



Economic Commission for Africa (ECA)

THE AFRICAN DEVELOPMENT FORUM '99

POST ADF SUMMIT



ELECTRONIC COMMERCE IN AFRICA

1 Introduction

The phenomenon of *Electronic commerce*, or “e-commerce” goes back to the earliest days of computer-based transactions between companies. Early on it was known as *electronic data interchange* (EDI) and included the placing of orders, stock transfers, invoicing, etc. With the advent of the Internet and more latterly the Worldwide Web, e-commerce has, however, catapulted into the public consciousness, especially since it now embraces the individual consumer as well. E-commerce has come to be regarded as *the promotion, advertising, sale and distribution of products and services by electronic means*. But principles and practice continue to evolve and—importantly for Africa—now include government transactions, both between government and business (for procurement purposes etc.) and between government and the public (for delivery of services, public access to government information, etc.). Indeed, recognising the rapidly expanding territory, new terms are already in common use, such as e-business and e-government. For convenience this document will refer throughout to e-commerce, it should be recognised that the notion includes the ever-widening scope described above.

This paper reviews the main outcomes of the ADF 99 deliberations around e-commerce, places e-commerce in the international context, identifies potential markets and promising products and tele-services for African entrepreneurs, highlights current constraints to the growth of e-commerce in Africa, suggests ways to overcome such barriers and offers concrete actions to promote and accelerate the growth of all aspects of e-commerce in Africa. The “Pan-African Initiative on e-Commerce,” a study which materialized out of ADF’99 and commissioned by the ECA in collaboration with IDRC, is presented here in brief to address the debates during the Forum. The next section summarises those concrete actions in the form of a proposed e-commerce initiative.

2 The Proposed E-commerce Initiative

The proposed e-commerce initiative has a strong regional orientation.

- First, to insure that Africa retains or possibly improves its share of the world trade in goods and services;
- Second, to make full use of Africa’s international comparative advantage in human resources cost and of the fact that, especially in the area of teleservices, Africa’s chances of success are not constrained by its traditional logistical weaknesses;
- Third, to create a vibrant E-entrepreneurship sector which will stem the tide of emigration of Africa’s brightest entrepreneurial resources;
- Fourth, to provide significant numbers of entry, semi-skilled and skilled jobs in and out of the major African urban centres;
- Fifth, to create job opportunities which do not discriminate in terms of sex, age, religion, ethnicity, mobility and disabilities; and
- Sixth, to do all of the above well within the short window of opportunity provided by very fast-paced global competition.

2.1 Goal

The overall goal is to create a framework to promote and accelerate the growth of all aspects of e-commerce in Africa.

2.2 Objectives

The major operational objectives are to

- Create an e-commerce friendly and nurturing environment at the national, regional and local levels. This includes promoting improvements in:
 - Telecommunication infrastructure and accessibility;
 - E-business related legal, regulatory and tax environment;
 - Consumer accessible electronic payment systems; and
 - Local, regional and international fast package delivery systems.
- Promote the international competitiveness of African e-commerce ventures. This includes
 - Provide leadership in terms of:
 - Strengthening e-commerce information, training and education structures;
 - Identifying, researching and disseminating information on potential market niches for African E-entrepreneurs;
 - Developing effective E-business mentoring, twinning and intermediation mechanisms;
 - Supporting the creation and development of Africa-based local, regional, international and especially Diaspora-focused Internet Portals; and
 - Facilitate the creation of Africa-based national, regional and international institutional electronic markets
 - Sharing experience
 - Sharing resources
 - Creating a regional mechanism to ensure the credibility of African E-businesses

2.3 Beneficiaries

The most direct beneficiaries of the proposed actions are the African SMME sector, which will enhance its share of international trade in goods and services (mostly services in phase one).

African society will also benefit from a higher rate of retention of entrepreneurs (a large proportion of which are women), and semi-skilled and skilled individuals in general, as it is

expected that entrepreneurs will find local business opportunities sufficiently rewarding while the others will find that they can eventually command salaries significantly above the local ones without the need of expatriating themselves¹.

From a global point of view, the African States will also be major beneficiaries. The macro economic effects will have a positive impact on the balance of payments, on the reduction in unemployment and in the growth of the GDP. This should therefore result in an improvement of the living conditions of the population.

Last but not least the whole economy of Africa should benefit further from all the advantages of being integrated rather than at the margin of the information age economy.

2.4 Impact

At the Enterprise Level

It is expected that most African E-ventures will be locally owned start-ups. Because African E-ventures are expected to focus on stable foreign markets to whom they will be providing stable teleservices, it is expected that the development of E-business will have a positive, stabilising effect on company cash-flows and on employment conditions in general.

At the level of African E-Business and E-Government

At present, the overall volume of E-business in Africa is small, and quite possibly growing at a slower rate than world E-Business. In addition, there is little or no current activity in three of the four target niche markets that this plan aims to promote. Namely, that we are aware of, there are no export-oriented online teleservices operating out of Africa, although we know of a number of business to business offline E-businesses operating in Africa. And this is considered a very large potential market with a short window of opportunity. There are also currently only a very few Diaspora-oriented E-businesses. Again, this has been identified as a major potential niche market. Finally, there is currently no significant government or institutional Pan-African or even regional E-procurement activity. E-procurement, at the government and corporate level, is expected to be the fastest growing segment in E-business over the foreseeable future. It is a niche market that is most amenable to policy decision and also one which can have a major impact on the economic viability of many ancillary support services.

At the Level of Governance

E-Procurement has shown to have two major impacts, one on the cost of procurement and the other on the transparency of the procurement process itself. It is therefore estimated that E-Procurement could have a major impact on good governance in the administrations that implement it.

¹ Experience regarding what happened and is happening with the Indian software development sector fully supports the above assertion. For instance offline and online teleservices require considerable numbers of employees in a wide variety of skills and skill levels, all of whom can expect to receive salaries considerably above their present earning power. As a matter of record, Indian software developers have seen their income increase by an average of about 20 to 25%, in real terms, year after year over the last five years. Offline and online services, especially those provided by offsite workers (the way of the future) are also noteworthy for the fact that they provide an environment that is non-discriminatory, be it in relation to sex, age, religion, mobility or disability.

2.5 Organizational Framework

The operationalisation of the proposed plan requires a two-step approach. The first step deals with the development effort, i.e., how do we move from the concept to an operating structure? The second step is, once created, how will the structure operate and interface with African E-Business stakeholders?

The proposed activities summarised above should be undertaken by an appropriate structure, with an African focus and the support of all the African states, regional and sub-regional institutions. This structure should be entirely focused on the promotion of African E-Business and should have a high level of operational autonomy in relation to existing structures. This is an important requirement because new technologies make it absolutely necessary that the structure be capable of quick action. All existing regional structures have their own missions that are different from that proposed for this one and are subjected to rather ponderous administrative procedures which can inhibit their fast reaction capability and render them incompatible with the task at hand.

Based on the above, an appropriate framework should allow for the coordination of all the mechanisms and of all the initiatives mentioned throughout this document. Membership should include the African states and regional institutions concerned with the development of Africa's e-commerce. For implementation, resources should be drawn from donors, lenders and NGO's, as well as any other relevant source of public and private moneys.

Although a high level of autonomy is desirable, it is conceivable that an organ such as the ECA could play the role of incubator in the formative stages, by giving it access to its experience, expertise and resources.

2.6 Development Process and Action Plan

It is proposed that the development process be undertaken as follows:

- A small group of experts operating under the umbrella of a Pan-African organization such as the ECA takes the lead and undertakes a process of preliminary consultation involving, among others, selected governments, regional institutions, large relevant private sector corporations, potential funding agencies, African e-commerce actors and other concerned stakeholders.
- Assuming a positive reaction, the group then focuses on developing the structure, the budget and a proposed action plan.

The advantages of the proposed approach are:

- The focus is clearly where it should be, namely at the national, regional and international level,
- It is uniquely able to provide for effective action within the short window of opportunity, and
- It avoids the pitfalls and inefficiencies of uncoordinated parallel national developments,

A preliminary action plan leading to the establishment of the proposed structure would probably require the following steps:

- Identification of a sponsoring organization (such as ECA)
- Identification of a Champion within that organisation. The Champion should be in a position to shepherd the proposal through the organisation bureaucracy, budgeting and decision making process.
- The immediate creation of a small planning group and a small outside group of experts capable of assisting the Champion in the preparation of the necessary planning and budgeting documents, as well as in the preparation and presentation of position papers as needed.
- The organisation of an event to be attended by decision-makers representing the major stakeholders group – such event to serve as a target date for the completion of the detailed plan.
- The concurrent liaison with other organisations which might become partners or contributors, in order to bring them on board before they forge alternative strategic partnerships.

3 Review of E-Commerce-related Debates at ADF99

The presentations and the debates on e-commerce related issues at ADF99 focused on two main areas. The first reviewed the status of e-commerce in Africa, its potential for growth and success, the likely impact, the barriers to growth and success and current and upcoming e-commerce ventures in Africa. The second focused on where Africa should put its priorities in terms of e-commerce, how the main barriers could be dealt with and what specific action could be envisaged to insure that African e-commerce can achieve its full potential. In summary:

3.1 The situation and the potential

- E-commerce represents a very real and very significant opportunity for Africa
- Africa has a unique competitive advantages in at least one key area of e-commerce, namely in the area of Business-to-Business export teleservices, an area which happens to be one of the fastest growing markets.
- The potential economic and social impact of e-commerce is, on balance, very positive.
- Time is of the essence as the window of opportunity for Africa to achieve a significant level of e-commerce development, and avoid becoming dependent on outside economic actors is very short.

3.2 *What is happening today in E-Commerce in Africa²?*

- There are a small number of African e-commerce ventures currently in operation. Their existence proves that well-informed African entrepreneurs can be successful and that Africa does indeed have competitive advantages, especially in export oriented Business-to-Business teleservices.
- There are several programs aimed at bringing the Internet to the rural areas and to disenfranchised groups.
- There are several programs aimed at providing access to the Internet and e-commerce via voluntary and community based associations.
- There are a few, mainly donor-sponsored, programs aimed at providing training and/or assistance to e-commerce pilot projects

3.3 *The main barriers*

- The African infrastructure is not sufficiently e-commerce friendly, mainly because:
 - The physical infrastructure is insufficient
 - The electronic transaction infrastructure is deficient
 - The legal and regulatory framework is still inadequate
- The African e-commerce environment is not a nurturing one, mainly because:
 - The level of awareness of e-commerce is not high enough
 - African entrepreneurs need training in using Internet for business
 - African Internet support professionals need training to be able to support E-Business oriented ventures

3.4 *Where should Africa's E-Commerce priorities be focused?*

Presentations and debates focused on several possible priorities, in several distinct areas, mainly:

² In the absence of a comprehensive audit, this paper cannot provide a complete assessment of the state-of-the-art of e-commerce in Africa, but must rely on the professional insights and opinions of the authors. The generalisations also hide wide differences between countries. For instance South Africa emerges as a special case. Despite wide internal disparities, e-commerce in South Africa is more akin to that in the developed world than the rest of Africa. The reader is referred to www.ecomm-debate.co.za for the recent Green Paper on e-commerce as well as an extensive collection of academic papers pertinent to e-commerce in developing countries.

With respect to priority market niches

- Should the first priority be on developing the consumer local and regional market or the overseas markets? The tentative consensus is that export markets are more attractive in the short term but that there is a need to provide the local and regional markets with all possible assistance to promote and accelerate their development.
- Which should be the first export market priorities? Two main market niches with equal priorities were proposed: **the African Diaspora market** and **the overseas Business-to-Business teleservices market**.
- Should the priority be on goods or services? The consensus here was that there might be a focus on physical goods for the local and possibly for the regional markets, but that **the primary export focus should be on teleservices**.
- Should government E-procurement be a priority? Although currently no African governments or African major regional institutions use electronic E-procurement mechanisms, or use the Internet to deliver any services, many participants suggested that this should be a priority because of the impact that this could have on the overall awareness, acceptance and use of the Internet as a business tool.

With respect to improving the E-Business friendliness of the African environment

- Is there a need for intervention in the areas of infrastructure, regulations, training, education, etc? The consensus was emphatically that, **given the short window of opportunity, there is indeed an urgent need for action on all fronts**.
- Who should coordinate these actions and how should these actions be undertaken? Discussions highlighted the fact that there is currently no African institution, either public or private, with the resources and the specific mandate to undertake the assignment of coordinating activities and that there are major deficiencies in terms of structured resources capable of handling such tasks as legal and regulatory reform and payment processes, to name only a few.

With respect to specific actions

- In addition to actions to improve the environment for e-commerce, is there a need for further action? Some participants suggested that consideration be given to supporting actual demonstration projects and other means such as internships and mentoring to better provide Africans with the knowledge and experience required to create and manage e-commerce ventures.

The following sections of this paper extend the discussion started at ADF99.

3.5 The Pan-African Initiative on e-Commerce: follow-up to ADF 99

In response to the ADF conclusions on e-Commerce, the ECA, in close collaboration with the International Development Research Centre (IDRC), commissioned a "Pan-African Initiative on e-Commerce" to be carried out by a Mission whose principal term of reference was to develop policy and strategy advice for African Governments with regard to the steps necessary for the stimulation of an active and early African participation in the emerging field of electronic commerce (e-Commerce).

The mission was also to investigate and report on National E-commerce Vision and Strategy, National Regulatory Policy, Accelerating Private Investment in E-commerce, Targeted Support for SMEs and Special Target Groups. Creating an E-commerce Labour Pool, and Domestic and pan-African E-commerce Research Capacity.

The work of the Mission officially began in October 2000 and was carried out by interview in twelve African Countries, in four distinct geographic regions, during November and December of that year. The regions covered and the countries visited were:

- North Africa: Egypt, Morocco, and Tunisia
- East Africa: Ethiopia, Kenya, and Uganda
- West Africa: Ghana, Mali, and Senegal
- Southern Africa: Mozambique, Namibia, and South Africa

The topics discussed in the team's report are:

- e-readiness status in some typical countries in Africa,
- challenges facing African governments,
- challenges for the private sector, and
- views of global business.

In light of the topics discussed, the team proposed two major initiatives which could be undertaken on a continent-wide basis with significant assistance from the international community. These initiatives, aimed as responses to the challenges, are:

- An Initiative to stimulate policy awareness, and
- An Initiative to promote policy research and to train Policy-Makers.

4 International Background to Electronic Commerce

Business-to-business e-commerce started in the 1970s with Electronic Data Interchange (EDI). Large companies—especially carmakers—used this technology in order to improve production processes with just-in-time techniques. Unfortunately the lack of common standards in EDI led to various and incompatible e-commerce systems.

With the widespread adoption of Information and Communication Technologies (ICTs) and especially the Internet over these last five years, e-commerce started to grow exponentially. E-commerce has experienced an explosion due to the convergence of these technological developments, the merging of the telecommunications and computing industries, and the appropriate business climate in the United States, Canada and more recently Europe.

The Internet enabled consumers to take part in the growing business-to-consumers (B2C) market while some countries such as the United States, Canada and the European Union are promoting business-to-government (B2G) e-commerce. A growing number of government agencies in the US and Canada are beginning to develop their own e-commerce systems to improve and enhance their business processes.

Among these various forms of e-commerce, business-to-business (B2B) e-commerce is the most important. According to the Gartner Group, the worldwide B2B market is forecast to grow from \$145 billion in 1999 to \$7.29 trillion in 2004 and B2B will represent 7 percent of the forecasted \$105 trillion total global sales transactions. "The B2B explosion is imminent, fuelled by a combustible mixture of investment financing, IT spending and opportunistic euphoria that is being funnelled into start-ups and brick and mortars' e-commerce initiatives," said the principal analyst for Gartner Group's e-Business Intelligence Services³.

Why is e-commerce so successful in North America and Europe? North American and European e-commerce entrepreneurs are operating in a fast growing E-market characterized by many millions of individuals with a broad variety of needs, an explosion of new net available physical and virtual goods, as well as online and offline teleservices, high Internet connectivity penetration, increased availability of broadband connectivity, high incomes, pervasiveness of credit cards, improved online security, absence of taxes and restrictive regulations, increased willingness to make purchases on the net and a well-known desire for instant gratification serviced by the Internet's capacity for instant delivery of virtual goods and services. Most important there is also a well developed courier service industry for the next day delivery of physical goods.

In other words, this is a dream environment for success and, as a result, e-commerce has been booming on all fronts: Business-to-Consumers, Business-to-Business and Business-to-Government. As a matter of fact, e-commerce has even begun to create new opportunities such as Consumer-to-Consumer trading (auction web sites).

In this context it is important to note that SMMEs (small, micro and medium-sized enterprises) are a vital component of electronic commerce. They are the companies that carry the growth in the industrial superpowers as well as in the developing countries. "Start up businesses" are the backbone of the so-called New Economy. The simplicity of their decision systems and the flexibility of their production schedules are their main assets of this dynamic environment.

These trends will direct our priorities to B2B opportunities in the short term while inviting African countries to follow carefully the development of B2C e-commerce, which could enable small and micro enterprises to capture international market niches through ICTs. To do so African countries need to implement an enabling environment at the legal, regulatory, financial, logistical and economical levels.

5 Potential Products and Teleservices Niches for Africa

Items commercialised on the Web can be subdivided into two main categories—e-products and teleservices. Each can in turn be subdivided into further sub-categories.

³ These comments were made before the recent major correction in the so-called "dot.com" marketplace, but nonetheless the comments remain valid.

5.1 E-Products

- **Physical products:** CDs, books, clothing and foodstuffs are typical examples of physical goods currently marketed and sold over the Internet. A key success criterion is fast, reliable and low-cost delivery.
- **Virtual products:** Software, e-magazines and newspapers, downloadable music (so-called MP3 files), etc. are typical examples of virtual products. They can be fairly easily delivered online, anywhere in the world, instantaneously, in any quantity and at minimal additional cost to the seller.

5.2 Teleservices

- **Offline:** Offline teleservices are services which can be performed off-site and which can be delivered over the net. For example a translator can receive a document to be translated by e-mail, work on it and when translated send it back, again by e-mail. Translation, data entry and architectural detailing are typical examples of offline teleservices. Because they are often provided from remote, distributed locations, offline teleservices employment is driven essentially by ability and costs. In many cases the employee has never met the employer and the employer has never met the clients. Teleservice operations are thus especially immune to all types of age, sex, religion, ethnicity, location, disability, or other form of discrimination.

There are already a few examples of offline teleservices providers in Africa. They have three things in common: they offer teleservices, not products, their clients are abroad, and they appear to be doing rather well. One example is a Moroccan company with a staff of 70 plus which does a solid business of digitising manuscripts for a European publisher. Another is also a Moroccan company that is successfully offering Internet-based translation services. Finally, there is the example of a Senegalese company that has carved itself an interesting market niche; it employs some 30 skilled CAD technicians to do architectural drawing detailing for European clients.

- **Online:** Online teleservices can themselves be subdivided into interactive and non-interactive.
 - **Interactive Online:** Interactive online teleservices are services that can be performed off-site but, because they involve live interaction with an individual or an audience, are dependent on reliable, low cost, live, high-bandwidth, low-latency⁴ connections with the Internet backbone. Telemedicine, tele-education and call centres are typical examples of interactive online teleservices.
 - **Non-interactive Online:** Internet-based radio and television stations are prime examples of non-interactive online teleservices. Although they are "streamed", Internet-based radio and televisions need neither be truly "live" nor interactive. Non-interactive online connections are less affected by latency but do require reliable, low-cost, high-bandwidth connections.

There are about one million persons currently working in call centres in the US, another one hundred and fifty thousand or more in Canada and several hundred thousand working

⁴ [The delay inherent in satellite-based services.](#)

all over Europe, especially in Ireland. Today's call centres do many things: handling airline ticket reservations, accepting orders for pizzas, credit card transactions approval, online research, online telemarketing, online soliciting for donations for large and small NGO's, and after-sales support for almost everything. They provide a wide variety of job opportunities, from simple order clerks to trained technicians and even engineers, lawyers and doctors. Today's call centres are all phone based. As such, they must be physically located in the geographical area they service, or in the case of more extended services, incur significant line costs⁵.

With the advent of the Internet, it is possible to route phone conversations over the Internet, dramatically reducing long distance costs and therefore allowing relocation of call centre activities to low labour cost areas. Africa's main advantages are in operating costs, driven by low labour costs resulting from the comparatively low standard of living in most African countries. By making online teleservices a priority, Africa could thus be in a position to gain a very sizable number of jobs. A first export-oriented Internet call centre pilot project, based in Togo and servicing North America is just underway.

6 The Main African E-Markets

Compared with North America and Europe, and with the exception of South Africa, African E-entrepreneurs are faced with a significantly different market situation.

6.1 The African Marketplace

Local and regional consumer markets are not yet strong enough

Most African local and regional consumer markets face severe limitations in terms of connectivity, ability to pay, willingness to make purchases on the Web, ownership of credit cards, access to other means of payment for online purchases and accessibility in terms of physical deliveries. Therefore, local and regional consumer markets are, in almost all cases, currently unable to support successful e-commerce ventures. This situation could, however, change fairly rapidly, at least in the larger urban centres and in the wealthier sub-regions, as connectivity, access to payment mechanisms and courier services improve.

Local and regional Business-to-Business opportunities are limited

The local and regional Business-to-Business market, which is the fastest growing e-commerce market in North America, is itself restrained in Africa by some of the same limitations as its Business-to-Consumer counterpart. The main problems remain connectivity, deliveries, and the unwillingness to purchase online. Furthermore, African e-commerce based ventures do not necessarily have a price or quality advantage over non-Internet based local competitors.

The local Teleservices market is non-existent

Although a few call centres operate in Africa, mostly (but not exclusively) in South Africa, there is no current market for Internet based call centres focused on the local or regional market. This is mainly due to the fact that there is still little regional economic integration

⁵ One example is the Lufthansa international call centre located in Cape Town, South Africa. It comprises 120 local German-speaking agents, who tackle 3000+ calls / day.

that would justify regional call centres. It is however to be expected that within five years, most telephone communications will be using Internet compatible (packet switching) technology and this could open the door to such businesses on a regional basis.

There is no E-procurement Business-to-Government market

The idea of Business-to-Government e-commerce encompasses government procurement and the provision of similar services for the African operations of organizations such as the UN, major IFI's, Donors and NGO's.

Business-to-Government could play a significant role in supporting the development of electronic payment tools. It could also generate the base volume for efficient regional delivery services. Unfortunately, Business-to-Government plays currently no role in African e-commerce for the simple reason that no significant Africa-based e-commerce government procurement mechanism exists. Furthermore, public and private organisations fall behind in the use of the new technologies as a productivity tool. The traditional means of exchange are still given great importance. This attitude is the fruit of the conservatism still characterising most of the big firms and the government.

6.2 The International Marketplace

Because e-commerce is a truly global business, African entrepreneurs can, however, focus on specific overseas niche markets in which they have a competitive edge and which embody a much better combination of Internet connectivity, purchasing power, willingness and ability to make Internet-based purchases than is typically the case in Africa.

Business-to-Business Teleservices

African E-Businesses do not appear to have made any significant inroads in the provision of physical products to North American and European businesses and governments. In addition to possible weaknesses in terms of volume and prices, this is again probably due to the current inadequacies of the delivery systems. On the other hand, Africa-based E-Businesses are recognized for having significant human resource cost advantages over their North American and European competitors. This human resource cost advantage can be used to its fullest for the purpose of delivering teleservices to business clients overseas. As a result, the vast majority of successful Africa-based E-Businesses are offering teleservices, rather than physical goods, to overseas business clients. Current Africa-based Businesses-to-Business activities encompass a wide variety of offline teleservice niche markets such as: data entry, desktop publishing, architectural detailing, drafting, translation, transcription and legal document abstracting.

Business-to-Diaspora

Business-to-Diaspora comprises two niche market opportunities, because they have the potential for handling physical goods as well as services. These are:

- Business-to-Diaspora consumer marketing, and
- Split-marketing

Business-to-Diaspora marketing involves targeting specific groups of African expatriates living in Europe and North America. In addition to the cultural and family ties with the home country, they tend to have the income, connectivity and credit cards necessary to purchase online. They are an important niche target market for a variety of services such as travel, real estate and back-home banking. Because of their expected willingness to purchase from a back-home supplier and to wait for deliveries, they are also a potentially significant niche target market for homegrown and home-produced traditional food products and artefacts.

Split-marketing is a special type of e-commerce, generally Diaspora oriented, which can best be explained by the following example: EthioGift <<http://www.ethiolink.com/>> located in Addis Ababa sells goats to expatriate Ethiopians. The goats are purchased over the Internet and paid by credit card, but the goats themselves are delivered to the family in Addis, thus elegantly sidestepping all shipping and delivery problems. Split-marketing targeted at the Diaspora could become a valuable springboard for African e-commerce start-ups.

Business-to-Government and Institutional Market

Federal, state and local North American governments and increasingly European ones, as well as large IFI's and large international NGO's, are setting up Web-based procurement programs. At present, these are only open to qualified suppliers and exclude Africa-based suppliers. If African E-entrepreneurs could participate initially as subcontractors or joint bidders in the area of offline and online teleservices, this could open up significant E-Business opportunities for Africa-based entrepreneurs. If adequate transportation services became available, this could also open the way for African entrepreneurs to become suppliers of low-volume, possibly high-margin physical goods.

Business-to-Consumer

Essentially African e-commerce entrepreneurs are still excluded from the general North American and European e-commerce consumer markets for physical goods by the lack of cheap, fast and secure delivery services. In addition, there is still a strong reticence at the general consumer level to making Internet-based purchases from an overseas supplier.

There are currently no Africa-based, export-oriented, Business-to-Consumer teleservice providers such as online brokers, market research, banking, etc. This is, to a large extent, due to the inability of Africa-based companies operating in these areas to compete in the North American and European markets. There is, however, a considerable effort in developing Africa-based tourism oriented Web sites.

7 Major constraints to the expansion of E-Commerce in Africa and Possible Solutions

7.1 The legal and regulatory aspects of electronic commerce

As is the case in all countries, there are several now well-understood legal barriers to the unfettered growth of e-commerce. These include issues related to digital signatures, electronic contracts, certification authority, and cryptography. In 1996, UNCITRAL published a Model Law to address many of these barriers and more and more countries

(including African countries such as Mauritius) are adopting and adapting the legal framework embodied in this Model Law⁶.

The following are the main issues that need attention:

Encryption and decryption Lack of security over the Internet is a real threat to the development of e-commerce. Encryption and decryption techniques are thus critical to providing authentication, authorization, confidentiality, integrity, and non-repudiation services.

Digital signatures Similarly, the issues of digital signatures and electronic contracts are relevant in case of dispute between trading partners in an e-commerce transaction.

Certification authorities In order to secure electronic transactions, certification authorities are needed to act as trusted third parties to verify information about parties involved in a transaction and about the transaction itself. In order to gain credibility at the international level, African certification authorities must take part in the framework for supporting the international interoperability of certification mechanisms and the mutual recognition of certification authorities.

Consumer protection In an electronic market place it is not easy for consumers to identify and localize the suppliers. In order to develop and maintain consumer confidence in electronic commerce, it is necessary to promote protection mechanisms that address four key issues:

- Fairness and truthfulness in advertising;
- Labelling and other disclosure requirements such as warranties, guaranties, product standards and specifications;
- Refund mechanisms in case of cancelled orders, defective products, returned purchases and lost deliveries, etc; and
- a means of qualifying merchants in terms of the above issues.

The usefulness of the courts For international electronic commerce, the usefulness of courts for resolving problem transactions may be limited. Alternative dispute settlement mechanisms will therefore have to be found. In some countries financial institutions appear to be the most promising intermediaries because they can, in many cases, "charge back" the merchants under appropriate circumstances (e.g. mistake, non-delivery, delivery of wrong item) and give suppliers a strong incentive to ensure high levels of consumer satisfaction. In the United States for instance, charge back mechanisms are partly responsible for high confidence in telephone shopping among consumers and its enormous growth.

Intellectual property rights. Securing intellectual property rights (IPRs) is crucial in providing security and trust with respect to investment and trade in ideas and cultural activities and therefore helping commercial returns. Music and cultural products is a key

⁶ See also academic commentary related to the UNCITRAL Model Law as it applies in Africa, at www.ecomm-debate.co.za

sector where Africa can capture some e-commerce niches. It is essential to protect African producers in order to unleash this type of activity. Through TRIPS (Trade Related Aspects of Intellectual Property Rights) and recent WIPO agreements on intellectual property rights, governments have also made some progress in agreeing to common international standards of protection.

Commercial Regulations and Procedures. There are several opportunities here to streamline or eliminate restrictive regulations:

- Eliminate or streamline the process for the actual creation and registration of new Internet-based businesses
- Reduce or eliminate fees, duties and other restrictive taxes on imported hardware and software required for E-business operations
- Eliminate or streamline the existing ponderous and costly import and export procedures which hobble the operations of E-businesses

7.2 Financial aspects

Electronic payments

Currently over thirty systems and technologies of E-payment are in place or being proposed and tested throughout the world. They differ across a number of dimensions: size of payment; whether the system is closed (e.g. a specific system for a specific purposes such as a pre-paid phone card), or open (a generic system for a wide variety of uses such as a stored value card); degree of anonymity; level of security; and time of payment (credit, debit and cash).

Access to online payment using credit cards or similar instruments, or at the very least, access to offline means of payments for online transactions are, however, a key missing component of the African E-business environment. This has come about because of real barriers, including:

- Credit card access: in most African countries many banks don't deliver credit cards. People usually open a bank account outside the continent (Europe or USA) in order to get a credit card.
- Behavioural constraints: people are used to paying cash for most of their transactions; to a lesser extent they use wire transfer; payment by cheque is rare because of the high risk of funds unavailability unless cheques have been certified by a bank;
- Banks' attitudes: African banks are very conservative; they use very few innovative products and marketing techniques.
- Lack of confidence: the security issue is one of the major challenges to the development of E-payments

To be most effective, solutions should be developed on at least a regional basis. This could be achieved through the increased availability of credit cards wherever possible, and the development of a regionally compatible system of web issued bank deposit vouchers

for the payment of online purchases. For that purpose one of the highest priorities should be to:

- Promote the development and implementation of a broadly based consumer accessible E-commerce payment system across Africa

Key stakeholders

More and more merchants are subscribing to debit cards launched by commercial banks enabling their clients to pay for their purchases using these cards. Unfortunately these systems are specific and can't be generalized into the banking system.

Central Banks can play a key role in harmonizing methods of E-payments through commercial banks. In West Africa for instance, the central bank BCEAO covers eight countries and has conducted a survey on E-payments practices in the commercial banks in order to define a regional policy aiming at generalizing this type of payment in the sub region.

Some private initiatives can play the role of Certification Authority in managing public key encryption between banks and merchants, ensuring more confidence between stakeholders.

7.3 Technological aspects

Telecommunications infrastructure (network and bandwidth)

The deficient telecommunication infrastructure in Africa has been well documented on numerous occasions as one of the most serious barriers to the effective use of ICTs on the continent. Only 2.5 percent of the world's televisions are on the continent (which has 13% of the world's population), Africa has only 0.4 percent of the world's telephone lines with an overall teledensity still only about one per 200 inhabitants, computer penetration is less than 3 per 1000 and just one in 1500 has access to the Internet compared to a world average of about one in 40. Although there has recently been a rapid increase in the rate of expansion and modernization of fixed telecommunication networks, this is off a very low base and much of the growth is in the urban areas.

Irregular or non-existent electricity supplies are a common feature of the African landscape and are a major barrier to increased use of ICTs, especially outside the major towns. Many countries have extremely limited power distribution networks that do not penetrate significantly into rural areas.

Access to information and use of communication tools in Africa has until recently been largely entirely in the hands of state monopolies. But now that the trend towards open democracy and more liberal market oriented policies has become established on the continent, there is a marked improvement in the availability and diversity of information and communication channels. To date

- Twenty countries have created independent regulatory agencies against only two in 1990;

- Rates of telephone line growth are at their highest levels ever. Seventeen Public Telephone Operators have been privatised. An increasing number of operators are now passing over the responsibility for maintaining public telephones to the private sector and this has seen a rapid growth of private phone shops in some countries⁷.
- The African mobile phone market enjoys continuing growth; today only few African countries (less than ten) do not have cellular phones. Most of the cellular phone companies operating in Africa are private. Cellular services now comprise about 20% of the total phones on the continent (outside South Africa) and are available in 42 countries, supplied by about 80 operators who provide access mainly in the capital cities but also in some secondary towns and along major trunk routes. The number of cellular subscribers in 1997 was estimated by the ITU at over 225 000 outside of South Africa and is probably closer to 600 000 today⁸. The recently launched Wireless Access Protocol (WAP) will allow wireless devices such as mobile phones to access the Internet: sending and receiving e-mails; buying and selling e-commerce products and services.
- By the end of 1999 the Internet was expected to be available in the capitals of every country in Africa, up from only twelve countries three years ago. Most Internet Service Providers in Africa are private.
- Smart-card based public phones have also been widely adopted across the continent, creating a new revenue stream in the sale of airtime by small shops and telecentres. This infrastructure already forms the basis for more advanced value added telephone-based services, including e-commerce, especially if more universal smart-card systems are adopted, including the ability to use the cards in different countries.
- The deployment of wireless telephone infrastructure is far less expensive and much faster and easier than the fixed lines. In the near future, the development of solar energy wireless phone boxes will enable rural areas, including those not yet supplied with electricity, to participate in e-commerce.
- Hundreds of new media outlets in print, radio, television and the web have emerged in the last couple of years.

The participants' equipment (households and businesses)

To fully participate in e-commerce opportunities, African businesses and consumers must access some basic equipment such as computers connected to the Internet. Unfortunately the price of computers is still higher than in developed countries. Most of the additional cost is due to the high margins of resellers and customs duties. Some African countries such as Senegal and Mozambique, however, have suppressed the customs duties on computers enabling their population to more easily access ICTs. This type of measure should be extended to all African countries.

⁷ The most well known success of this strategy is in Senegal which now has over 7 000 commercially run public phone points, employing over 10 000 people and generating about 30% of the entire network's revenues. While most of these are in urban areas, a growing number are being established in more remote locations, especially with the Senegal PTO aggressive rollout of backbone infrastructure that is in the process of linking 2000 villages and towns by fibre optic cable.

⁸ In South Africa there are 7 million cell phones, exceeding the approx. 6 million fixed line connections.

The real operational costs in Africa (especially the real cost of bandwidth)

The limited teledensity is also linked to the fact that a much smaller proportion of the population can actually afford their own telephone - the cost of renting a connection averaged almost 20 percent of the 1995 GDP per capita, vs. a world average of 9 percent and only 1 percent in high income countries. However, policy makers need to be aware that there is a very large variation between countries in the charges for installation, line rental and call tariffs⁹.

The cost of bandwidth is also still high for African Internet services providers because they don't usually benefit from the same economies of scales as their counterparts in developed countries.

Lifestyle differences – community vs. individual

It is important to note, however, that comparisons of teledensity in Africa and in the rest of the world are conditioned by what is measured: number of phone lines or number of people accessing the phone lines. But one of the major lifestyle differences between developed countries (North America and Europe) and African countries is that individualism is a major characteristic for the former while living in community is a traditional way of life for indigenous Africans.

This is why Community Access Centres are so successful in Africa with an exponential rate of growth in rural areas as well as urban areas. One telephone line is easily shared by 20 to 30 people who can even put the phone number on their business cards and, if they live nearby the Telecentre, can even receive calls. More and more Community Access Centres are now offering Internet access and the most successful are offering VoIP (Voice over Internet Protocol). It is then easy to imagine that many SMMEs who can't afford heavy investments can access e-commerce through this type of channel.

Promoting improvements in telecommunication infrastructure and accessibility

In order to thrive, E-business requires a functioning infrastructure and an E-business friendly environment. The following are the priorities required to develop such an environment in Africa, at the national, regional and local levels:

- Increase connectivity in terms of:
 - Bandwidth (bandwidth to backbone, availability of high bandwidth local connection)
 - Redundancy (number of linkage points with the Internet backbone).

⁹ In 1996 the ITU determined that the average business connection in Africa cost \$112 to install, \$6 a month to rent and \$0.11 per 3-minute local call. But installation charges were above \$200 in some countries (Benin, Mauritania, Nigeria and Togo), line rentals ranged from \$0.8 to \$20 a month, and call charges varied by a factor of almost 10 - from \$0.60 an hour to over \$5 an hour. Since then local call tariffs in some countries have increased even further, to over \$8 an hour (Uganda, Gabon and Chad) making extensive use of the Internet in these countries unaffordable to all but the larger organizations and a tiny domestic elite.

This can be best achieved by promoting the privatisation of the Internet provision function and liberalisation of the licensing of ISP's.

- Decrease the nominal and real Internet access cost:
 - Increase bandwidth availability
 - Increase ISP competition

Again, this can best be achieved by liberalisation and competition, while also addressing the need to reduce or eliminate local toll fees for dial-up calls to ISP's.

Second, it is important to develop an approach aiming at *sharing the infrastructure*. Basic investments are sometimes fairly high. Even if they ensure a certain convenience and a degree of independence, they also provide capabilities beyond the real needs of the users. Therefore, initiatives whereby several stakeholders would share the same infrastructure should be encouraged. This approach favours competitiveness of supply and reductions to barriers to entry.

7.4 The Logistical Aspects

Warehousing and Physical Distribution

Rapid delivery is one of the major characteristics of e-commerce and in developed countries express couriers play a key role. For instance Federal Express, UPS and DHL have their own airfreight cargo carriers that have contributed significantly to the expansion of e-commerce. Many countries have also created a national express courier company (mainly a subsidiary of the national post office) to compete with multinational companies. By contrast, airfreight in Africa is characterised by:

- The lack of frequent flights between African capital cities;
- A better connection with European countries than between African countries;
- The high cost of air freight (one of the highest in the world);
- Limited capacity by comparison with demand
- The risk of small parcels loss due to frequent stopovers.

Until there are significant improvements to airfreight procedures, to achieve rapid delivery of goods it will be necessary for firms to develop warehouses in the targeted markets. This strategy will, however, be very expensive and unaffordable for the small business sector¹⁰.

In short a critical goal should be

- Promote the development of fast, reliable, economical fulfilment logistics systems capable of delivering physical goods in a timely fashion and cost effectively on a regional and international basis.

¹⁰ But those firms could arrange to share warehouse facilities with larger businesses already established in consumer markets.

This will require very sizable investments and would be unlikely to achieve economic returns for a considerable period. This is therefore considered as a vital, but longer-term objective, which must nonetheless be undertaken without delays. Until it is operational, there can be no realistic hope of extending the development of the African E-business sector to the marketing of physical goods other than on a strictly local basis.

Customs clearance procedures

Compounding the physical distribution problem are the long and complex customs clearance procedures that are a real bottleneck for the movement of goods in Africa. Importers and exporters usually go through many government agencies spending hours and days before getting the authorisations that are a prior condition for the clearance of goods. This is why more and more African countries are trying to computerise their clearance procedures. Through the Global Trade Point Network some countries such as Senegal, are connecting all governmental agencies (including customs) that deliver authorisations in an import or export process, in order to reduce the timeframe of clearance. These policies will have a positive impact on e-commerce.

Actually, because of their small size, most of the goods sold or bought through e-commerce will be cleared at the post office where customs clearances are faster than at the airport or the port. But the procedures are still long compared to the speed of e-commerce transactions. The increasing number of parcels going through the post office has convinced some African countries to reinforce the customs services in order to avoid bottlenecks and long queues.

8 Promoting the Participation of SMMEs

8.1 Some Characteristics of Public and Private Enterprises

Major firms suffer from inflexible structures, time-consuming decision processes and are often conservative. The current electronic commerce environment, however, is changing extremely rapidly. Thus SMMEs constitute the most suitable business category capable of exploiting electronic commerce. The new technologies offer opportunities to SMMEs because they put an end to many barriers. For instance the international field, which was almost the sole domain of large enterprises, is becoming more accessible to smaller firms.

However, SMMEs have difficulty accessing financing. Their owners' attitudes also heavily influence them. If the owners do not have a long-term vision, they can restrict the potential growth of the firm. Especially in Africa SMMEs may be at a disadvantage due to quality of products and services and general credibility issues. This is especially relevant in B2B EC. African SMMEs have great difficulties accessing the B2B market because they are not well known by their prospective clients.

Both the state and large enterprises can play a critical role in fostering SMMEs use of EC. For instance, in the United States and Canada and to a lesser extent the European Union, the government has played a key role in the development of business-to-government e-commerce enabling the SMMEs to equip themselves and to be familiarised with these new techniques. In these countries, the government put its procurement system on a wide area network, enabling online bidding by SMMEs.

If African governments, at the national and local level, as well as Africa-based large institutions such as IFI's and NGO's, adopted Internet bidding and online purchasing (E-procurement) for at least some of their requirements, and if they offered at least some of their services online (license renewals, permits, tax payments, etc.) this would generate a fairly large, stable volume of business. This could be sufficient to entice many African businesses to develop their own E-business activities, investing in ICTs and training their staff in e-commerce. The volume of business could also justify the investment required to develop local and regional fast package delivery systems. African governments should therefore consider this a priority. Setting up an Africa wide E-procurement system would require, among other things:

- Identifying the African governments and other large institutions such as international and regional organizations, large NGO's, etc., who would be interested in participating from the start
- Identifying the operational mechanisms and procedures most appropriate to the task
- Identifying the products and services to be included at start-up
- Developing a preliminary business plan
- Assessing the likely outcomes, benefits and impacts of implementation
- Preparing the competitive bid package
- Promoting the concept and educating the stakeholders

Large enterprises such as PTOs (Public Telecommunications Operators), water and energy supply companies, etc., can also play a key role by:

- Developing subcontracts with SMMEs ordering products, by-products and services;
- Familiarizing SMMEs with their purchasing procedures;
- Developing extranets with SMMEs or extending their computer and telecommunication networks to them, allowing them to access to purchase requisition databases, submitting proposals through the network, getting paid through the network;
- Training and counselling SMMEs in using the extranet;
- Defining quality standards and minimum requirements for SMMEs to qualify for accessing the extranet.

8.2 Human Resource Development

Human resource competency in Africa varies according to the country. Some have developed training structures and enjoy a Diaspora return. Others suffer from a lack of qualified people in the new information technologies field. Because most African entrepreneurs especially in SMMEs have limited literacy skills, participating in e-commerce (i.e. accessing computers and navigating through the Internet) could be a serious challenge. But some experiences in Africa show that this type of constraint can easily be

overcome, producing a new breed of “Netpreneurs” well trained in ICTs and knowledgeable about the business opportunities in e-commerce.:

- In rural areas people are focusing more on what they can get from new technology to satisfy their needs than on technology itself
- Illiterate people are accustomed to asking for help from their relatives or associates in order to overcome their handicap; in banks for instance they usually ask educated clients close to them to fill in their checks;
- In Chambers of Commerce and in Trade Points, there are agents who can assist them in writing business letters, getting an email account, even sending and receiving emails;
- There is now software that translates Internet content in six African languages including Bambara (Mali), Ouolof (Senegal) and Swahili (East Africa).

SMMEs should be made aware of the opportunities offered by the new technologies regarding e-commerce. This sensitisation should be done through practical examples of success stories. Targeted media information campaigns could address the private sector and the informal sector. Once interest is awakened, the next step is skills transfer through training. The emergence of specialized training centres can be a good starting point, focussing on

- Specific training of entrepreneurs in the development and running of E-businesses.
- Training of E-professionals at all levels, from business web designers (as opposed to web designers), web masters, E-marketers, to E-business managers, etc.
- Practical internships in existing E-businesses in Africa or out of Africa.

Finally, to prepare future generations to practice e-commerce, it is necessary to integrate ICT and Internet knowledge into all school and university courses. This initiative will predispose graduates to the practice of e-commerce because they will have had some experience during their schooling. Governments have to provide tax and customs incentives easing the purchase of computer and communication material. Development partners have to integrate the national information and communication technologies dimension in their activities. Private or public operators have to facilitate access to telecommunication by granting special privileges to pupils, students, households and private stakeholders, working directly on ICT.

8.3 Promote viable E-business projects

Identifying, researching and disseminating information on potential market niches for African E-entrepreneurs

African entrepreneurs need more and better information about which market niches are open to them right now. For example, African entrepreneurs need more and better information about the market for teleservices in North America and Europe as well as more detailed information on Africa's overseas Diaspora markets. Information is needed not only in quantitative terms but also in qualitative terms, namely:

- Who are the (business) clients by type of activities, types of needs, reasons for need, volume of needs, quality, speed and other requirements, as well as more information on the competition.

Providing such information to existing and prospective entrepreneurs should be one of the highest priorities of this plan. This could be done through the establishment of a shared resources centre mandated to undertake targeted market studies on foreign markets and, especially, on the Diaspora market

Encouraging Women to Engage in EC

There are more men than women connecting to the Internet. This is especially true in Africa where most women using the computer are office assistants doing more word processing than Internet connection.

Women entrepreneurs are very active in imports and exports, travelling abroad looking for products, negotiating with suppliers, usually paying cash, before transporting their merchandise by sea or air.

Now they are considering seriously the advantages Internet can bring to their businesses, especially e-commerce. They can avoid spending lot of money on business trips and they can have more choices of suppliers through the world using the Internet.

Developing effective E-business mentoring, twinning and intermediation mechanisms

African entrepreneurs in general have little personal experience of their best niche markets. They require assistance in understanding those markets and also in accessing them. This can best be achieved by:

- E-business mentoring and twinning to start-up E-businesses, using Diaspora resources whenever available
- Intermediation and facilitation between African sub-contractors and overseas strategic partners
- The multiplication of private sector led, donor assisted pilot projects in all major niches
- The establishment of a full fledged, government supported, marketing effort for African E-business to business capabilities

Creating EC Incubators

As part of the effort to promote the establishment of E-businesses, consideration should be given to instituting E-business incubator facilities. Incubators consist of Web resource centres equipped with good connectivity that will offer stakeholders - for a given time - efficient support, for both infrastructure and capabilities. So each stakeholder could do e-commerce without necessarily having all the required capabilities. This step speeds up the involvement of African SMMEs in e-commerce and represents a mechanism of

consolidation of an African expertise that could be easily duplicated. Incubation facilities (especially if universities participate) could also provide technical support services, which would allow entrepreneurs to concentrate their efforts on the business aspects of their start-up ventures. E-business incubators would also facilitate the tasks of mentoring.

Supporting the creation and development of Africa based local, regional, international and especially Diaspora focused Internet Portals

Portals are a critical component of the E-commerce function. For instance the Tanzanian Daily and the Ugandan Radio station both have highly sought after websites, with thousands of Diaspora visitors everyday. They are now part of an *infoDev*-sponsored program that provides them with mentoring and technical assistance to transform their websites into commercially profitable African Portals. Becoming a portal involves refocusing their content on the Diaspora rather than the local market. It also means changing the advertising content (from a local focus to a foreign focus). More to the point, it means becoming an advertising medium for African E-businesses trying to reach overseas markets.

As of now, Africa has few if any strong local, regional, and more importantly, international Portals. One of the highest priorities should thus be to promote the creation and development of African Portals. This will involve:

- Identifying Africa based radios, televisions, newspapers and other existing media ventures that have the potential to become local, regional or international Portals;
- Providing them, on a priority basis, with specialized information, training, mentoring and other forms of assistance required to give them an opportunity to develop themselves without delay, into viable Internet Portals.

9 Regional support mechanisms

Although some African nations may be more advanced than others, all face similar issues. Regional and sub-regional mechanisms to foster EC, and especially promoting potential supply to foreign markets, could thus be of great value and lay down the basis for inter-regional and local e-commerce. For instance, appropriate bodies could:

- Create an Observatory to determine and record industry capabilities regarding security, electronic payment, disk storage space, bandwidth, etc. This would enable the sharing of infrastructural and know-how capabilities where possible.
- Develop a Web Site where such information as well as public and private sector experience about new ICTs, as well as e-commerce, could be shared. The site could have a discussion group to exchange ideas about the strategies that are adopted. It could also serve as a resource centre, which would present know-how in such diverse areas as Web marketing, Web sourcing, Web mastering, Web design, etc. The shared resource centre could operate as an association and companies could become members.

- Create a Stakeholders Forum: Electronic commerce stakeholders could meet at regular intervals to get updated on how they are faring in their development quest and to review the barriers they have been encountering.
- Structure Training Programmes and mechanisms using the new information and communication technologies. Specific training programs should be available in several languages and cover areas such as: Web production, Web marketing, site administration, site updating, Web development tools, etc. Each member country should equip itself with certified training centres tasked with transmitting the course content.
- Create Innovative Finance Mechanisms. African and/or foreign private capital must be made available in the form of lines of credit for the promotion of e-commerce and to finance e-business “start-ups”. Africa is in a position to innovate by creating a capital market exclusively focused on e-business start-ups¹¹. Large regional development banks should be called upon to guarantee this line of credit.
- Develop an Intermediation Service capable of connecting African e-business start-ups with prospective North American and European business clients. For a limited period of time such an intermediation service could be available to African entrepreneurs at little or no direct cost.

Create a Certification Mechanism to ensure the credibility of the developing African e-commerce sector in the eyes of the international community. Such a mechanism would guarantee that a particular business is for real, that it is qualified in its area of business and that it has a good track record.

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¹¹ Interesting experiments of that nature already exist, notably in Australia.

