technologies.

There is a strong belief amongst policy makers that substantial and increasing levels of investment in ICTs will bring growth, efficiency and productivity gains within the industrial and commercial sectors, as well as a range of social benefits across the wider economy. This belief is reinforced by developments in the industrialised countries, and in particular, by the rapid growth rates experienced in the newly industrialising countries (NICs) of the far east, whose success is considered to have been based largely on high technology export-led growth and rapid expansion of information intensive industries.

In the past few years there have been calls for the Botswana Government to develop an integrated and coordinated policy toward information and communication technologies, as well as strategies for implementation and support. The New Industrial Development Policy for Botswana states the need for a comprehensive science and technology policy, however, there is no clearly stated recognition of the strategic importance of information and communication technology in the process of industrial and commercial development.

Research Objectives.

Botswana has been chosen as a case study for this research project for two main reasons. First, due to Botswana’s relatively well developed communication infrastructure which affords scope for observing current IT applications, and also making meaningful recommendations on future policy toward IT implementation. Second, there are a large number of enterprises across a range of sectors which are relatively easily accessible, as well as there being a large number of intermediary organisations - both governmental and non-governmental - operating in the role of SME support.

The main research objective is to provide realistic recommendations about the ways in which information and communication technologies can be applied to small and medium enterprise development. Initially, an analysis will be made of the changing information needs and communication practices amongst a representative sample of Botswana-based formal sector enterprises. The role of intermediary organisations in the provision of information will also be assessed as well as the potential role of ICTs in supporting the informal sector. Finally, the role of government in setting the policy framework for effective IT implementation will be considered.

The project will seek to answer the following questions:

- What is the role of information, from both internal and external sources, in the growth and development of SMEs within Botswana?

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1 For detailed analysis of this trend in a range of small S.E. Asian countries, see: Hobday, M. (1995)
• What are the information needs of SMEs and how can those needs be assessed?
• What are the relative costs and benefits associated with the utilisation of emerging information and communication technologies in the SME sector?
• What are the constraints within the SME sector to harnessing the benefits of information and communication technologies?
• What is the role of Botswana’s ICT infrastructure, and the information services sector, in meeting the information needs of SMEs.
• To what extent is the growth of an information intensive sector (that is enterprises whose business is primarily concerned with information handling) taking place in Botswana.

• What are the implications for future policy, in terms of business strategy, and in terms of enabling and regulatory policy at a sub-national and national level?

The research aims to take a broader and deeper perspective in analysing the potential role of ICTs in enterprise development. The intention, therefore, is not to begin by analysing the application of technology, but instead to concentrate on assessing the existing information and communication practices of enterprises, and to examine the requirements of enterprises for improvement in those practices. When this analysis has been carried out it will then be possible to come to realistic and informed conclusions regarding ICT application.

Research Method

The core component of the research method will be semi-structured interviews with Botswana entrepreneurs using a sample set controlled for sector, location and size. The sample set is intended to cover export and non-exporting enterprises, as well as current ICT and non-ICT users. The research method will also draw a distinction between survivalist enterprises: to be found mostly in the informal sector where entrepreneurs are motivated primarily by the need to sustain their livelihood; and dynamic enterprises, to be found mostly in the formal sector where entrepreneurs are primarily motivated by the need for business growth and profitable operation.

The interviews will collect background data on current information needs and communication practices, as well as profiling the enterprise, the entrepreneur and the ICT access, use, skills and awareness of business owners. Data will be gathered by the use of critical incident recall, and structured around issues of information needs, content, sources, channels, recipients and use. An information mapping exercise will be used to help illustrate typical information linkages for enterprises according to a range of sampling criteria. Interview data will be supplemented by a small number of extended observations of information seeking behaviour of entrepreneurs, and on the basis of interview data, a questionnaire survey will be used to gather information from a broader spread of enterprises. In addition, ICT and small enterprise context data will be gathered from interviews with staff in intermediary and support organisations as well as within governmental and non-governmental policy making bodies.
Research Outputs

Research project outputs will be presented in both interim and final versions:

- **Interim Research Papers** dealing with the current information and communication systems of SMEs, and the status and constraints of ICT application.
- **Final Research Report** including summary of interim papers and recommendations for ICT application to SME development, as well as non-technology-based-improvement of information and communication systems.
- **Practical Handbooks** providing straightforward guidance for improvement in ICT implementation, aimed at a) entrepreneurs b) intermediary organisations staff.

Communication and Dissemination of Results

All reports and papers will be circulated to a compiled mailing list of Botswana recipients, and through the international mailing list of small enterprise development institutions operated by IDPM. Papers will also be published on the world-wide-web and distributed to dissemination services such as ID21. The practical handbooks will be circulated to a range of intermediary and support organisations in Botswana, and - in translated form - through appropriate channels to Botswana entrepreneurs. Additionally, a one day workshop will be organised in Botswana for intermediary organisations and officials from policy making bodies, to present recommendations and discuss surrounding issues.

Research Beneficiaries

The main intended beneficiaries of this project will be:

- **Small Business Entrepreneurs**, both directly by use of the handbook and through contacts with intermediary organisations.
- **Intermediary Organisation Staff**, through raising awareness of ICT implementation issues in SME development.
- **Government Officials**, by raising awareness in governmental intermediary organisations and consequently through contacts with policy makers in industrial and communications policy areas.
- **SME Development and ICT Research Community**, locally, regionally and worldwide.
1.0 The Enterprise Sector in Botswana

It might not be immediately clear why Botswana should present a suitable case study for analysing the growth and development of small and medium enterprises (SMEs). Botswana's small population, currently only 1.5 million people, has undoubtedly presented a limited demand for indigenous products, and the relative immaturity of the economy has presented potential entrepreneurs with predominantly unsophisticated rural-based consumer markets. However, Botswana has presented a number of important lessons in industrial development since independence in 1966.

The usefulness of studying industrial development in Botswana has been outlined by Harvey (1990) who compares manufacturing in Botswana with six other sub-saharan countries. Three factors are suggested which make Botswana a valuable case study. Firstly, Botswana has shown the most rapid rate of real economic growth, whether measured by GNP per capita or total GDP, of any country in the world between 1965 and 1985 (World Bank 1987). Secondly, the rate of growth in manufacturing value added (MVA) is only slightly lagging behind countries such as S.Korea, Indonesia and Singapore, and this development of productive indigenous capacity has been achieved alongside strong mineral led export growth. Thirdly, Botswana, unlike most other sub-saharan economies, has operated a relatively open trade policy with its Southern African neighbours, whilst making little use of protectionism and encouraging the full participation of the private sector in the economy.

There are many factors, therefore, which bring Botswana into line with current economic thinking and there may also be lessons to be gained from their experience.

1.1 The Economic Background to SME Development in Botswana.

Like many other African countries, Botswana's economic development has been built upon the exploitation of natural resources. Unlike many other African countries Botswana has, possibly uniquely, been able to successfully direct the earnings from the export of minerals toward encouraging rapid industrial development. In 1970, when diamonds were first discovered, Botswana was predominantly an agricultural subsistence economy with no developed infrastructure. In the early days, non-mining industrial development took place almost exclusively due to the exploitation of meat products through the formation of the Botswana Meat Commission (BMC), which still remains an important source of export earnings.

The 1970s and early 1980s saw rapid sectoral growth rates not only in mining and beef products but also in other industrial sectors. Many of the success stories from

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*From 1973/74 to 1985/86 there was an average increase per annum of 22.05% in the contribution from mining to total GDP, year upon year. During the same period, the average yearly increase for manufacturing industries was 13.7%. Bank of Botswana Annual Statistical Review. (1988)*
this period were created through a judicious mix of public and private investment much of which, for larger projects was allocated through the Botswana Development Corporation (BDC). The most successful of these were for import substitution of basic foodstuffs, such as the Kgalagadi Breweries established in 1975, Bolux Milling for flour products established in 1985 and Sugar Industries established in 1984. BDC also created private sector partnerships or directly invested in a range of other manufacturing and service industries from hotels to distribution companies and building products to private hospitals. As well as investing in industrial growth and diversification projects, the Botswana government was also spending heavily on basic physical and social infrastructure (Harvey and Lewis 1989). This created a large demand for contracting services and encouraged a large number of foreign-owned companies to locate in Botswana, in order to satisfy local demand. Figures show that in 1984 over 60% of all manufacturing establishments were foreign owned.

The first two decades of independence, therefore, was characterised by extremely high levels of both government and foreign investment in a range of industrial and service sectors. However, the question remains: what benefit did the SME sector, and in particular locally-owned enterprises, derive from this process of rapid economic development?

By the late 1970s, the evidence tended to show that locally owned businesses were not either being created or being expanded to meet the rapidly growing demand for goods and services. Additionally, there were growing concerns about rising urban unemployment, the need for industrial diversification and the creation of a larger job market was recognised. At the time, a detailed study of employment trends and policies (Lipton, 1978) helped bring this trend to the notice of policy makers and consequently, a series of policy initiatives were enacted in the early 1980s. (National Policy on Economic Opportunities, 1982; Financial Assistance Policy, 1982) The following section will discuss how economic and industrial conditions have developed since the National Policy on Economic Opportunities was enacted in 1982.

The ideas contained in the 1982 policy were further integrated into The Industrial Development Policy (1984). Jefferis (1996) has summarised three basic principles which underpinned the policy. The first of these emphasised the primacy of private ownership and the operation of market mechanisms in the process of industrial development, except where the state had legitimate involvement in infrastructure provision, support for strategic industries and other incentive schemes and interventionist measures to correct market failures. Secondly, it was hoped that the growing internal market would provide sufficient demand for locally produced goods, enabling further import substitution, and some limited promotion of exports.

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5 On its 25th anniversary in 1995, the BDC had total investments worth 800 Million Pula, and since 1984 has been conducting a disinvestment programme selling interests in more established and mature enterprises. See: BDC Annual Report (1996)

6 This process was in fact encouraged through the provision of government financial assistance to small and medium scale foreign-owned businesses through the Botswana Enterprise Development Unit (BEDU). This policy was continued under the Financial Assistance Policy (FAP) which commenced in 1982.

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Lastly, there was an emphasis on encouraging small industries which were locally owned, particularly in the rural areas. In addition to stating basic principles, the policy also initiated policy instruments which included the Financial Assistance Policy (FAP), extension of the local preference scheme and the creation of new support services for SMEs.

The economy did indeed continue to grow and Botswana created a small economic boom in the latter half of the 1980s, fuelled primarily by steadily rising government revenues from the output of diamonds. This period, from 1986 to 1991, also saw a rapid increase in private sector employment. From 1986 to 1991 employment in the private sector more than doubled, to a total of 142,500 employed persons, and achieved on average a 4% growth rate per annum ahead of the rate of growth in the labour force. It has been estimated that up to 7000 secure jobs were created by SMEs receiving FAP grants, which draws the conclusion that the vast majority of jobs created through the boom period were the result of private sector investment rather than through financial assistance from government.

The rapid growth rates of the 1980s were not sustained into the 1990s, and a period of recession created a shake out, particularly in the manufacturing and small business sector. It has been noted by Jefferis (1996) that the economic downturn had a particularly negative effect on small and medium size enterprises created through financial assistance from government. He states:

> The growth of domestic markets slowed down and this affected a lot of firms. Many firms found that their markets were not growing in the way they had used to and that markets became more competitive. Many firms had access to FAP but they were not very successful at bringing about improvements in productivity. Often when their five years of FAP ran out they went under. **

In the latter half of the 1990s the economy has seen an upturn. It has been noted that this upturn has resulted primarily from increased government expenditure and continually improving revenues from the diamond mining industries. Rapidly rising private sector employment has ceased to be a feature of the Botswana economy with the private sector playing a gradually reduced role in providing formal sector employment.\(^6\)

It is now widely recognised that the domestic market is saturated and companies who wish to grow must consider export markets as an outlet for their products. In fact government is facilitating export-led growth by encouraging inward investment in large manufacturing projects such as the assembly of Hyundai vehicles from imported completely knock down kits. Government macro-economic policy is now being directed toward sustainable economic diversification emphasising

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\(^7\) CSO Employment Surveys and Labour Statistics.
\(^8\) Jobs created through the financial assistance policy have been defined as those which are attributable to businesses whose survival rate exceeded 5 years. See: Phaleng Consultancies (1995.)
\(^10\) In 1996 the contribution of the private sector to total formal sector employment dropped from 58.5% to 57.4 %. Annual Economic Report (1997) Ministry of Finance and Development Planning.
commercial investment based on economic viability and rising productivity. This 'new thinking' has been summarised as follows:

“Sustainable economic diversification must be viewed in the widest possible terms. It includes the diversification of production into new products, which can be sold to different markets, using new or adapted innovations and technologies, relying on different domestic and international inputs and resources, which are acquired from new suppliers, both domestic and foreign. Diversification will shift the structure of the economy towards those sectors which grow faster in the future, creating additional employment opportunities for workers and suppliers of domestic resources. It will also help to create forward and backward linkages throughout the economy, as local producers and resource owners, will also become suppliers to other local producers, who in turn will have their products demanded by other firms and consumers in Botswana.”

The future prospects for SMEs, therefore, will be based on their ability to adapt and survive in a new economic climate subject to increased levels of domestic and international competition. There will also be new opportunities, particularly where links can be forged with larger more technologically and export orientated companies.

The next section will examine the role of government policy towards SMEs since the 1984 Industrial Development Policy was implemented, and will summarise the successes and failures attributable to those policies.

1.2 The Policy Background to SME Development.

The framework for current policy towards SMEs was laid down in the 1984 Industrial Development Policy. Since then, policy has been developed and adapted in a piecemeal way in accordance with changing government priorities. The responsibility for policy towards SME development has been dispersed throughout many government ministries - principally agriculture, commerce and industry and finance and development planning. Briscoe (1995) defines the role of government in SME support in three categories.

- Firstly, the regulatory role of government in such areas as licensing, quality control and standards, consumer protection, employment rights and the enactment of the associated legal framework.
- Secondly, the promotion of SMEs through, for example, direct financial support, assistance with new business formation, and access to financing and preferential treatment designed to encourage local entrepreneurship in selected economic sectors.
- Thirdly, to facilitate the coordination and promotion of a small business support infrastructure, including NGOs, local authorities and private sector organisations.

This short summary of SME policy will deal primarily with promotional initiatives taken by the Ministry of Commerce and Industry since the early 1980s to stimulate the growth and development of SMEs. Some observations will also be made concerning the current policy environment, the growing importance of effective information handling for SMEs, and possible opportunities for ICT application.

Promotional initiatives by government have fallen into three main categories: direct financial support, training initiatives and assistance in marketing.

Direct Financial Support: The main vehicle for delivering direct financial support has been the Financial Assistance Policy (FAP) which has been administered centrally by the Department of Industrial Affairs. Responsibility for implementation of the programme is held by the Integrated Field Services Division (IFS) which consists of Business Management Development Services and Industrial Technology Support Services which are located in 20 stations throughout Botswana.

The Financial Assistance Policy (FAP)

According to ministry figures the programme has approved a total of about 7000 projects from 1982 to 1995 creating a total of 25,697 jobs. Of these, 7497 were under small scale grants, 14903 under medium and 7408 under large scale projects. The programme is designed primarily to reach the rural and semi-rural regions of Botswana and as a consequence most of the approved projects have been developed to meet local needs. This is reflected in the sub sectors which have benefited, where textiles, building materials and metal products have taken about 80% of the small-scale grants. In the medium and large scale allocations there has been some diversification although traditional sectors such as brick moulding, leather work, welding, carpentry and other 'low technology' sub sectors predominate.

The FAP has undergone three evaluations since its inception, the most recent being Phaleng Consultants (1995). The report, whilst praising the role of the programme in creating jobs for unskilled citizen employees and giving an introduction to business to many first time entrepreneurs, also points out a range of drawbacks of such a government administered programme.

- Firstly, such government intervention inevitably has the effect of distorting the market bringing about disequilibrium between supply and demand in various sub-sectors of the economy.
- It is also claimed that existing businesses who were not in receipt of grants were subject to unfair competition.
- The evaluation also noted low commitment from entrepreneurs, due primarily to their low overall stake in the business and relative lack of skills in the areas of marketing, management and bookkeeping.

Definitions of small, medium and large are as follows: small - fixed investment of under P75,000; medium - from P75,000 to 2 million; large - over P2 million. Small size grants are open to local citizens only, but medium and large are open to locals and expatriates. Department of Industrial Affairs Annual Report, 1994/95. Ministry of Commerce and Industry.
The justification for the continuation and expansion of the FAP will continue to be employment creation, particularly in rural areas. However, there is realisation that government sponsored programmes can only go part way in alleviating the expected employment gap. There is also much criticism of the administration and implementation of the programme. Briscoe (1995) notes that the FAP assists approximately only 8-10% of total SMEs in Botswana excluding those in services, construction, retailing, transport, tourism and the informal sector, all of which, until recently, did not qualify for support. In fact, SEPROT (The Small Enterprise Promotion Trust) a body which represents nearly all major non-governmental stake holders, considers that SME support should be widened and that government should cease to be the main promoter and implementor of small business support. They state:

“There is now fairly widespread belief that central government and parastatal bodies in most countries, including Botswana, have not been effective in promoting small enterprise development. We therefore recommend that resources such as FAP, training and counselling should be administered and managed at the local level by a tripartite partnership involving local authorities, NGOs and private sector organisations to encourage local business development” 13

Training Initiatives: Programmes specifically designed to develop business and technical skills for rural business development are implemented by Integrated Field Services (IFS). The training provided through IFS tends to be directed at two major sub sectors - garments and construction. Basic level training is provided in management skills, technical and craft skills. However, the major problem faced by citizen owned enterprises remains their lack of efficiency and productivity compared with foreign owned businesses, a fact admitted by the ministry themselves with regard to the construction sector:

* It is apparent that small and medium scale citizen contractors still fail to develop and compete more favourably against expatriate companies. Many contractors fall to draw up an effective working programme for the works and lack site productivity management skills. * 14

There are a wide range of public, private and non-governmental organisations which are offering training to fulfil small business needs. As well as state run training schemes, it has been estimated that there exists over one hundred non governmental organisations running training courses for entrepreneurs and crafts people. (Briscoe 1995) These include the Botswana Technology Centre (BTC) offering technical training and advice; the Rural Industries Innovation Centre (RIIC) offering management training with the aim of increasing rural productivity; the Brigades movement providing local training in craft based subjects.

A recent innovation in business training for entrepreneurs has been funded through UNDP - Enterprise Botswana. The objective of the project is to provide a 'one stop shop' for business advice and training. It is organised along the lines of a private

13 SEPROT's small scale enterprise policy recommendations. Taken from Briscoe (1995).
company and is aiming to provide a professional approach to promoting growth and development of small and medium size enterprises with growth potential. It represents a new departure in government sponsored training initiatives and is a sign of more business orientated approach to satisfying training needs.

Assistance in Marketing: Marketing is another area where government has attempted to provide support. This has also had a training element in the provision of counselling and advice on the marketing of a business's products. The other major area of support is export promotion. The main governmental organisation for the provision of these services has been the Trade and Investment Promotion Agency (TIPA). However, the future of this organisation is under review, since its performance was questioned in the mid-term review of National Development Plan 7 (NDP7), and a new export and trade promotion body is in the process of being formed.

Government also gives preferential treatment to local entrepreneurs in the marketing of locally produced and supplied products under the Reserved Activities Policy and the Local Preference Scheme. Certain economic activities have been reserved for citizens only. These are principally in the areas of retailing and the provision of traditional services such as security services. Industrial activities are also covered and include the baking of bread, manufacture of burglar bars, protective clothing, school furniture, cement and baked bricks, school uniforms and the milling of sorghum. It also includes many 'low skill' activities in the field of construction. It has been suggested that this policy has had the effect of reducing competition in these sub sectors, whilst prices have increased and productivity has remained low.

The local preference scheme, which has recently been changed to the Local Procurement Programme (LPP) is an industrial development programme intended to reserve a proportion of purchases by government exclusively for local manufacturing enterprises, either locally or foreign owned. The intention is to channel up to 30% of the government's annual budget for supplies to local small and medium size firms. In order for firms to qualify they must have an annual turnover in excess of 200,000 Pula and less than 5 Million Pula. 15

In summary, policy support for small and medium size enterprise development has covered the following areas:

- To allow business to thrive and grow within a sound macro-economic environment.
- To provide financial assistance for business start ups and expansion through the Financial Assistance Policy (FAP)
- To provide advantages for local suppliers when tendering for parastatal and central government contracts, through the Local Procurement Programme (LPP)
- To reserve certain economic activities for local citizen enterprises only through the Reserved Activities Policy.

15 See: Local Procurement Programme, 1st April 1997, Department of Industrial Affairs, Ministry of Commerce and Industry.
• To provide support in the areas of marketing and information provision, particularly on sources of financing and exporting.
• To encourage the formation of businesses in rural areas through the provision of training, technical support and other subsidies such as free rental of factory shells.

The policy environment is currently being revised towards SME development. The Small, Medium and Micro Enterprise Task force Report (1988) has recently made recommendations to government on how the institutional, regulatory and promotional policy framework should be updated. The list of recommendations made in the report include a large number where effective use of information may be crucial to effective implementation of the policy. Effective and efficient information handling may be critical in the following areas which are covered by the report:

• Effective communication channels through horizontal and vertical linkages from SMEs to the wider economy, including the provision of databases.
• Effective monitoring of firms and the collection of data on firms participating in government inspired support schemes.
• Improved efficiency in the delivery of services to businesses, through more effective communication with firms and the provision of relevant business information.
• Effective communication of information between national and local support structures.
• The proposed establishment of Business Assistance Centres, and their role as providers of communication and information services. (particularly in rural areas)
• Information and communication support for export market opportunities.

Although the report does make reference to the importance of effective communication and information provision for SMEs, there are no specific recommendations on how ICTs can be most effectively utilised in the process of business development and within SME support structures.
2.0 An analysis of the Enterprise Sector According to Firm Size, Location and Market Sector.

There is no single source of data which describes the detailed composition of the SME sector in Botswana. Government statistics on small business formation tend to be scattered between a number of ministries, and in most cases are incomplete or poorly recorded. However, a number of studies have attempted to collect information on the make up of Botswana’s SME sector, by gaining access to official statistics supplied by the Central Statistical Office (CSO) and by conducting field surveys in connection with various research projects.

Newell (1996) has summarised past research data and has made the following estimates of the number and sectoral distribution of SMEs for the period 1995/96. At this time, there were 32,300 registered establishments (inc firms) in Botswana, of which 83% were actively trading in June 1996. Official figures indicated the following composition of establishments:

- 20% had no employees at all. (Non trading Companies)
- 24% were small with 1 - 29 employees.
- 2% were medium size with 30 - 100 employees
- 1% were large firms with more than 100 employees
- 2% had working proprietors only
- 51% were of unknown size, but likely to be in the small category.

Briscoe (1997) has also produced the following statistics. That there are approximately 48,500 micro-enterprises, that is non-registered informal sector enterprises; 6,200 small enterprises employing 20 people or less; and 300 medium size enterprises employing between 20 and 150 people. In the small enterprise sector it was noted that the vast majority of businesses are located in urban areas (about 80%) and the average number of persons employed in such enterprises is 6 including the owner.

The Botswana Confederation of Commerce, Industry and Manpower (BOCCIM) Annual Report of 1996/97 shows a total membership of 1,492 firms, which includes 95 large scale firms with over 100 employees. The medium scale sector (26 - 100 employees) shows 265 firms and membership of small scale firms currently stands at 1,134 or 76% of the total. In terms of membership by location, 67.7% of all member firms are located in the two main urban areas of Gaborone and Francistown. with the remaining firms scattered throughout regional towns and large villages.

In the micro/small scale sector there have also been a number of attempts to collect and aggregate data: IFS (1994), Daniels and Fisseha (1992), Rempel (1993), Somolekae (1989), Lisenda (1997). All these studies suggest that micro or informal sector enterprises tend to be household run businesses employing one or two people and approximately 75% of business owners are women. Additionally 70% of these enterprises are in rural areas, with 65% involved in trading and 25%
involved in manufacturing. As mentioned previously, it is estimated that there are up to 50,000 such enterprises operating in Botswana.

The contribution of SMEs to national output is less easy to quantify. However, there is no doubt that the SME sector, both formal and informal, provides far greater contribution to employment than it does output. National output tables (for all industries) by areas of economic activity give the following picture of sectoral distribution (inc large firms).*

<table>
<thead>
<tr>
<th>BSIC Sector</th>
<th>1995/96</th>
<th>%</th>
<th>1995/96</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>132.40</td>
<td>5.5</td>
<td>563.1</td>
<td>3.8</td>
</tr>
<tr>
<td>Mining &amp; Quarrying</td>
<td>1133.90</td>
<td>46.8</td>
<td>4859</td>
<td>33.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>124.20</td>
<td>5.1</td>
<td>693.2</td>
<td>4.7</td>
</tr>
<tr>
<td>Electricity, Gas &amp; Water</td>
<td>57.70</td>
<td>2.4</td>
<td>270.6</td>
<td>1.8</td>
</tr>
<tr>
<td>Construction</td>
<td>96.00</td>
<td>4</td>
<td>858.4</td>
<td>5.9</td>
</tr>
<tr>
<td>Hotels &amp; Tourism</td>
<td>319.9</td>
<td>13.2</td>
<td>2489.1</td>
<td>17</td>
</tr>
<tr>
<td>Transport and Comms</td>
<td>66.5</td>
<td>2.7</td>
<td>504.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Business services</td>
<td>145.2</td>
<td>6</td>
<td>1613.3</td>
<td>11</td>
</tr>
<tr>
<td>General Government</td>
<td>325.7</td>
<td>13.5</td>
<td>2544.5</td>
<td>17.4</td>
</tr>
<tr>
<td>Social &amp; Personal Services</td>
<td>66.7</td>
<td>2.8</td>
<td>622.3</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2420.8</strong></td>
<td></td>
<td><strong>14631</strong></td>
<td></td>
</tr>
</tbody>
</table>


The overall contribution of SMEs to national output, however, cannot be accurately quantified from these figures, which include both large and small businesses. Manufacturing, in 1995/96, contributed 4.7% to total GNP. Of this total, a large proportion can be accounted for by the contribution of Botswana's two principle exported manufactured products - motor cars assembled from complete knock down kits, and textile products. In the case of manufactured goods for home consumption (as well as for exports) large firms make by far the largest contribution. SMEs overall importance to national manufacturing output, therefore, will be minimal, probably amounting to less than one percent.

In services, however, SMEs are likely to make a far higher contribution across a range of sectors, in areas such as tourism, business services, transport and construction. As the research progresses, it is hoped that more detailed and accurate figures can be produced as regards the overall contribution of SMEs to both output and employment. The following sections will look at the sectoral composition of the SMEs in more detail, and make some more accurate estimates of the distribution of SMEs across a range of manufacturing and service sectors.

2.1 Definitions of SMEs

For the purposes of conducting fieldwork surveys, and constructing the target population and samples, SMEs will be defined and categorised according to the definitions given in the SMME Task force report (1998). Firms are categorised primarily in term of number of employees as follows:

- **Survivalist Enterprises**: No paid employees. asset value minimal, hawkers, vendors, subsistence farmers, etc.

- **Micro Enterprises**: No formal registration, no more than five paid employees, no formal book keeping or record keeping, probably family run. small roadside store, mini-taxis, etc.

- **Very Small Enterprises**: Less than 5 paid employees. Enterprises may access formal markets and may use modern technology. May include professionals or artisans. Likely to have formal record keeping and registration.

- **Small Enterprises**: Grown from very small enterprises into established firms and will probably, but not necessarily, have a management structure, and may not be under the sole control of the business owner. A small enterprise will be defined as a registered firm which has less than 30 employees, and is likely to have an annual turnover of between P60,000 and P1,500,000.

- **Medium size Enterprise**: Owner/ manager controlled, but larger and more complex management structure. Separation of ownership and management likely. A medium size enterprise will be defined as a registered firm which has less than 100 employees and is likely to have an annual turnover of between P1,500,000 and P8,000,000.

2.2 The Distribution of SMEs According to Firm Size and Market Sector.

The following tables give an analysis of the total population of registered SMEs in Botswana, giving a detailed breakdown according to firm size and market sector, covering manufacturing, services and exporting firms. Large firms have been included for comparative purposes.
Table 2. Distribution of registered SMEs according to BSIC sector and firm size. (large Firms included for comparative purposes)

<table>
<thead>
<tr>
<th>BSIC Sector</th>
<th>NE</th>
<th>WPO</th>
<th>N/A</th>
<th>1-4</th>
<th>4-29</th>
<th>50-49</th>
<th>50-99</th>
<th>100+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>26</td>
<td>18</td>
<td>102</td>
<td>131</td>
<td>201</td>
<td>29</td>
<td>10</td>
<td>4</td>
<td>521</td>
</tr>
<tr>
<td>Fishing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Mining Quarrying</td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>20</td>
<td>14</td>
<td>105</td>
<td>151</td>
<td>403</td>
<td>74</td>
<td>41</td>
<td>43</td>
<td>851</td>
</tr>
<tr>
<td>Electricity, Gas &amp; Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Construction</td>
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<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>764</td>
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<td></td>
</tr>
<tr>
<td>Wholesale &amp; Retail</td>
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<td>244</td>
<td>737</td>
<td>2786</td>
<td>1761</td>
<td>119</td>
<td>58</td>
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<td>5895</td>
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<td>Hotels Restaurants</td>
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<td>10</td>
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<td>Transport and Comms</td>
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<td>11</td>
<td>160</td>
<td>120</td>
<td>109</td>
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<td>11</td>
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<td>60</td>
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<tr>
<td>Business services</td>
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<td>269</td>
<td>268</td>
<td>23</td>
<td>10</td>
<td>22</td>
<td>924</td>
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<td>Social Personal Services</td>
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<td>5</td>
<td>32</td>
<td>85</td>
<td>68</td>
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<td>1</td>
<td>1</td>
<td>182</td>
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<tr>
<td>Total</td>
<td>339</td>
<td>358</td>
<td>1555</td>
<td>3672</td>
<td>3275</td>
<td>342</td>
<td>178</td>
<td>188</td>
<td>8872</td>
</tr>
</tbody>
</table>

NE: No employees. (non trading)
WPO: Working proprietor only.
N/A: Information not available (But likely to be small firms 1-5 employees)

Figures do not include: Bars, bottle stores, Restaurants, cafes and canteens.

Source: Botswana Registry of Establishments. 1997. CSO.
Table 3. Distribution of registered SMEs according to BSIC manufacturing sub-sectors and firm size.

<table>
<thead>
<tr>
<th>BSIC Manufacturing Sector</th>
<th>NE</th>
<th>WPO</th>
<th>N/A</th>
<th>1-4</th>
<th>5-19</th>
<th>20-49</th>
<th>50-99</th>
<th>100+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>Meat and Meat Products</td>
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<td>14</td>
<td>1</td>
<td>1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dairy products</td>
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<td>4</td>
<td>13</td>
<td>1</td>
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<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain Mill products</td>
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<td>1</td>
<td>17</td>
<td></td>
<td>4</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bakery products</td>
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<td>2</td>
<td>5</td>
<td>12</td>
<td>27</td>
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<td>4</td>
<td>3</td>
<td>62</td>
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<td>Other Food products</td>
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<td>2</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>31</td>
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<td></td>
</tr>
<tr>
<td>Beverages</td>
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<td></td>
<td></td>
<td></td>
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<td>Tobacco products</td>
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<td>20</td>
<td>32</td>
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<td>8</td>
<td>62</td>
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<td>8</td>
<td>3</td>
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<td>5</td>
<td>108</td>
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<td>Tanning and leather</td>
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<td>1</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td></td>
<td>16</td>
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<tr>
<td>Footwear</td>
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<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood and Wood products</td>
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<td>5</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td></td>
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<td>5</td>
<td>11</td>
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<td>2</td>
<td>24</td>
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</tr>
<tr>
<td>Printing and publishing</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>14</td>
<td>24</td>
<td>8</td>
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<td>22</td>
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<tr>
<td>Chemicals</td>
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<td>5</td>
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<td>Rubber and plastic</td>
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<tr>
<td>Cement</td>
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<tr>
<td>Non-metallic mineral products</td>
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<td>11</td>
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<td>Basic metals</td>
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<td>Fabricated metal products</td>
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<td>Machinery and Equipment</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Radio, TV and Comms equip</td>
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<td></td>
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</tr>
<tr>
<td>Medical, precision, optical equip</td>
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<td>1</td>
<td>1</td>
<td>5</td>
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<td></td>
</tr>
<tr>
<td>Motor vehicles</td>
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<td>4</td>
<td>2</td>
<td>9</td>
<td>2</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other transport manufacturing</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Furniture</td>
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<tr>
<td>Manufacturing n.e.c.</td>
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<td>Recycling</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>14</td>
<td>105</td>
<td>151</td>
<td>403</td>
<td>74</td>
<td>41</td>
<td>43</td>
<td>851</td>
</tr>
</tbody>
</table>

NE: No employees.
WPO: Working proprietor only.
N/A: Information not available.

Source: Botswana Registry of Establishments. 1997. CSO.
Table 4. Distribution of registered SMEs according to BSIC services sub-sectors and firm size.

<table>
<thead>
<tr>
<th>BSIC Services Sector</th>
<th>NE</th>
<th>WPO</th>
<th>N/A</th>
<th>1-4</th>
<th>5-20</th>
<th>21-50</th>
<th>51-100</th>
<th>100+</th>
<th>Total</th>
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<td>Financial intermediaries (Bank)</td>
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<td>30</td>
<td>15</td>
<td>60</td>
<td>14</td>
<td>11</td>
<td>11</td>
<td>156</td>
</tr>
<tr>
<td>Road transport</td>
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<td>55</td>
<td>45</td>
<td>40</td>
<td>7</td>
<td>2</td>
<td></td>
<td>164</td>
</tr>
<tr>
<td>Passenger and transport</td>
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<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Cargo handling, storage, Warehousing</td>
<td>3</td>
<td>2</td>
<td>22</td>
<td>20</td>
<td>18</td>
<td>4</td>
<td>2</td>
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<td>71</td>
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<td>Retail services</td>
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<td>Courier Activities</td>
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<tr>
<td>Transport rental</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Personal Goods rental</td>
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<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Personnel and recruitment</td>
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<td></td>
<td></td>
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<td>Research and Development</td>
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<td>5</td>
<td></td>
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<td></td>
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<td>12</td>
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<tr>
<td>Legal, accounting, business management consultancy</td>
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<td>17</td>
<td>65</td>
<td>112</td>
<td>86</td>
<td>5</td>
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<td>3</td>
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<td>5</td>
<td>4</td>
<td>11</td>
<td>2</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Architectural, engineering and technical services</td>
<td>5</td>
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<td>3</td>
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<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Security and public order services</td>
<td>10</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Business activities n.a.s.</td>
<td>29</td>
<td>24</td>
<td>105</td>
<td>106</td>
<td>88</td>
<td>7</td>
<td>1</td>
<td>6</td>
<td>368</td>
</tr>
<tr>
<td>TV, radio and entertainment</td>
<td></td>
<td>1</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>News agencies</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>60</td>
<td>404</td>
<td>392</td>
<td>420</td>
<td>44</td>
<td>31</td>
<td>37</td>
<td>1483</td>
</tr>
</tbody>
</table>

NE: No employees.
WPO: Working proprietor only.
N/A: Information not available.

Source: Botswana Registry of Establishments. 1997. CSO.
Table 5. Distribution of registered SMEs according to Exporters Association of Botswana (EAOB) Exporting sub-sectors and firm size.

<table>
<thead>
<tr>
<th>Export Sub-sector</th>
<th>1-4</th>
<th>4-20</th>
<th>20-50</th>
<th>50-100</th>
<th>100+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverages</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Building Products</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Clothing Accessories</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cotton Towels</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Coffins and Caskets</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Cosmetics</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Electrical Goods</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Food Products</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Furniture</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Garments</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Handicrafts</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Hides and Skins</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Jewellery</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Leather and Products</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Linen</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Live plants</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Medicines &amp; Vaccines</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Minerals</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Motor Vehicles</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Packaging materials</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Stationary &amp; Office Supplies</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Tapestry</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Timber and products</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tissue products</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Misc Products</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>26</td>
<td>49</td>
<td>116</td>
</tr>
</tbody>
</table>

The data from the preceding tables shows that there are 9877 registered enterprises currently trading in Botswana. This total includes only commercial enterprises and excludes restaurants, cafes, canteens, bars and bottle stores. The size distribution of this population of firms is as follows:

Table 6. Distribution of total population of enterprises according to firm size (including large firms)

<table>
<thead>
<tr>
<th>Firm Size (No of employees)</th>
<th>1-29</th>
<th>29-100</th>
<th>100+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>521</td>
<td>434</td>
<td>39</td>
</tr>
<tr>
<td>Medium</td>
<td>851</td>
<td>659</td>
<td>115</td>
</tr>
<tr>
<td>Construction</td>
<td>764</td>
<td>602</td>
<td>84</td>
</tr>
<tr>
<td>Wholesale &amp; Retail</td>
<td>5895</td>
<td>5284</td>
<td>177</td>
</tr>
</tbody>
</table>

The largest proportion of small and very small enterprises are to be found in the retailing sector which makes up 60% of the total number of enterprises currently trading in Botswana. These are predominantly small food retail outlets and general stores. Manufacturing, construction and business services represent the most significant areas of business activity amongst small, Medium (and large) businesses. Firms offering personal and social services seem to be under represented.

Table 7. Distribution of enterprises within BSIC sectors showing small, medium and large firms.

<table>
<thead>
<tr>
<th>BSIC Sector</th>
<th>Total</th>
<th>%</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>521</td>
<td>5.2</td>
<td>434</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>Mining &amp; Quarrying</td>
<td>17</td>
<td>1.2</td>
<td>12</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>851</td>
<td>8.6</td>
<td>659</td>
<td>115</td>
<td>43</td>
</tr>
<tr>
<td>Construction</td>
<td>764</td>
<td>7.7</td>
<td>602</td>
<td>84</td>
<td>44</td>
</tr>
<tr>
<td>Wholesale &amp; Retail</td>
<td>5895</td>
<td>60</td>
<td>5284</td>
<td>177</td>
<td>20</td>
</tr>
<tr>
<td>Hotels</td>
<td>105</td>
<td>1.1</td>
<td>70</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Transport and Comms</td>
<td>447</td>
<td>4.5</td>
<td>299</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Financial intermediaries</td>
<td>156</td>
<td>1.6</td>
<td>105</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>Business services</td>
<td>924</td>
<td>9.4</td>
<td>762</td>
<td>33</td>
<td>22</td>
</tr>
<tr>
<td>Social &amp; Personal Services</td>
<td>197</td>
<td>2.0</td>
<td>185</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 9877  8412  518  180
Manufacturing firms make up 8.6% of the total number of enterprises trading in Botswana. Large firms will make the largest contribution to output, but the 774 small and medium manufacturing firms are likely to make a significant contribution in terms of employment.

Within the manufacturing sector (Table 3.) large and medium firms predominate in food and beverages; textiles and clothing; paper, printing and publishing; fabricated metal and wood products; and nonmetallic mineral products. Small and very small firms are also well represented in these sub-sectors, particularly in bakery products: textiles, clothing and leather; printing, paper and publishing; nonmetallic mineral products (primarily brick making) and fabricated metal products.

Within services (Table 4.) very small and small firms dominate - making up 82% of a total of 1,483 firms in the sub-sectors specified. These firms are widely distributed across a range of service activities: predominantly, transportation and cargo handling; legal, accounting and business management services; technical services and other business activities. Large and medium firms are to be found predominantly in the banking, security and road transport sub-sectors.

The export sector (Table 5.) is dominated by large and medium firms with food and livestock products, minerals, vehicles and textiles contributing to 95% of total exports in 1995. \(^{17}\) Only 32 very small or small firms have been identified as exporters. Tourism (including hotels) is also a major contributor to foreign exchange earnings and has a high proportion of very small and small businesses (86%) operating within the sector.

There have been a range of studies which have used representative samples to gain more detailed information on the operation and impact of small firms. In 1994 BOCCIM published details of an industry survey which used a sample of 161 firms from the total population of enterprises in Botswana. A number of their more interesting findings were as follows:

- Since 1992, investment in the finance and business services sector has surged. More than one third of firms in that sector report a start date of 1992 or later.
- Citizen investment is falling whereas foreign investment is rising.
- 62% of all new firms established since 1992 were in the capital.
- Since 1992 manufacturing investment declined.
- Building construction and retailing employ the most people.
- Firms receiving FAP have very low productivity (value added per employee) and are half as likely to export.
- Labour productivity in foreign owned firms is more than three times as high as citizen owned firms.
- 25% of medium and large manufacturing firms are exporting.

Briscoe (1995) in a similar study of small scale enterprises in urban areas, focused on the problems experienced in business start up. This survey revealed the largest sector of new business start up was in business services (42%) compared with only 21% in some form of manufacturing, 13% retailing, 12% in transport and 8% in construction. A cross over between sectors is also noted when individual firms are analysed. Another startling finding of this survey was the high level of business failure of approximately 80-85% after 5 years of trading. It is also estimated only a very small proportion 1-2% ever succeed in expanding their businesses.

2.3 The Location of SMEs

The following table shows the distribution of firms (inc large firms) between the main urban centres. The total number of firms includes all manufacturing and business services sectors, but excludes: primary industries, wholesale and retail, Construction, Restaurants and bars, financial intermediaries and real estate.

<table>
<thead>
<tr>
<th>Population Centre</th>
<th>Total No of Firms</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaborone</td>
<td>1365</td>
<td>57</td>
</tr>
<tr>
<td>Francistown</td>
<td>216</td>
<td>9</td>
</tr>
<tr>
<td>Selebi Phikwe</td>
<td>139</td>
<td>5.9</td>
</tr>
<tr>
<td>Lobatse</td>
<td>88</td>
<td>3.7</td>
</tr>
<tr>
<td>Maun</td>
<td>120</td>
<td>5</td>
</tr>
<tr>
<td>Other Towns/ Large Villages</td>
<td>345</td>
<td>14.6</td>
</tr>
<tr>
<td>Remote Locations</td>
<td>112</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2385</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Botswana Registry of Establishments. 1998. CSO.

The main fieldwork survey will initially cover very small, small and medium size enterprises in the formal sector which are registered. The target population of firms will be selected from the Botswana Standard Industrial Classification (BSIC) which will be used as the primary source of baseline data for construction of the main fieldwork survey sample. The revised Botswana Standard Industrial Classification categorises businesses and other private and public organisations according to their market sector. A full list of firms is contained in the Registry of Establishments which is compiled and produced by the Central Statistical Office (CSO). Survivalist and micro enterprises will not initially be included in the survey as it is considered that their information and communication needs can be best understood by first approaching those NGOs and support organisations involved in informal sector support.

*The register of Establishments is produced annually and contains basic statistics on all registered firms, relating to location, size and sector. The statistics are computerised and are categorised according to the revised Botswana standard industrial classification. (BSIC) The current statistics relate to 1997. They are updated annually, due to the fact that all establishments have to reapply for registration on an annual basis.
3.0 Results of a Pilot Survey

The Pilot phase of the research, which was completed during the first four months of 1998, had three main components:

- A sample of ten in depth interviews with small business entrepreneurs from a range of sectors covering both manufacturing and services.
- A series of key informant interviews with:
  a) Botswana-based IT Professionals
  b) Experts in small business support and development.
- A survey of the literature covering small business development, information needs, and ICT application.

Information Mapping

Information mapping considers the role of external information in the operation and development of the firm. Information flows can be analysed within a framework which considers the content, source, channel and recipient of business information. The role of forward and backward business linkages can be established as well as the interaction of the firm with the business environment.

- **Information flows through forward business linkages.** Information flows to and from existing markets or potential markets, giving rise to a demand for goods and services, which might include the following: Individual consumers, Distributors or agents, Government procurement agencies, Large corporate customers or Export customers and agents.
- **Information flows through backward business linkages.** Information flows to and from the suppliers of goods and services to the enterprise. These can be broken down into three main categories of business inputs: finance, labour and material resources.
- **Information flows relating to the external environment.** Information flows to and from external organisations which have an economic, legal or regulatory role in the economy. These information flows relate to factors which the enterprise, essentially, has no direct control. Additionally, information flows in relation to available technology and technical innovations.

Frameworks of Analysis.

A number of frameworks of analysis have been developed during the pilot phase of the project. These relate to formal and informal models of information, effective utilisation of business information, assessment of information needs, the role of information in the value chain. A number of these frameworks were used as a basis for constructing the research design, the survey methods and the data collection techniques.
Formal and Informal models

Analyses of the role of business information are mostly concerned with formal content, sources and channels: information which is gained from official sources, that is recorded and is available in a readable form. This might include technical information from a manual, market information from a market report or survey, official government information or on-line information from a data-base. Within the small business environment, however, informal information is likely to be of equal or increased importance. That is, information which is received from business contacts or from friends and family members. Informal information will be unstructured, probably unrecorded and may take the form of rumour or hearsay. However, it might also be information which is of vital importance to the business.

Data gathered/Information used

Information can be defined as data which is gathered, processed and made useful to its recipient. Good business information will be dependent on collecting data which is directly relevant to the running of the business, and accordingly, information gathered will only be of use if it increases the entrepreneur’s ability to sustain and develop business activity.

Assessment of Information needs

The information needs of the enterprise can be assessed by relating them to overall business goals. In this respect ‘critical success factor’ (CSF) analysis has proved popular as a method of enquiry. CSFs have been described as the limited number of areas in which results, if they prove satisfactory, will ensure successful competitive performance of the organisation. By firstly defining and measuring the factors which will be necessary for business success it will then be possible to more accurately define the information which will be required for effective business decision making.

Information in the Value Chain

Value Chain Analysis is a concept which was initially developed in order to breakdown the activities of the firm into strategically relevant activities, and analyse those activities individually in order to reduce overall costs and increase performance and efficiency. Essentially, it represents a systematic way of looking at a business which breaks down business operations into: inbound logistics, operations, outbound logistics, marketing, sales and service and support activities.

This type of analysis may prove useful by assessing the relative value of information at each stage of the business process. It can also be suggested that different parts of the value chain will be of more or less importance to different types of companies in different sectors, and hence information supplied to some business activities will be more critical than others. Understanding where and how value is added in the business will be crucially important when considering the application of IT solutions to business problems.


25
3.1 The Pilot Survey Sample

The primary aim of the entrepreneur interviews was to pilot the overall research design, gauging the appropriateness of the survey methods and testing the effectiveness of the data collection techniques, including methods of questioning, recording and the analysis. The pilot survey was also intended to cover a range of firms from different sectors, in order that an informed choice could be made of the sectors which would make up the target population for the main fieldwork survey.

The form of sampling for the pilot survey was based on non probability and was purposive in nature. This means that the pilot survey was interested in a variety of individual responses from a range of sources. Different questions were posed to different respondents. There was no need to generalise answers, and hence, the probability of being chosen as a respondent had no particular significance. Additionally, the purposive choice of respondent gave rise to a range relevant experiences or viewpoints.

The Pilot Survey Sample of firms.

<table>
<thead>
<tr>
<th>Firm</th>
<th>M/S</th>
<th>Sub-Sector</th>
<th>Firm size Employees</th>
<th>% Exports</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm 1</td>
<td>S</td>
<td>Software Support</td>
<td>1</td>
<td>0</td>
<td>Urban</td>
</tr>
<tr>
<td>Firm 2</td>
<td>S</td>
<td>Computer Services</td>
<td>2</td>
<td>0</td>
<td>Urban</td>
</tr>
<tr>
<td>Firm 3</td>
<td>S</td>
<td>Marketing/Business Dev</td>
<td>2</td>
<td>0</td>
<td>Urban</td>
</tr>
<tr>
<td>Firm 4</td>
<td>M</td>
<td>Textiles</td>
<td>10</td>
<td>0</td>
<td>Rural</td>
</tr>
<tr>
<td>Firm 5</td>
<td>M</td>
<td>Pharmaceuticals/Cosmetics</td>
<td>15</td>
<td>0</td>
<td>Urban</td>
</tr>
<tr>
<td>Firm 6</td>
<td>S</td>
<td>Computer services</td>
<td>40</td>
<td>0</td>
<td>Urban</td>
</tr>
<tr>
<td>Firm 7</td>
<td>M/S</td>
<td>Rural Business dev</td>
<td>40</td>
<td>20</td>
<td>Rural</td>
</tr>
<tr>
<td>Firm 8</td>
<td>M</td>
<td>Furniture</td>
<td>60</td>
<td>0</td>
<td>Urban</td>
</tr>
<tr>
<td>Firm 9</td>
<td>M/S</td>
<td>Funeral Parlour/Coffins</td>
<td>60</td>
<td>2</td>
<td>Urban/Rural</td>
</tr>
<tr>
<td>Firm 10</td>
<td>M</td>
<td>Garments/textiles</td>
<td>600</td>
<td>85</td>
<td>Urban</td>
</tr>
</tbody>
</table>

M: Manufacturing.
S: Services.

The entrepreneur interviews produced a range of data relating to the experiences, actions and opinions of entrepreneurs with regard to the content, sources and channels of business information within a range of business sectors. The following sections will present some preliminary observations arising from, albeit, a limited number of cases, but also taking into account information gained from the key informant interviews and previous, related, research contained within the literature.

3.2 Observations from the Pilot Survey

Responses were gained from interviewees covering three main areas of business information: market information, information of business inputs and information relating to the business environment. These categories were further broken down as follows:
<table>
<thead>
<tr>
<th>Market Opportunities</th>
<th>Business Inputs</th>
<th>Business Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Availability of Labour</td>
<td>Regulatory/legal</td>
</tr>
<tr>
<td></td>
<td>Material inputs</td>
<td>Competitors</td>
</tr>
<tr>
<td></td>
<td>Sources of Finance</td>
<td>Access to Technology</td>
</tr>
</tbody>
</table>

Market Opportunities:

- The ability of entrepreneurs to access information relating to new market opportunities is reduced due to the small and widely distributed domestic market in Botswana.

- In many medium manufacturing firms, government departments are the largest single customer. Information flows with government tend to be restricted to channels which are governed by formal tendering procedures.

- Information related to price and delivery are emphasised in dealings with government, rather than product specification, quality and standards.

- Small and very small manufacturing firms are generally unable to access government markets and feel that the local procurement programme, although providing the opportunity, fails to provide sufficient information and support to smaller businesses.

- Use of market information within very small firms is limited. However, within small and medium firms there was evidence of market information being used in the process of business planning. For example, in two manufacturing firms, customer records were recorded and analysed as part of a marketing strategy.

- The small service orientated firms interviewed were heavily reliant on business which was outsourced from larger businesses, and parastatal or non-government organisations. This was in contrast to the manufacturing firms surveyed, where there was no evidence of sub-contracting and other forms of communication with larger firms.

Business Inputs

*Availability of labour*

- All business sectors surveyed were subject to skilled labour shortages. Accessing information on the availability of skilled labour was not considered relevant, since there was a general belief that skilled labour is unavailable within Botswana.
• Within all sizes of businesses, training was done in house. Capabilities and skills are built up within businesses rather than being acquired from outside. In cases where employees had received previous training, this was considered to be of poor quality or unsuited to the needs of the business.

• None of the respondents reported any links with outside training institutions, except in the case of rural business development.

Material Inputs

• Most, if not all, firms surveyed were dependent on purchasing materials sourced outside Botswana, either importing directly or purchasing from importers and wholesalers. Many business owners had direct contacts with suppliers in S.Africa, Asia and Europe.

• Respondents from very small and small businesses reported difficulties in acquiring goods from outside the country and, in particular, delivery delays due to poor communications.

Sources of Finance

• The firms surveyed were all firms which had been established for a number of years. Three had been recipients of FAP grants, and had grown to become financially self-sustaining.

• Lack of information on sources of finance was not stated by the respondents as a constraint to growth. In most cases, new finance was not a requirement, due to the limited opportunities presented for new investment, expansion of production and growth of the business.

• In the small service firms interviewed, growth was constrained, not by lack of access to finance, but, predominantly, by shortage of suitably skilled manpower.

Access to Technology

• In the firms surveyed, technical information was sourced, primarily, outside Botswana. Either through direct acquisition of information from published specialist sources, or through the previously acquired knowledge of the business owner, who were predominantly expatriate.

• The citizen entrepreneurs interviewed had acquired their technical knowledge through previous work experience within companies in the same technical field.

• None of the firms interviewed had received technical assistance, except in the case of rural technology development.
Business Environment

Regulatory/legal

- In the past, lack of adherence to agreed international standards has encouraged low quality of home produced products. Information in this area is starting to become more widely available.

- The citizen owned firms surveyed were of the opinion that the regulatory and tendering environment tended to work against them and in favour of non-citizen owned companies.

Competitors

- Between the firms surveyed there existed widely differing competitive pressures. Within the manufacturing firms competition was the most severe, primarily from imported goods.

- The small and very small firms surveyed were mostly in technical services, and were operating predominantly in niche markets, and consequently not subject to much competition.

- Collaboration between competing firms was less apparent. In two cases there was evidence of contract sharing and mobility of labour between enterprises operating in the same markets.

Formal and Informal Information

Observations from the pilot study indicate that Botswana very small, small and medium enterprises tend to employ predominantly informal practices for the acquisition, processing and use of business information. From the range of firms interviewed the following generalisations can be made. It is noticeable, however, that there is a positive correlation between enterprise size and the greater use of formal information sources.

- Information content, is predominantly unstructured, unrecorded and qualitative, rather than structured, recorded and quantitative.
- Entrepreneurs tend to wait for market responses rather than carry out market research and analysis.
- Information relating to sources of finance or control of finance tends to come from family or associates rather than through independent advice.
- Information in relation to skills and training is more likely to be generated internally, through on-the-job training, rather than via external training bodies.
- Technical know how is accumulated through the previous knowledge of the business owner, and learning by doing, rather than through technical assistance.
knowledge of the business environment comes through experience rather than from external sources of business information.

Additionally, information is sourced predominately through informal business networks and channelled via interpersonal communication.

This picture of the ‘information seeking behaviour’ of small business entrepreneurs tends to conform with descriptions of entrepreneurial characteristics that previous small business sector studies, within Botswana have put forward, such as by Alexander (1983), Silcox (1992) and Briscoe (1994).

**Business linkages**

A second important observation relating to information flows in the SE sector relates to the lack of strong business linkages within the the economy in general, and where those linkages do exist they are often seen to be characterised by problematic or uncertain relationships.

Case study literature from other developing countries, such as by Nam Dae Woo (1993) in relation to Korea, shows that successful backward linkages from large organisations including those of sub-contracting, local sourcing and procurement have been a primary means whereby local small businesses have gained the necessary financial and technical resources to ensure business survival and growth. The Korean business linkages programme has succeeded in promoting the SME sector, from an extremely low base in the early 1980s, to a position now where it commands a total of 45% of value added in the manufacturing sector.

The New Industrial Development Policy for Botswana published this year, notes the lack of strong backward linkages within the industrial sector, and emphasises the importance of forging linkages through contractual relationships, joint ventures or partnerships, and points towards the importance of business linkages in:

- providing technical assistance through production designs, drawings, quality control, pricing and a disciplined approach to distribution and ‘just in time’ inventory and delivery schedules.

- Two manufacturing companies interviewed in the pilot survey, whose businesses had been built up largely through government procurement, reported a wide range of difficulties in contractual relationships and tendering procedures, particularly with regard to the free flow of information concerning product specifications and quality requirements.

- A lack of success in creating contracting relationships with larger private sector companies was also mentioned, due both to the lack of opportunity and the reluctance of large companies to assist in raising overall product quality and productivity levels within supplier firms in the small business sector.

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Market sector and Ownership

- An additional observation concerning information flows notes a variation in the information seeking behaviour of business owners depending upon market sector. The most noticeable differences arising between exporting and non-exporting enterprises, and also between firms whose business orientation is predominantly manufacturing or predominantly services. The owners and managers of exporting businesses, and enterprises involved in some areas of business services, showed a greater awareness of the importance of information acquisition, and a greater ability to process and use information for the benefit of their business.

- In the case of exporting companies, the more outward looking persona of the business owner combined with a greater range of business contacts, and a more in-depth knowledge of the wider regional and worldwide industry trends, created the conditions whereby critical information - relating to technology, markets and the business environment - was more likely to flow into the business. This in turn created positive advantages for those companies when competing in the home market. It was also apparent that the origin of the business owner is also a factor determining their ability to access, process and use business information.

- In the case of services, the ability of business owners to manage information seems to be determined by the demands of customers. In sectors where the customer demands a higher level of service quality, this itself demands more effective acquisition, processing and use of business information leading to a more effective delivery of the service offered.

Value Added

- Observations from the firms interviewed suggested that there is an appreciation of the importance of analysing value added with businesses, most noticeably amongst the larger and more established firms, rather than within those smaller and more recently established. There seemed to be less appreciation, however, of the possibilities presented by IT and information systems for improving the performance of critical business processes. It was interesting to note, however, that two outwardly highly successful, small businesses visited in the pilot survey, were both using dedicated customer support software packages, keeping extensive databases on their customers and their requirements.
4.0 Information and Communication Technologies and Economic Development.

As previously stated, the research will not initially be driven by analysing the opportunities and needs created by new technology, rather by examining the real information and communication practices of small business sector. However, in order to be able to eventually assess business needs in relation to ICT application, it is critically important to have a broad understanding of the capabilities and requirements of the emerging technology.

**Characteristics of ICTs.**

ICTs are pervasive.

- ICTs, as well as offering a completely new range of products and services, are also a group technologies, which are capable of revolutionising the process of production and delivery of all other industries and services. (Freeman, 1996)

ICTs are driving a dynamic process of change.

- The ICT revolution is a dynamic process of technological change arising from the convergence of computing, communications and multi-media technologies. The process of change is fuelled by ever rising processor speeds and faster communications giving rise to a continuous stream of new products and services, as well as transforming the old. (EMC technology Forecasts, 1997)

ICTs are user centred.

- In organisational settings, hardware and software are redesigned and reinvented by users in ways that defy linear models of system development. In business services as well as in the public sector, greater resources are being focused on the electronic delivery of services directly to consumers and 'citizens' as 'end users'. (Dutton, 1996)

ICTs demand organisational change.

- In the context of production, ICTs create new patterns of business organisation by the integration of office and plant and of design, production and marketing. In addition, it establishes much closer communication links between assembly plants and suppliers, and between manufacturers and distributors. (Perez, 1985)

ICTs are global in their impact.

- As more and more work involves the processing and exchange of information, the fusing of telecommunications and computing into the networked 'telematics' characteristic of ICTs means that this work can become more portable or mobile. With the global spread of telematics, the factors that confine the supply and demand of labour to one locality or nation state no longer apply. (Goddard, 1996)
In summary, the literature suggests that effective implementation of ICTs demands not only access to the technology, but also accompanying organisational changes, cultural adaptation and changes in outlook. In addition there will be demands for new skills and training requirements, as well as the ability to continually develop and adapt technology to user needs. The following section will examine some current trends in technological development.

4.1 Emerging Technologies

Although it is impossible to predict precisely how the emerging technologies will impact on the enterprise sector, it is possible to observe a number of short to medium term trends which will arise from current developments. These trends can be observed in three categories: multi-media, Interactive services and communications technology. Although it is not possible to accurately summarise what is a massive and complex field, it is worth reminding ourselves of some of the more important technological developments which will drive change in the business enterprise sector in the coming years.

**Multi-media** represents the integration of media - video, audio, text, data and graphics. Enhanced delivery capabilities, combined with advanced compression and switching technology, will enable increasing levels of integration of media elements, and with access to sufficient bandwidth, delivering near real time communication. Teleconferencing, for example, will require transmission speeds in excess of 2 million bits per second. Compare this with the current 64,000 bits per sec required by internet telephony and ISDN (Integrated Services Digital Network), and it can be appreciated that it is likely to be a number of years before high quality video-based multimedia services are likely to be widely available, at an affordable price, to small business users. However, advancements in the areas of audio, text, data and graphics are likely to be rapid, leading to a proliferation of new fully integrated business products and services, which will impact on a whole range of business, home entertainment and educational markets.

**Interactive Services** represents a whole new range of on-line services for consumers and business. These will encompass consumer-on-line services, ISPs and other on-line service providers, large and small. Services will be available through a wide variety of delivery devices, not only personal computers, but also Televisions, tele-faxes and other dedicated information appliances. As the technology becomes faster and more sophisticated users will exert greater degrees of control in manipulating content, and hence higher degrees of interactivity.

Interactive services will have the most immediate effect on business and the economy, and will also provide the widest range of new business opportunities. For example, in travel and tourism, retailing, financial services and banking, and news media and publishing. It is also predicted that the costs of not implementing new technology - in terms of lost business and the inability to access customers - will be high in such sectors.
Electronic Commerce

Electronic commerce is one area, which is predicted, will have a significant affect on the SME sector. Electronic commerce, of course, is already with us in Botswana, through the use of the telephone and credit cards, electronic payment and money transfer systems and smart cards. However, it is through the medium of the internet and on-line services that rapid expansion is likely to take place. Although at present only a fraction of 1% of total worldwide transactions are via the internet, it is predicted this will grow to 3% by the year 2001 and to 15% by 2007. (WTO, 1998). The internet, even though still in its early stages of development, exhibits a number of advantages for conducting commercial transactions. Its versatility means that all stages of the transaction can be completed on-line and across borders, including searching, ordering and payment; and in the case of products or services available in a digital form, also distribution and delivery. Another strength of the internet is its multimedia content and its potential for interactive, two-way, communication, such as the telephone provides for voice communication. Additionally, and probably most importantly, operating costs are very low regardless of distance and time spent online.

Set against these advantages, however, are a number of disadvantages. Whilst operating costs are low, setting up costs can be high for the purchase of equipment, leased lines and the creation and upkeep of professional quality web-sites. Other drawbacks of the internet include the inability to access sufficient bandwidth, and the problem of too much information of variable and unreliable quality. Additionally, until the internet becomes as easy and as user friendly as picking up a telephone it is unlikely it will attract quite the same mass usage.

However, the number of internet users is predicted to reach 300 Million worldwide by the year 2000, having risen from a mere 4.5 million users in 1985. In summary, the internet, will be used not only for conducting transactions, but also a multitude of other information exchanges, including e-mail, leisurely reading and searching for information, advertising and promoting personal or business causes, linking people in private or professional circles, and publishing, selling, purchasing or providing services. (OECD, 1996) Clearly, many of these activities will be ideally suited to the needs of small businesses.

Communication Technology represents infrastructure, communication platforms and value added services, the speed and effectiveness of which, will enable business and the community to effectively utilise some of the new digitally-based multi-media and interactive services outlined.

A brief glance at some selected ICT indicators (Table 8.) shows some comparisons between regional economies and advanced European economies. The figures illustrate the extent to which the low income and lower middle income countries still lag behind in term of telecoms coverage countrywide, as well as the huge difference in access to integrated digital services. However, Botswana shows a very high rate of internet usage compared with other lower middle income countries ranking 9th in a list of 65 comparable economies.²

Botswana has wisely invested in a highly sophisticated, fibre-based transmission network, together with a series of high capacity digital exchanges, and is continuing - via the New Telecommunications Act of 1996 - to provide an environment which will be conducive to increased private and public sector investment in communication platforms and value added services. However, the requirements of users, in the public and private sectors, have changed dramatically in the last decade and will continue to change in the next. User requirements for the foreseeable future will continue to move toward distributed systems supporting sophisticated PC-based applications, as the role of the mainframe computer, within large organisations, is reduced to that of central data servers. The emphasis, therefore, in infrastructure investment, will now need to switch to more efficient high speed digital access networks.

A move toward digital technology - frame relay supporting ISDN for example - will be necessary for the delivery of the higher bandwidths and the potential for the integration of media elements, and the quality and speed of operation which will satisfy growing user demands.

Table 8. Selected Telecommunications and IT indicators from SADC Region and three high income economies. (1996)

<table>
<thead>
<tr>
<th>Country</th>
<th>Teledensity</th>
<th>Teledensity</th>
<th>ISDN Users</th>
<th>Internet Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Main City</td>
<td>Main Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Africa</td>
<td>41.52</td>
<td>10.05</td>
<td>35.11</td>
<td>145.78</td>
</tr>
<tr>
<td>Botswana</td>
<td>17.95</td>
<td>4.83</td>
<td>0</td>
<td>34.22</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>6.23</td>
<td>1.47</td>
<td>0</td>
<td>1.68</td>
</tr>
<tr>
<td>Zambia</td>
<td>2.4</td>
<td>0.94</td>
<td>0</td>
<td>1.03</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2.3</td>
<td>0.3</td>
<td>0</td>
<td>0.16</td>
</tr>
<tr>
<td>Lesotho</td>
<td>6.29</td>
<td>0.9</td>
<td>0</td>
<td>0.24</td>
</tr>
<tr>
<td>Swaziland</td>
<td>20.87</td>
<td>2.1</td>
<td>0</td>
<td>5.33</td>
</tr>
<tr>
<td>Namibia</td>
<td>25.28</td>
<td>5.06</td>
<td>0</td>
<td>0.74</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2.4</td>
<td>0.34</td>
<td>0</td>
<td>0.28</td>
</tr>
<tr>
<td>UK</td>
<td>N/A</td>
<td>N/A</td>
<td>250</td>
<td>429.97</td>
</tr>
<tr>
<td>Norway</td>
<td>73.16</td>
<td>55.5</td>
<td>43.99</td>
<td>1138.17</td>
</tr>
<tr>
<td>Germany</td>
<td>56.58</td>
<td>45.38</td>
<td>1945</td>
<td>305.21</td>
</tr>
</tbody>
</table>


This will give Botswana the potential to deliver world standard telecommunications services to consumers (including the small business sector) in the years to come. If this is achieved, the emphasis may then have to switch to how a new range of interactive and multi-media services can be best adapted to the needs of users including that of small enterprises in a variety of business sectors.
4.2 The Impact and Distribution of ICTs in the Enterprise Sector.

Data obtained during the pilot phase of the project has been used to build up a very basic picture of the impact and distribution of ICTs in the SME sector. (Table 9.) The three left hand columns will contain those firms which might be described as forming the dynamic sector of the small business economy. They include the suppliers of ICT goods and services, the information intensive and the information-based service industries, and the export-led sectors. Within these three categories ICTs have been implemented and are being used to varying degrees.

Table 9. Sectoral Distribution of SMEs showing level of ICT intensity.

<table>
<thead>
<tr>
<th></th>
<th>Dynamic Sectors</th>
<th>Survivalist Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>Size</td>
<td>Small/Medium</td>
<td>Small/Medium</td>
</tr>
<tr>
<td>Ownership</td>
<td>Foreign</td>
<td>Citizen/Foreign</td>
</tr>
<tr>
<td>Sub-sector Examples</td>
<td>Equipment</td>
<td>Tourism</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td>Manufacturing</td>
</tr>
<tr>
<td></td>
<td>Providers</td>
<td>Local Retailers</td>
</tr>
<tr>
<td></td>
<td>Technical</td>
<td>Small-scale agriculture</td>
</tr>
<tr>
<td></td>
<td>Support</td>
<td>Rural Service Industries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICT Sectors</th>
<th>Information Intensive Sectors</th>
<th>Export-led Sectors</th>
<th>Traditional Sectors</th>
<th>Rural Sectors</th>
<th>Informal Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>Urban</td>
<td>Urban</td>
<td>Urban/peri-urban</td>
<td>Rural</td>
<td>Rural</td>
</tr>
<tr>
<td>Small/Medium</td>
<td>Small</td>
<td>Medium</td>
<td>Small/Medium</td>
<td>Small</td>
<td>Small/Small</td>
</tr>
<tr>
<td>Foreign</td>
<td>Citizen/Foreign</td>
<td>Foreign</td>
<td>Citizen/Foreign</td>
<td>Citizen</td>
<td>Citizen</td>
</tr>
</tbody>
</table>

ICT Distribution and Impact

High → Low

Those firms with a high potential for ICT utilisation are located almost exclusively in urban areas (with the exception of tourism). With the exception of manufacturing exporters, they are predominantly small enterprises with less than 30 employees - the majority with less than 10; and they are predominantly non-citizen owned and managed. It is within these sectors that you will find the majority of the 4000 or so e-mail addresses and the 50 or so web-sites which presently exist in Botswana.
The ICT Sector

Table 10. The Distribution of Firms in the Information and Communication Technology (ICT) sector.

<table>
<thead>
<tr>
<th>ICT Sector (BSIC)</th>
<th>NE</th>
<th>WPO</th>
<th>H/A</th>
<th>1-4</th>
<th>5-29</th>
<th>30-99</th>
<th>100+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office, Accounting &amp; Computer Machinery</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Telecommunications</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
<td></td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Computing, Data processing &amp; Software</td>
<td>2</td>
<td>10</td>
<td>19</td>
<td>20</td>
<td></td>
<td></td>
<td>1</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Source: Botswana Registry of Establishments. 1997. CSO.

The ICT sector (Table 10) itself is quite small, comprising only 67 firms in total. In telecommunications the sector is dominated by the Botswana telecommunications Company (BTC), although small and medium firms are now entering the market in areas such as cellular, satellite and other access provision. There are only two firms listed as manufacturing IT products - TEK (pty) Ltd and Fram Botswana (pty) Ltd, both based in Gaborone. In the IT services sector, 50 companies are listed, all of which fall into the small business category with less than 30 employees. These firms are involved in a range of computer, data processing and software sales and services and include local firms as well as subsidiaries and agents of larger international computer companies. Firms fall in to the following sub-categories of operation.

- Computer Supplies and Accessories
- Computer Aided Design
- Computer Consultants
- Computer Data Processing Services
- Desk Top Publishing
- Computer Distributors (& manufacturers)
- Computer Equipment Support and Maintenance
- Computer Networking
- Computer Schools and Training
- Computer Software

Information based Sub-sectors

Information based sub-sectors will include those firms for which information acquisition, processing and use is critical to business operation. These firms, which are predominantly small firms with less than 30 employees, will include financial services, business management services and other general business and technical services. (See table 11.) It would be expected that utilisation of IT would be wide spread, at varying degrees, in these service sectors. In the small scale
manufacturing sector only printing and publishing has been identified as comprising information based activities.

Table 11. Distribution of firms within information-based sub-sectors. (BSIC) (Totals don’t include large firms)

<table>
<thead>
<tr>
<th>Information based Sub-sectors</th>
<th>NE</th>
<th>WPO</th>
<th>N/A</th>
<th>1-4</th>
<th>4-25</th>
<th>25-99</th>
<th>99-299</th>
<th>299-999</th>
<th>1000+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Intermediaries</td>
<td>14</td>
<td>1</td>
<td>30</td>
<td>15</td>
<td>60</td>
<td>14</td>
<td>11</td>
<td>11</td>
<td></td>
<td>134</td>
</tr>
<tr>
<td>Management Services</td>
<td>17</td>
<td>17</td>
<td>55</td>
<td>112</td>
<td>96</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td></td>
<td>302</td>
</tr>
<tr>
<td>Business and technical services</td>
<td>5</td>
<td>3</td>
<td>19</td>
<td>15</td>
<td>29</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Cargo handling, Storage</td>
<td>3</td>
<td>2</td>
<td>22</td>
<td>20</td>
<td>18</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>Transport Rental</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>TV, News, Entertainment</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Air transport</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Research and Development</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Geological exploration</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Advertising</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Security Orgs</td>
<td>10</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Printing and Publishing</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>14</td>
<td>21</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td></td>
<td>53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>49</td>
<td>29</td>
<td>173</td>
<td>210</td>
<td>276</td>
<td>43</td>
<td>23</td>
<td>31</td>
<td></td>
<td>786</td>
</tr>
</tbody>
</table>

Source: Botswana Registry of Establishments. 1997. CSO.

**Export-led Sectors**

Table 12. Distribution of firms in export-led sectors.

<table>
<thead>
<tr>
<th>Export-led Sector</th>
<th>NE</th>
<th>WPO</th>
<th>N/A</th>
<th>1-4</th>
<th>4-25</th>
<th>25-99</th>
<th>99-999</th>
<th>1000+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining and Quaingy</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Meat and meat products</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Manufactured Exports</td>
<td>1</td>
<td>31</td>
<td>13</td>
<td>26</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>Travel and Tourism</td>
<td>7</td>
<td>3</td>
<td>24</td>
<td>26</td>
<td>71</td>
<td>16</td>
<td>10</td>
<td>13</td>
<td>170</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7</td>
<td>3</td>
<td>29</td>
<td>29</td>
<td>112</td>
<td>28</td>
<td>40</td>
<td>63</td>
<td>312</td>
</tr>
</tbody>
</table>

Source: Botswana Registry of Establishments. 1997. CSO.

It would also be expected that the level of ICT usage would be higher within exporting firms. Within Botswana’s exporting sector, small companies only play a very minor role, with medium and large companies dominating. Small firms, however, play a major role in earning foreign currency in travel and tourism. Emerging ICTs are expected to play a significant role within the tourism sector, and it is hoped that a number of tourism firms can be included in the main fieldwork...
Within traditional sectors, (including small scale manufacturing) rural sectors and the informal sector, the level of ICT usage will probably be non-existent. However, some use of computers might be expected within urban-based small-scale manufacturing firms or rural-based medium scale agricultural enterprises.

4.3 Factors Affecting ICT utilisation

Urban/Rural location:

In Botswana, a measure related to population density is used which categorises areas of the country into rural, semi-rural and urban. The term rural enterprise in Botswana tends to be considered as follows:

- Firms which are in particular sectors usually employing low or intermediate technology, i.e., small scale agriculture, provision of local services in remote areas, small scale industries servicing local needs, using traditional materials and methods.
- Large number of informal enterprises.
- Large proportion of women entrepreneurs.
- Low levels of education and skills and hence little or no ICT impact within the enterprises.

Thus far, in Botswana, the implementation and use of ICTs has been concentrated almost exclusively in the main urban areas. This would be expected due to the heavy concentration of industry and commerce in the two main urban centres of Gaborone and Francistown. However, in the context of ICT implementation, ease of access and the availability of ICT support services may also be factors determining the levels of usage in different geographical areas.

Any research study looking at the impact of ICT on rural industry development would probably start by examining the use of ICT in support agencies and the role of governmental and non-governmental organisations in providing information and advisory services.

**Hypothesis**

Utilisation of ICTs with the SME sector will be determined primarily by the location of the enterprise.

Test: Take a representative sample of enterprises from a range of comparable SME sectors and assess the level of utilisation of ICTs with regard to urban/peri urban/rural location.
Firm size:

Firm size is likely to be an important variable when considering the impact of ICTs. Large firms will tend to have more developed systems governing both internal and external information. ICT professionals may be employed as systems managers and the organisation may have a whole company policy towards information management.

Within medium-sized firms there may be a higher level of computerisation of business functions, such as inventory, invoicing, payroll, accounts, etc. but these systems are likely to have been introduced in more ad-hoc, less planned manner, and will probably be managed by non-specialist company employees.

Within small and very small firms investments in the hardware and software necessary to computerise business functions may neither be warranted nor afforded. In some specialist - information intensive - small firms, however, ICT usage may be very high.

Hypothesis

Current utilisation of ICTs with the SME sector will be determined primarily by the size of the enterprise.

Test: Take a representative sample of enterprises from a range of comparable SME sectors and assess the level of utilisation of ICTs with regard to firm size.

Ownership and background of the business owner:

This is quite an important issue in Botswana due to the proximity to South Africa and the important historical role South African entrepreneurs, as well as other nationalities, have had in the development of the business sector. Historically, the participation and the success of Batswana in business has been very low. Mainly due to the low level of education, literacy and urbanisation. The majority of Batswana business owners and entrepreneurs are to be found: firstly, in the informal sector, and secondly in the very small enterprise services sector.

Hypothesis

The Education and Background of the business owner will play a substantial role in the ability of SMEs to effectively utilise ICTs.

Test: Take a representative sample of ICT intensive and ICT non intensive enterprises and assess the education and background of the business owner with regard to the level of deployment of ICTs within the business.
Export and home market sectors:

The majority, if not all, of the exporting SMEs are foreign owned or Botswana registered companies owned and run by expatriates. Local entrepreneurs, often through joint ventures, have concentrated on home markets with a bias towards supplying government. The level of productivity in export-led sectors is generally higher due to the need to compete and to harmonise management practices with those of customers. A higher level of utilisation of ICTs may then be expected within exporting firms.

**Hypothesis**

A greater level of utilisation of ICTs within exporting SMEs leads to a greater levels of productivity, and hence competitiveness, in comparison with non-exporting SMEs.

Test: Take a representative sample of exporting and non-exporting firms and assess their relative productivity in relation to their level of ICT utilisation.

Manufacturing/Services Sectors:

Services have been the largest growth sector in Botswana over the past decade. Research undertaken by Briscoe (1994) and BOCCIM (1994) confirm this trend. For example, about one third of all the businesses in the business services sector have been created since 1992. Other research shows that 42% of all new businesses started between 1991 and 1993 were in the business services sector, whilst 21% were in some form of manufacturing. (13% retailing; 12% transport and distribution; 8% construction)

A larger number of citizen owned businesses are likely to be found in the services sector. BOCCIM research suggests 36% of business start ups in the services sector since 1992 have been citizen owned. (62% of all business start ups in Gaborone).

Results from the pilot survey suggest that service sectors tend to be more information intensive, and demand greater information handling skills, and hence, greater possibilities for ICT utilisation.

**Hypothesis**

The benefits of IT utilisation will be seen predominantly in services rather than within manufacturing sectors.

Test: Take a representative sample of IT intensive and IT non-intensive firms from comparable sectors and assess those firms with regard to a range of factors which determine business success or failure: ie, profitability, growth, sustainability, productivity.
4.4 Constraints to ICT Utilisation.

Initial results from the pilot survey indicate there are both internal and external constraints which inhibit effective ICT utilisation within SMEs.

Internal Constraints

The first set of constraints relate to those factors which are internal to the individual enterprise. As already pointed out most small business could not afford or would not be inclined to seek outside help and advice in the running of their affairs. This means that the successful application of ICTs for solving business problems will be primarily dependent upon the level of understanding, awareness and training of the business owner or manager.

- A large proportion of business owners are lacking in the necessary ICT skills required to sustain their businesses within a competitive environment.

- Small business entrepreneurs are disinclined to spend either the time or the resources on improving their ICT skills, and would rather depend on informal assistance from family and friends and advice through business contacts.

- Business owners of very small businesses and recent business start ups, are constrained considerably in applying ICTs to even to the most basic business processes, due to lack of ICT awareness and basic training.

- Within larger or more established businesses, the business owners, although possessing the basic ICT skills, will more than likely not possess more advanced ICT skills and knowledge to appreciate either the requirements or the possibilities presented by emerging technology.

External Constraints

A second set of constraints relates to those factors which are external to the business, relating to the availability of quality ICT education and training and to the ability of SMEs to access professional advice.

- Small business owners who venture into the private market to enhance their computer skills will find a wide range of computer schools who may offer basic, or even advanced computer skills, but which tend to be unrelated to the particular business needs of an aspiring entrepreneur in a specific sector.

- When making ICT purchases, small business owners are prey to a range of predominantly sales orientated ICT equipment suppliers, who offer varying degrees of after sales service. Many of which, but by no means all, may only offer limited advice on questions of installation, software support and the training needs of the business.
4.5 Policy Issues.

It is not yet feasible to make any practical recommendations on how policies should be developed toward information and communication technologies for the development of the SME sector. However, at this stage, a number of relevant policy issues can be outlined. These can be considered in two categories: 'Enterprise strategy issues' and 'Enabling policy issues'.

Enterprise Strategy Issues.

ICTs and Productivity: It is often presumed that investments in ICTs will automatically lead to rising productivity, whether in the context of large scale computerisation in the large firms or small scale investments in individual firms. However, evidence from past research, tends to suggest that ICT investments can have both positive and negative affects, and in many cases, positive productivity benefits are not always easily attainable.

"The productivity gains through ICT are realised through cost reduction, with reduction in material inputs, labour and capital. The relative share of these reductions differ across industries and services and over time, but labour saving is a principle source of cost reduction. In addition, ICT use may make it possible to produce more or higher quality with the same level of inputs" (UNIDO, 1995)

In the high income countries the largest productivity gains have been achieved in the manufacturing sectors. This has resulted from high levels of automation combined with smoother integration of individual production processes and more cost effective control of inputs and outputs. Productivity gains have been made through reducing the overall costs of production - principally through labour saving, and in response to high overall labour costs. Within Botswana's small and medium scale, predominantly non-exporting, manufacturing industries - labour costs are comparatively low. It could be argued, therefore, there exists little incentive for labour saving through investment in automation or more efficient ICT based management processes. Within larger exporting companies, however, the incentive to invest in ICT-based processes will be greater due to the need to offer higher quality merchandise and to harmonise management practices with those of potential customers.

Support for Informal Information Flows: Successful implementation of ICTs can only be achieved if built upon pre-existing information and communication practices which are both effective and efficient. Results from the pilot survey indicate that SMEs depend heavily on informal information, of variable quality, gained through accessing local business networks. SMEs can benefit from a higher degree of access to such local business networks (through the formation of business associations, for example) and from raising the quality of business information available through such networks. (such as through support from business assistance centres, for example)
Overcoming ICT Constraints: Internal ICT constraints relate primarily to issues of education and training for business owners and employees. Initially, the level of awareness of ICT issues for small businesses needs to be raised. Business owners need to be made aware of the potential benefits and the possible drawbacks of implementing ICT systems.

Additionally, any accreditation scheme for SME training providers needs to make provision for assessing ICT skills, as well as those of business start up, financial management and marketing. All training providers should be able to offer an ICT component in their courses or training programmes.

Enabling Policy Issues.

Provision of ICT infrastructure: As was stated previously, the primary enabling role of government will be to provide the necessary investment in access infrastructure which will enable the enterprise sector to access and use emerging technologies.

However, government also plays a crucial role as the dominant purchaser of ICT goods and services. The current planned phase, under NDP7, for the development of the Government Data Communications Network will consume vast amounts of ICT investment and ICT manpower resources. Large scale programmes for computerisation are either planned or underway across a wide range of government ministries and departments as well as within the parastatals. It is vitally important that this investment can be mobilised, as far as is practicable, to build ICT capacity in the private sector, with the intention of strengthening existing firms and also supporting new start ups in ICT services. In this respect, the further development of policy toward subcontracting, outsourcing and privatisation will need to be considered. It could be argued that the long term viability of ICTs in Botswana will be determined primarily by the strength and efficiency of private sector, particularly, small and medium size, businesses in such areas as software development, network support and service provision.

ICT Capacity Building: The Revised National Policy on Education has placed increased emphasis on technical and vocational training, and has reorientated the education system toward the world of work by broadening the curriculum and encouraging new subjects, such as computer studies, business studies and design and technology.

Even with the rapid expansion of secondary education and substantial investments in new technology in schools, the vast majority of secondary school pupils are still entering the world of work with little or no computer awareness. The number of schools delivering computer and business studies is still very low, and there is a critical shortage of teachers. Therefore, even though the number of educated school leavers is growing rapidly, there still remains major gaps in their basic knowledge, in respect of business skills and computer literacy. It would seem that more urgent and focussed action may be required in this area.
Intervention to promote ICT use in SMEs: At present in Botswana there doesn’t exist any coordinated programme to promote the awareness and effective use of ICTs within the small business sector, and within the community at large, excepting some isolated initiatives which have been undertaken by NGOs working in the field.

Contrast South Africa, which actively coordinates ICT-based community and business expansion initiatives under the National Information Technology Forum (NITF), or Mauritius, who are coordinating ICT support for business under the national Information Technology strategy Plan. These initiatives have included the establishment of local business service centres, and community-based information centres, as well as so-called rural telecentres. It is intended during the course of the research to visit such small business centres in order to assess their overall effectiveness in providing external ICT support.
Summary and Conclusions

This paper has presented work carried out during the pilot phase of the research project. Thus far only a very limited set of data has been produced and the main fieldwork for the project has yet to be carried out. Therefore, the summary and conclusions are presented only as observations and as pointers toward the future nature and direction of the research.

An analysis of the target population of registered SMEs within Botswana has been carried out. This has shown that there are approximately 10 thousand commercial enterprises, including large firms, trading in Botswana (excluding bottle stores, bars and restaurants) Small firms (1-29 employees) account for 85% of all registered enterprises, medium firms (30-100 employees) account for 5.2% and large firms (+100 employees) 1.6%. The remainder are registered firms but non-trading.

60% of all registered firms are in the retailing sector, which is made up predominantly of small and very small enterprises. Manufacturing firms comprise 8.6% of the total number of firms, construction 7.7%, business services 9.4% and transport and communications 4.5%. The manufacturing sector contains a higher proportion of large and medium firms and the services sectors contain a higher proportion of small and very small firms. Only 32 small firms (less than 29 employees) have been identified as exporters.

Within small and medium size enterprises, the acquisition of external business information is done largely through informal, rather than formal, channels and sources. This observation was made within all sizes of enterprises and across a range of sectors. Generally entrepreneurs do not access formal sources, such as provided through support agencies, public information institutions or on-line services. Rather, business owners depend, primarily, upon a network of informal business contacts, including suppliers and customers, scattered locally, regionally and worldwide.

The ability of small and very small firms, many of which are citizen owned, to access business information, is constrained due to their lack of access to informal information networks. The overall lack of strong business linkages between large and small businesses also represents a barrier to the flow of technical, managerial and market information.

The background and education of the business owner is an important factor which governs the firms ability to access critical business information, and then to make profitable use of that information for the good of their business. Businesses involved in exporting seem to have an advantage in terms of their ability to acquire, process and use business information. This is due to having a wider market reach, and hence a wider knowledge of market trends and requirements. Exporting businesses are also more highly motivated to improve their information systems in order to harmonise their business practices with that of the international competitors and with their customers.
Implementation of information and communication technologies (ICTs) within the SME sector has thus far taken place primarily in urban areas (Gaborone and Francistown). ICT utilisation has been higher in three main business sectors: information-based businesses and financial services, large (and to some extent medium) export-led manufacturing firms and the tourism sector.

Small and very small businesses utilising ICTs are found predominantly in the business services (inc ICT sector) and tourism sectors. Manufacturing SMEs, generally, do not make use of ICTs, either within management systems or within embedded automated production systems.

The potential for ICT utilisation within some Botswana small and medium business sectors is high due to the existence of a relatively highly sophisticated transmission and access network. Although countrywide teledensity still remains low by international comparison, it is high by regional standards. Additionally, telecommunications liberalisation will allow for a new range of value added services which will benefit the small business user. There has also been a particularly high take up of new ICT services, such as the internet, in Botswana. This may put Botswana businesses in a good position to take advantage of emerging technologies such as will be provided by electronic commerce and other on-line business and consumer services.

However, the constraints to ICT utilisation are wide ranging. Firstly, the general lack of IT awareness and IT literacy within the country as a whole, particularly the gap that exists between urban and rural areas. Secondly, the cycle of low productivity, poor product quality and lack of sophistication in management practices which exists in many sectors of the economy - most noticeably in small and medium scale manufacturing. And thirdly, the lack of support and training for ICT implementation in the business sector.

The Botswana Ministry of Commerce and Industry has recently set up a Small Enterprise Task Force, which has recently reported its findings. Within this document no specific recommendations were made concerning ICT support for small and medium sized enterprises. However, the Ministry is currently in the process of formulating an implementation framework for a new science and technology policy. It is hoped that, upon completion, this research will make a positive contribution to policy discussions and will be able to put forward useful recommendations on how ICTs can be most effectively used at all levels of the enterprise development process.
Selected References.


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Mr Richard Duncombe completed a Masters Degree in Science and Technology Policy Studies at the Science Policy Research Unit at the University of Sussex and is currently completing a PhD with the Institute for Development Policy and Management at the University of Manchester. He has a number of years experience in the field of technology and industrial policy research, as well as undergraduate teaching, and management experience in the private sector. He is currently working for the Botswana Ministry of Education implementing new Design and Technology and Computer Technology programmes in senior secondary schools in Botswana.
BIDPA Publications

Working Paper Series

BIDPA Working paper 1

Granberg, Per

A Note Concerning the Revision or rebuilding of the MEMBOT Model. Some Preliminary Observations and Suggestions. BIDPA, 1996. RESTRICTED.
The paper discusses the structure of the existing MEMBOT model (Macroeconomic model for Botswana). The limitations of the current model are identified and a need to revise it is noted.

BIDPA Working Paper 2

Granberg, Per

A Study of the Potential Economic Effects of AIDS. Some Preliminary Thoughts. BIDPA, 1996.
Given the current rate of HIV/AIDS infection in Botswana, there seems a need to analyse its economic impact. It is suggested that BIDPA may take an initiative towards this end. The paper presents some preliminary and tentative ideas about such a project.

BIDPA Working paper 3

Duncan, Tyrrell (ed.).

This inception report sets out the various steps planned in completing the study, which comprises a statistical review of poverty utilising the 1985/86 and 1993/94 Household Income and Expenditure Survey. The study will focus six special areas: Basic Education, Preventative Health, Labour Based Public Works, Destitute Policy, Financial Assistance Policy and Arable Land Development Programme.

BIDPA Working Paper 4

Isaksen, Jan.

The paper attempts to draw lessons from policy experiences in Eastern Asia. On the basis of such lessons, the paper suggests a number of practical policy steps which hopefully would be relevant to the policy debate in Botswana. It argues that a resumption of rapid economic growth through diversification and industrialisation are the most important contributions to the acceleration of employment creation in Botswana.

BIDPA Working Paper 5

Granberg, Per.

A Revised Poverty Datum Line for Botswana. BIDPA, June, 1996
The paper is part of a larger study of poverty and poverty alleviation in Botswana, undertaken by BIDPA for the Ministry of Finance and Development Planning. The paper presents revised estimates of the Poverty Datum Line (PDL) for Botswana, needed to analyse the household income and expenditure survey for 1993/94 and 1985/86 in terms of poverty.

BIDPA Working Paper 6

Gergis, Abdalla.

The paper notes the challenge facing Botswana, giving particular attention to the changing role of the state and the need to adjust the regulatory environment. Recent economic developments in Botswana are discussed, as are the questions of international competitiveness and the search for an engine of growth for the economy.
BIDPA Working Paper 7

Fdzani, N.H., P. Makepe and J. Thalefang
The impact of trade liberalisation on Botswana's beef and maize sectors. BIDPA 1997

The paper examines the Botswana beef and maize sectors in terms of structure, main activities and market distortions. The origins and sources of these distortions are analysed to determine how their removal would bear upon the various stakeholders. The paper also attempts to sketch implications of regional integration.

BIDPA Working Paper 8

Isaksen, Jan.
Data Requirements and Methodologies for Multi-country Research.
The paper was presented at a workshop on developing a research agenda for accelerated development in Sub-Saharan Africa Held in Harare, Zimbabwe, March 1997. It presents data and methodology for co-operation at national, regional and continental levels in research. It concludes that there is need for international co-operation build on national priority research.

BIDPA Working Paper 9

Gergis, Abdalla

The paper was presented at a seminar on Competition, Productivity and Privatisation. It draws on lessons of experience as well as existing knowledge about privatisation, briefly addressing the main issues discussing how privatisation can be planned and implemented successfully.

BIDPA Working Paper 10

Greener, Robert
The Impact of HIV/AIDS and options for intervention: results of a five-company pilot study.
BIDPA, 1997

The paper was written for the Botswana National Task Force on AIDS at the workplace. It presents results from a study of the impact of HIV/AIDS, based on a sample of five companies in Botswana. It concludes that the impact to date has been small, because the HIV epidemic is still too recent to have developed into an AIDS epidemic.

BIDPA Working Paper 11

Harvey, Charles.
The role of Africa in the global Economy: the contribution of regional co-operation, with particular reference to Southern Africa. BIDPA, 1997

The paper was written at the request of the Vice President and Minister of Finance and Development Planning. The paper notes that Africa's importance in the world economy has declined over the years and argues that this, and the extreme poverty in most of Africa, calls for analysis of ways to reverse the trend. Prospects for regional co-operation and integration are discussed as possible ways to accelerate economic growth in Southern Africa.

BIDPA Working Paper 12

Dithong, Molapisi.
Poverty Assessment and Poverty Alleviation in Botswana BIDPA 1997

The paper discusses the nature and extent of poverty in Botswana, drawing data from the Study of poverty and poverty alleviation in Botswana conducted by BIDPA for Ministry of Finance and Development Planning.

BIDPA Working Paper 13

Gergis, Abdalla

A summary report of the proceedings of the Seminar on Competition, Productivity and Privatisation.
BIDPA Working Paper No. 14

Lisenda, Lisenda


The study analyses the characteristics of Small and Medium-Scale Enterprises (SMEs) in Botswana highlighting the educational background of owners and exposure to business related training, geographic location of enterprises, premises of operation, age of enterprise, and size of enterprise by number of employees, sales and total investment and activity. Also considered are administration and financial sources of the enterprises. Record keeping is assessed by size of enterprise, gender of operator and source of finance of enterprise. Problems faced by SMEs are highlighted.

BIDPA Working Paper No. 15

Granberg, Per.

A simple formula for forecasting the Botswana urban population total. BIDPA, February 1998

The paper establishes a simple relationship between urbanisation and economic growth. The relationship is intended as a simple "annex" to the revised MEMBOT model (forthcoming), capable of providing quantitative estimates illustrating the likely nature of urban population changes under alternative economic scenarios.

BIDPA Working Paper No. 16

Sesinyi, Magdeline.


Gives a brief literature review on minimum wages and their possible effects on employment, with particular focus on the likely effects of minimum wage introduction on the two excluded sectors, namely the Domestic and Agricultural Sectors. It briefly outlines research results on minimum wages from past studies, highlighting their main recommendations. The paper concludes that minimum wage increases results in trade-off, and no matter how well intended come with a price in the form of lost jobs for some and increased benefits for others.

BIDPA Working Paper No. 17

Jefferis, Keith, Charles Okzahalam and Tebogo Matome

International Stock Market Linkages in Southern Africa. BIDPA, 1999

Stock markets are taking on an increasingly prominent role in financial development, and many developing and transition economies are establishing stock markets as part of financial reform processes. In theory stock markets can contribute to the mobilisation of savings and the allocation of investment, but there are questions as to whether this works in practice. One important issue is whether stock markets are efficient (in the financial sense), and a related question is whether share prices reflect economic fundamentals; both of these questions are important in addressing whether stock markets properly allocate capital. Another issue relates to the question of international linkages between markets: with greater integration of capital markets globally, financial market developments appear to be rapidly transmitted between markets around the world. While this can have beneficial impacts, in terms of improving the global allocation and pricing of capital, it may be disruptive if international capital flows are large relative to national markets and economies. This paper addresses pertinent issues in the context of stock markets in three southern African countries: Botswana, Zimbabwe and South Africa.

BIDPA Working Paper No. 18

Duncombe, Richard

The Role of Information and Communication Technology in Small and Medium Enterprise Development in Botswana. BIDPA, October 1998

The paper analyses the role of information and communication technologies (ICTs) in small and medium enterprise (SME) development in Botswana. It outlines the economic and policy background to SME development, and presents an analysis of the SME sector with regard to firm size, location and market sector. It presents the results of a pilot survey of firms in the SME sector examining the information and communication practices of a small sample of firms. Current developments in information and communication technologies are outlined, and some preliminary findings relating to ICT impact on SMEs are summarised. Finally, some policy considerations are mentioned and the objectives of the main fieldwork phase of the project are outlined.
BIDPA Working Paper No. 19

By Harvey, Charles

The impact on Southern Africa of the financial crises in Asia and Russia BIDPA, June 1999

The countries of southern Africa have not suffered seriously from "financial contagion", which is the short-term and sometimes devastating impact of financial crises in other countries. The first stage of financial contagion occurs through the markets for foreign exchange, shares and bonds. The second stage, which can be even more devastating, occurs if trouble in financial markets causes a crisis in the country's banking system, as happened in several Asian countries. South Africa's economy is potentially the most vulnerable to Southern Africa to financial contagion, because it has highly developed financial markets which are open to inflows and outflows of foreign capital. However, the economic cost of financial contagion has been limited in South Africa because the country's banking system is sound. Zimbabwe has been similarly protected from the worst effects of financial contagion. Financial markets in the other countries of Southern Africa are very underdeveloped, which limits the first stage of financial contagion; this is fortunate, because some of them have unsound banking systems. All of these countries are actively trying to develop their financial sectors, however, so that their relative immunity to financial contagion may be reduced in the future. This will strengthen the case for maintaining macroeconomic balance, realistic exchange rates, and absolutely sound banking systems.

BIDPA Working paper 20

Jeferris, Keith The Long Term Impact of Structural Economic Change on Government Spending. BIDPA, June 1999

Botswana’s current economic objectives centre on diversification away from its historical dependence on diamonds and government. Such diversification will change the structure of the economy, and has important implications for the ability of government to raise revenue through taxation and therefore for its ability to finance its expenditure. This paper explores the likely impact of diversification on government’s revenue raising ability and hence on the magnitude of its overall role in the economy. It uses projections over a 20-year period to simulate possible scenarios for taxation and the size of government. The key point is that any diversification will cause government revenues to fall, in relative terms. The diamond sector is extremely profitable, and those profits are taxed at a very high rate; as the economy diversifies, other sectors will emerge that will be less profitable and less highly taxed. The projections in this paper show that under a variety of different assumptions about sectoral growth rates, and taxation and spending, government will have to significantly reduce its role in the economy. Such a change will have major implications for choices to be made about the allocation of public expenditure.

Publications Series


In the years around 1990, the Botswana economy experienced a period of “boom” conditions, eventually followed by a “burst”. The paper sets out to analyse this experience, trying to explain the underlying factors, and to draw out policy lessons.

2. Gergis, Abdalla (ed.)

The publication contains the proceedings of the joint BIDPA/MCI seminar held in September 1996. The volume includes the seminar report on group discussions of the draft industrial development policy and the background papers presented by speakers at the seminar. The report summarises the issues raised during the two days of discussions.

3. Gergis, Abdalla (ed.)

This document presents highlights of the conference and of papers presented by speakers. The report captures the essence of the debate on the future of Lome Convention and highlights main issues that emerged from the consultation process.
4. Granberg, Per.

*Exchange rate, inflation and competitive: an analysis of the relationship between Botswana’s Exchange and Inflation Rates and its implication for the competitive strength of her producers*

The publication contains findings of the project: Study of Botswana’s exchange rate policy. The publication details simple input/output based model for analysing the exchange rate question, and employs it to draw out the implications for various sectors of the economy, under alternative exchange rate scenarios. It goes on to analyse the available statistical evidence, and draw comparison to model results. Finally, it discusses the rationale, and possible revision, of the current exchange rate policy for a broader perspective with special reference to the likely implications of following a significantly different policy.

**Serials**

1. *BIDPA Briefing*
   A quarterly newsletter, with topical supplements, that provides regular comment and analysis on all aspects of Botswana economy.

2. *The BIDPA Newsletter*
   A quarterly newsletter reporting on events, projects and general activities of the Botswana Institute for Development Policy Analysis (BIDPA).