Information and Communication Technologies (ICTs) enabled trade facilitation in Botswana

Patricia M. Makepe¹, Kgomotso Montsi² and Chidozie Njoku³

Abstract

This paper explores the use of Information and Communication Technologies (ICTs) in the facilitation of trade in Botswana. Its aim is to improve the understanding of the role ICTs can play in enhancing trade through better trade facilitation. Trade facilitation is considered as the simplification and harmonization of international trade procedures. The main findings of this study are that Botswana is still in the early stages in the use of ICTs in trade. Several factors were found to be responsible for this, including low internet and very low broadband penetration, high computer prices, the high cost of services, and low IT literacy in the country. Respondents in the study perceive ICT applications for trade and border management in Botswana to be a novelty as it is still at its infancy stage. Greater advocacy, awareness and facilitation for ICT use and adoption are recommended.

Keywords: trade facilitation, ICTs, simplification, harmonisation, international trade procedures, internet.

1. Senior Lecturer in Economics, Department of Economics, University of Botswana, email: makepepm@mopipi.ub.bw
2. Lecturer in Economics, Department of Economics, University of Botswana, email: kgomotso.montsi@mopipi.ub.bw
3. Ph.D student, Department of Economics, University of Botswana
Introduction

Over the last few decades, the structure of production and business supply chains have become increasingly internationalized. They now encompass the liberalization of trade, finance and transport systems. More recently, revolutionary developments in the area of information and communication technologies or ICTs (Henderson, 1995; Grainger, 2000, 2007), greater competition and competitiveness among firms trying to take advantage of market liberalization and business opportunities (Prahalad and Doz, 1986) make ICT-enabled trade facilitation essential.

ICT enabled trade transactions are cost-effective, and they stimulate regional and international trade. This is because the use of ICTs has the effect of substantially reducing the difficulties associated with moving goods through ports of entry. Currently, the efficiency and the effectiveness of customs and other border procedures in Southern Africa are lagging behind other regions worldwide (World Bank 2011). This is a disadvantage since it is widely acknowledged that the adoption and use of ICTs for trade by countries can contribute significantly to the development and renovation of its established economic and social sectors by reducing inefficiencies. This is because ICTs not only enhance trade facilitation, but they also change the concept of trade-related Government services through the introduction of various ICT-enabled techniques and services such as paperless trade documentation and real-time information sharing among stakeholders within and across national boundaries. This paper seeks to assess the extent to which Botswana is ready to make the shift to ICT-enabled trade facilitation and regional integration.

Methodology

The study used both primary and secondary data, and employed both quantitative and qualitative approaches for the analysis of primary data. Data was collected from key public and private sector stakeholders, using structured questionnaires on the following areas: knowledge of ICT, adoption and use, practices and attitudes, and challenges and opportunities regarding the use of ICTs for intra- and inter-regional trade. Open ended questions were included to get qualitative data from the respondents, on factors that may negatively or positively influence the use of ICTs for trade.

From a total of 11 stakeholder groups, a sample of 60 respondents
was drawn. Purposive sampling was used due to the nature of the study. Respondents included key informants from relevant ministries, parastatal organisations, banks and customs administrators who use ICTs in their daily activities. The Ministries included those of Infrastructure, Science and Technology; Transport and Communications; Foreign Affairs and International Relations; Trade and Industry; and trade related parastatal organisations such as Botswana Meat Commission (BMC), Botswana Unified Revenue Services (BURS), and Botswana Export Development and Investment Agency (BEDIA). Members of the Botswana Export Manufacturers Association (BEMA), an association of private manufacturers in the country who export to the SADC region and beyond, were also interviewed as part of the study.

Secondary data were collected by reviewing existing literature on ICTs for trade in Botswana, trade facilitation and regional integration. This included a brief examination of the relevant policies, strategies and programmes that have been implemented by the Botswana Government in this area.

Productive Government expenditure necessarily includes investment in ICT infrastructure in part. That the development of ICT infrastructure can enhance economic growth and improve the livelihoods of the poor as well as boost economic diversification is known. For example, some developing countries have proven that concentrating on ICT production and service sectors can help the economy grow, as demonstrated by growth in Asia in the 1990s (OECD, 2005). Economic growth in Botswana has been accompanied by a significant investment in infrastructure and measures to improve human development. One such major investment in ICT was the East Africa Submarine System (EASSy) and the West African Cable System (WACS), launched in February 2011, in which the Botswana Government invested P70 million and P250 million respectively (Kebadiretse, 2011). These investments were made as part of efforts by the Government to address the high cost of bandwidth that was seen to be an impediment to ICT growth in terms of investment and uptake for a long time. It is expected that access to WACS will greatly reduce the cost and increase the speed of connection, thus facilitating connection and access to the internet by a greater proportion of the population (GoB, 2011). Consequently, these investments will accelerate economic growth and provide affordable access.
Trade facilitation in Botswana: Profile and challenges

Botswana’s tariff policy is governed by SACU, and it has been in place since 1910 (World Bank 2010). The country is also a member of the fifteen-country SADC Trade Protocol, which was signed in 1996 and came into force in 2000, leading to the launch of a free trade area in August 2008. Botswana also belongs to the seven-country SADC Economic Partnership Agreement (EPA) group, and was one of the four members who signed an interim EPA with the EU in June 2009. This interim agreement enables Botswana and the EU to work towards a full EPA covering services and investment.

According to the World Bank’s Ease of Doing Business Index, Botswana remained in the top 25 percent of institutional environments conducive to business in 2009, being ranked 45th out of 183 countries, after having earned 7th position on the 2007/08 top 10 Doing Business reformers list. The country has computerized its business registration system, simplified registration formalities, and protected investors by making it easier for a company’s shareholders to sue its directors. Reflecting the extent of trade facilitation in the country, Botswana has also improved in the ‘trading across borders’ category by licensing more customs brokers, which has spurred competition and led to lower customs brokerage fees.

That trade facilitation is regarded as an important factor in attracting foreign direct investment is evidenced by several trade facilitation initiatives that have been implemented in the country. For example, institutions such as BEDIA have been set up to facilitate trade and investment initiatives and the country now has a Competition Policy which plays a big role in fostering a competitive trade environment.

In addition, the Botswana Unified Revenue Services (BURS) uses the ASYCUDA++ system to manage customs duty payments, goods declaration and processing, risk management, cargo control and pre-shipment inspection and revenue accounting (Munyaradzi and Holler, 2010). A total of fourteen customs stations (all commercial border posts and five regional offices) have been computerized, significantly reducing clearance times. Other achievements include greater transparency in customs procedures and a reduction in cumbersome paperwork at border posts. Further, BURS has an extensive website that provides information on rules and regulations, trade statistics, tax rates and online forms that are required for customs clearance. This is complemented by portals of BEDIA and the Botswana Export Credit Insurance and
Guarantee Company (BECI) which provide information on business, credit and investment opportunities in the country.

It is evident from the above that the country has made considerable progress in seizing the opportunities provided by growing access to broadband networks, applications and standards to enhance the flow of goods and services across national borders through ICT-enabled trade facilitation. However, progress towards system-wide coordination, through a national single window, has moved more slowly than the initiatives discussed above. Progress has been particularly slow in Botswana compared to other countries. For example, BURS still uses the ASYCUDA++ programme, which is behind both its successor, the Web enabled ASYCUDA World programme, and the country-based customs automation systems in other African countries like Senegal and Kenya in terms of enabling a national single window system from delivering promised gains in cost, time and reliability.

In the case of Botswana, reliance on ASYCUDA++ has been a drawback in the efforts to enhance the capacity of the BURS, particularly in using advanced techniques for risk management and in moving towards a national single window. This problem occurs also in other countries that are still using ASYCUDA++ and have not been able to upgrade to the Web-enabled ASYCUDA World.

Other initiatives include achieving transparency in customs procedures. For example, X-Ray equipment has been installed by BURS at the Tlokweng border post. This will assist in monitoring what goods get imported into the country and curbing the smuggling of goods into the country. There are still a number of other trade facilitation initiatives Botswana has to undertake regarding the permit system, restrictions on capital and financial services in areas such as animal health and production, health and safety, crop production and forestry and, more importantly on quality standards.

**Facilitation of efficient and transparent flow of goods**

The key impediment to international trade and transport of goods within and outside Botswana was seen by most (79%) of the respondents to be poor infrastructure. This was followed by delays or inefficiency in the application of customs, which was reported by 36% of the respondents. About 35% of the respondents cited delays or inefficiency in the application of immigration or quarantine procedures at border checkpoints and difficulties or inadequacies in multilateral or bilateral
trade and/or transit agreements as serious impediments to the flow of goods. In addition, the lack of enforcement of adequate performance standards for application of border crossing formalities and procedures was seen as a major impediment by 21%, of the respondents. About 29% saw incompatible vehicle standards and transport regulations as a key impediment to the flow of goods. Lack of harmonization of customs tariffs and regulations was also seen as a key impediment by 21%, while inadequate and inaccurate information and networking problems resulting in the delay of communication were seen as a key impediment to the movement of goods by 14% of the respondents respectively.

Most respondents (69%) from Government institutions engaged in trade facilitation stated that they provided ICT-based services to their stakeholders through a website. Fifty four per cent (54%) of the respondents stated that they provided ICT based services through automated customs systems. ICT-based service provision through online portals on rules and regulations and automated cargo system ranked lowest at 8% each.

In Botswana, ASYCUDA is the main software and platform used for customs automation. About 63% of the respondents stated that they used the system mainly for goods declaration and processing. Thirty seven and a half percent (37.5%) of respondents said that they used ASYCUDA for cargo control and pre-shipment inspection, while 62.5% use it for payment processing and 50% for revenue accounting. Only one respondent reportedly used it for collaboration with a regional or international customs agency and two stated that they felt that there was some progress towards custom automation and modernization. These same two respondents indicated that such progress included plans for upgrading and expansion. However, the respondents understood and appreciated the benefits and opportunities that would come with customs automation.

**Promotion of efficient logistics and trade infrastructure support**

Most respondents (66%) said they used ICT for fraud detection in transit goods and half of them mentioned that they used mobile and wireless technologies to detect fraud in transit goods. Three stated that they used scanners while only one mentioned using an ICT platform to promote air cargo efficiency. This was mainly for import and export processing, cargo control and pre-shipment inspection.

When asked about their overall view on the application of ICTs in
trade and border management in Botswana, 46% of the respondents felt that it was still at the preliminary stage, while 27% said that, while this was the case, it was promising and would ensure efficient trade. About 18% felt that it would take time for the country to assimilate properly.

Half of the respondents said that they saw the role of regional cooperation institutions and initiatives as being to provide support, capacity building and setting up the guidelines for the use of ICTs. In addition, they also felt that regional institutions should provide technical advice, financial support for infrastructure development and for the establishment of rules and regulations governing regional trade. They also felt that there was a need for them to open up opportunities for panel discussions on trade issues by member states.

Over the next five years, respondents felt, there was a need to focus on skills and knowledge development about ICT use in trade (38%), provision of more ICT related programmes (38%), availability of more infrastructure (25%), efficient service delivery as a result of more ICT usage (25%), more global competitiveness, harmonization of ICTs to the rest of the economy and the development of more ICTs based hubs for the movement of goods (all 12.5%).

**Facilitation of private-private platforms and information systems to document and support the efficient flow of goods and services**

In reference to the role of policy makers in Botswana, 44% of the respondents saw their remit as being to harmonize border procedures or policies, ensure that the policies implemented are the right ones and that flexible ICT policies are applicable to today’s markets. Half of them saw their role as being to provide guidance in the use of ICTs in Botswana and to facilitate and coordinate its implementation.

About 44% of the respondents saw the role of donors and development partners as being to provide support for infrastructure development and getting people involved in research and development in order to test the best use of ICTs. In addition, 32% said that they could offer sponsorship to qualified graduate students to further their studies on ICT-related issues. About 22% of the respondents suggested that donors and development partners needed to be involved in running workshops in order to sensitize and educate their stakeholders on new developments in the trade and ICT related areas.
**Private sector companies**

The study also administered a separate questionnaire to private companies involved in import and export activities in Botswana to gauge their perceptions on the role of ICTs in trade and regional integration. The companies that were interviewed came from the following major business activities: customs clearing and freight forwarding, handcraft manufacturing, terminal operations, professional services, ICTs, handling of containers, equipment hire and delivery. All these entities stated that they had lodged customs declaration in Botswana. Eleven (61%) of the entities that were interviewed stated that they lodged their declarations manually, 14 (78%) stated that they lodged their declaration electronically using their own office computers. Only one company stated that while it lodged declarations electronically, it had to use a computer that did not belong to it in order to do so.

The various problems that firms experienced in lodging declarations manually had to do with time delays which translated into lost business (82%). Other issues mentioned included too much paper work (cited by 36% of respondents), delays at customs (27%), packages being opened (18%), and documents being lost or misplaced (9%). The respondents were also asked a question pertaining to their adaptation to electronic or internet lodgement, in order to identify whether their company had its own IT system and what this system included. About 93% of the companies stated that they had computers with internet connectivity, 5% stated that they had computers with software that computes taxes due, 29% stated that they had a system that allowed their clients to send purchase orders electronically and only 7% stated that they scanned and emailed documents.

Most companies (72%) stated that they had made new investments in IT as a result of the electronic lodgement of entries while the remaining 28% stated that they were yet to make this investment in IT. The respondents also indicated that they were experiencing difficulties adapting to an electronic form of trade and transactions. The most significant sources of problems for 65% of the respondents were the high cost of investing in IT equipment, software and connectivity. Connectivity problems ranked second with 47% of respondents saying they had problems related to connectivity. Next was the high cost of training staff with 35% of the respondents reporting problems related the cost of staff training, followed by the major adjustments in office procedures and in the organization that would have to be made.
Some of the companies indicated that they had received some support from the customs office and other institutions in adapting to ICT based transactions. About 46% were provided with encoding assistance, while another 46% had their staff trained, 27% were provided with the ASYCUDA software package, while 18% were allowed free use of BURS computers.

The following were stated as benefits of shifting to the electronic format in terms of lodgement and clearance times. About 73% of the respondents stated that the shift to the electronic format resulted in faster transactions and therefore saved time. Some 60% stated that it was more efficient. While 13% reported that it allowed for better control and 7% stated that it allowed for the tracing of entries. Other stated benefits of ICT use in trade facilitation were that it allowed for easier assimilation of information 47%, it was quicker 33%, efficient 20%, made crossing the border easier 13%, widened the market 13% and meant that there was less paperwork involved 7%.

In terms of what needed to be done to support firms adjust to electronic lodgement, the majority of the companies (60%) reported that there was a need to re-introduce training for customs clearing authorities. About 26% reported that there was a need to create awareness about the overall benefits which the transition to the electronic format enabled in terms of cost saving to the companies that made the change. About 20% of the companies responding to this question said that the provision of a website which could give access and enable them to monitor their cargoes would go a long way in encouraging companies to shift to the electronic format. Only 6.7% reported that the provision of upgraded software in time and skills development would encourage them to make the shift to the electronic format.

The following are the perceptions on what needs to be done to develop automation in trade facilitation in Botswana, ranked in the order of importance derived from the responses. About 43% reported that there was a need to hold workshops for stakeholders on the issue in order to create awareness and sensitize stakeholders as well as advocate for the use of the electronic format. Just over twenty-one percent 21.3% said that the introduction of computers for clients at the border post would be useful, and the same proportion felt that the adoption of policies that were compatible with the programme and the improvement of efficiency of the current IT systems that are in use would be helpful. Some 14.3% said that more reliable access to ICT programmes would be useful and
better protection or more security to individual companies’ orders could also be helpful.

Examples of ICTs in national trade, including evaluation

Table 1 shows how various companies and institutions participating in various business activities are using ICTs in the running of their day to day trade. As can be seen from the table, all the companies interviewed have IT systems that they use for trade transactions. Not all the companies have internet connectivity at their place of business, so that even though they have an IT system, the lack of internet connectivity clearly prevents them from using that system for transactions. Businesses also stated that their IT systems calculate taxes due. The main problem that they mentioned was that even though they had IT systems and were willing to change, a lot of transactions were still done manually with only a few border entry points having been computerized, and this inhibited their use of ICTs.

Table 1: Examples of ICTs in national trade

<table>
<thead>
<tr>
<th>Main business activity</th>
<th>Custom clearing and freight forwarding</th>
<th>Crafts</th>
<th>Manufacturing</th>
<th>Terminal operation</th>
<th>ICTs</th>
<th>Handling of container, equipment hire and delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company has its own IT system for import/export transactions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Computer with internet connectivity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Software that computes taxes due</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>System that allows clients to send purchase orders electronically</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documents are scanned and emailed</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In all the cases above, institutions and companies indicated that there was room for the enhancement of their use of ICTs in trade. Several initiatives that were suggested are shown in the Table 2 below.

**Initiatives suggested for ICTs in national trade**

Various companies and institutions participating in various business activities are using ICTs in the running of their day to day trade. All the companies interviewed have IT systems that they use for trade transactions. In all cases, institutions and companies indicated that there was room for the enhancement of their use of ICTs in trade. If the SADC region is to achieve proper regional integration with paperless trade, an overarching regional organization such as SADC must play a central role in coordinating all of the different actors involved (Governments, traders and donors).

**Table 2: Initiatives that need to be undertaken to improve performance of ICTs use in trade by companies in stated business activities**

<table>
<thead>
<tr>
<th>Main business activity</th>
<th>Custom clearing and freight forwarding</th>
<th>Crafts</th>
<th>Manufacturing</th>
<th>Terminal operation</th>
<th>Professional services</th>
<th>Es</th>
<th>Lead catalyst on productivity issues</th>
<th>Handling of container, equipment hire and delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>BURS should monitor/supervise customs clearing agencies</td>
<td>✓</td>
<td></td>
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</tr>
<tr>
<td>Introduce computers for clients at the borders</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Training/workshop for all stakeholders</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institute policies that are combatable with the program</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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SADC is firmly committed to the collective implementation of the SADC Programme of Action on ICTs, which recognizes the positive impact of ICTs on society (SADC, 2010). It has also adopted the Regional Indicative Strategic Development Plan (RISDP), which has singled out ICT as an enabling tool for socio-economic development and regional integration. The RISDP provides strategic direction for the efficient implementation of the SADC programme of action over a 15 year period (Makumbe, 2011). In it, priority interventions are identified and overarching long term integrated development goals and objectives are aligned with discrete policies and priority intervention areas. It also enhances and strengthens inter-sectoral linkages and synergies.

In the area of ICT development, a three pronged strategy has been adopted focused on: a) ensuring that a proper regulatory and policy framework for attracting investors is in place; b) infrastructure development; c) community participation and governance in ICT development and ICT business development as well as human resource capacity building for ICT development.

An important SADC achievement has been the strengthening of the ICT regulatory framework in the region by the Communications Regulatory Authority of Southern Africa (CRASA) (CRASA Prospectus 2011). The proliferation of private operators in the SADC region bears testimony to the successful creation of an enabling environment through the institutionalization of harmonized regulatory reforms. SADC is now able to craft its own harmonized regulations and standards, in conformity with ITU standards. However, work still needs to be done in this area to ensure that there is border harmonization in the region.

As far as ICT infrastructure development is concerned, SADC has
committed to the interconnection of member-countries through optical fibre links, to ensure that intra-SADC traffic can be navigated as cost effectively as possible with minimum impediments. ICT infrastructure is more than 90% complete. In accordance with the SADC Regional Infrastructure Development Master Plan, the Government of Botswana and other SADC Governments have committed to invest in international connectivity through the cable systems EASSy and WACS. Cooperation between SADC member states is important as much more can be achieved through collective action in the region that if things are done by individual countries alone. However, most of the above initiatives need to be fast tracked as, despite some positive strides, things are still done manually.

Going forward, there is a need to move towards and achieve seamless cross border trade, and this can only occur if there is reliable ICT infrastructure. Countries that are lagging behind in technology will need assistance with funding and capacity building. The role of development partners and donors will be to provide such assistance to enable training to occur and technology procurement.

Recommendations

The main findings of this study are that Botswana is still in the early stages of ICTs use in trade. Several factors are responsible for this, including low internet connectivity due to very low broadband penetration, high computer prices, the high cost of services, low IT literacy in the country, power supply problems, and a perception of poor quality of service.

The survey findings show that the respondents perceived ICT applications for trade and border management in Botswana to be a novelty as it was still at its infancy stage. Most trade arrangements are still handled manually. Almost 78% of the respondents reported that poor infrastructure was the most serious impediment to international trade and the transport of goods in and out of the country. The biggest challenge for interconnecting border management agencies was seen as the lack of a proper organizational set-up or framework for implementation. They also indicated that there was a need to build capacity to use ICTs so that they could be used effectively.

As a result of these findings, the following recommendations are made:

There should be support from Government and business
associations for increased evidence-gathering, education, awareness-raising and advocacy on the role of ICTs in trade facilitation, economic diversification and poverty eradication. In addition, there is a need to harmonize all customs regulations, documentation and ICT systems, and to integrate customs systems. There should also be a common website which local customs departments can link to. This website should include agreed communication, protocol, fees, penalties, procedures and commencement dates, criteria for preferential treatment, certifying bodies and contacts. All countries in the SADC region should strive to move towards single window clearance that includes the relevant inspection authorities at all points of entry. In addition, all points of entry must be equipped with the necessary infrastructure to facilitate ICT-enabled trade management, including power generators as backup in the event of power cuts. The use of non-intrusive scanning equipment is needed to reduce physical inspection of goods at points of entry. This has already begun in Botswana with one border post having installed X-ray scanners. At a regional level, SADC must continue to provide leadership and garner assistance from donors for infrastructure development, community participation and governance in ICT development, ICT business development as well as human resource capacity building for ICT development.

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