ECONOMIC RESEARCH PAPERS

N° 65

Governance in Africa: The Role for Information and Communication Technologies

by

Olugbenga Adesida
The Knowledge Network Centre
Abidjan, Côte d'Ivoire

ECONOMIC RESEARCH PAPERS

Nº 65

Governance in Africa: The Role for Information and Communication Technologies

by

Olugbenga Adesida
The Knowledge Network Centre
Abidjan, Côte d'Ivoire

Abstract

The information and knowledge age is upon us due to rapid advances in information and communication technologies (ICTs). These new technologies are changing the way we live and work, and they are transforming many aspects of social and economic organization in ways we could have hardly imagined less than two decades ago. ICTs offer developing countries formidable and cost-effective tools for accelerated development. This paper assesses the role that ICTs can play in Africa's development with special emphasis on governance. The 21st century challenges for governance in Africa are reviewed. The paper summarizes the uses of ICTs in governance and discusses possible risks. It also attempts to offer ideas that should be considered in employing ICTs for governance, and identifies key areas for intervention by African countries and the African Development Bank. The paper stresses the importance of the human factor in realizing good governance, given that ICTs are only tools.

Résumé

Nous sommes à l'ère de l'information et de la connaissance en raison des progrès rapides des technologies de l'information et de la communication (TIC). Ces nouvelles technologies transforment notre manière de vivre et de travailler ainsi que de nombreux aspects de l'organisation sociale et économique à un point tel que nous n'aurions jamais pu l'imaginer il y a moins de deux décennies. Les TIC offrent aux pays en développement des outils extraordinaires et économiques pour accélérer leur développement. Ce document évalue le rôle que les TIC peuvent jouer dans le développement de l'Afrique, en mettant un accent particulier sur la gouvernance. Les défis que le 21e siècle pose à l'Afrique en matière de gouvernance sont examinés. Ce document résume l'utilisation des TIC dans le domaine de la gouvernance et analyse les risques éventuels. Par ailleurs, il s'efforce de proposer des idées qu'on devrait exploiter dans l'utilisation des TIC aux fins de la gouvernance. En outre, ce document identifie les domaines d'intervention clefs pour les pays africains et la Banque africaine de développement, et il souligne l'importance du facteur humain dans la réalisation des objectifs de bonne gouvernance, compte tenu du fait que les TIC ne sont que des outils.

Governance in Africa: the role for information and communication technologies

by

Olugbenga Adesida

1. Historical Context

Amid jubilation and hope for the future, many African countries gained their political independence in the late 1950s and 1960s. They all embarked on ambitious programs of nation building. In the early years, remarkable progress was made by African countries: per capita GDP in sub-Saharan Africa grew at 2.6 per cent a year between 1965 and 1974[1]; and marked improvements were recorded in social indicators such as life expectancy, mortality rates, and school enrolments[2]. The euphoria was short lived, however, as the dreams soon faded. Multi-party states quickly became one-party states. Within a short period of time several nation states began to fall successively as leaders became despots and military coups ushered in dictators.[3] By the 1980s, some African countries had waged or were waging bitter civil wars and civil strife was rampant.

With the political and economic crises, the future of Africa was spoken of only in pessimistic terms.[4] For many, Africa's political and economic failings were proof that Africans were incapable of governing themselves. Several experts foresaw a future of multiple crises and a few openly called for recolonization of some African nations by the West and/or trusteeship by multinational companies or the United Nations.[5] Towards the end of the 1980s, Africans were ready for a change, as economic reforms had not led to significant improvements in their quality of life. The state, in short, had failed many Africans. However, some countries such as Mauritius, Botswana and Senegal were able to remain democratic. Mauritius and Botswana also managed to consistently maintain high economic growth rates.

This paper will review the challenges of good governance in Africa as we enter the 21st century and then focus on the role that information and communication technologies (ICTs) can play in improving governance in Africa. The paper will discuss critical issues and the obstacles that will affect the adoption of ICTs for improved governance in Africa. It will also provide examples of how ICTs can be used and are being used to improve governance, and will propose some guiding principles and policies for African countries. The paper will conclude by exploring the role that the African Development Bank Group can play in helping African countries to adopt ICTs for improved governance.

2.   Governance in Africa and the challenges of the 21st century

Internal pressures for change began to increase the demand for democratization in the 1980s. The rally for re-democratization was given a boost by the collapse of the USSR. Since the early 1990s, according to the United Nations Economic Commission for Africa, "Africa has been experiencing a major ground swell of political change with the people of the continent taking resolute steps to demand participatory and democratic systems of governance[6]." Good governance and public sector management are central to development and constitute the primary means for social transformation. Both combined are the cornerstones of successful economies. The realization that good governance is central to development has led Africans and African leaders to acknowledge past errors and some "have resolved to make governance apparatus operate better and efficiently….[7]"

A cursory look at the African landscape today indicates that progress has been made in improving governance on the continent since the pro-democracy wave that swept Africa in the 1990s. There are certainly reasons to be hopeful. Less than two decades ago the African continent was full of dictators and one-party states. There has since been a significant expansion in the political space. Elections are now common. Since the 1990s, 42 African countries have organized presidential and parliamentary elections.[8] Civil liberties and the participation of the people in the political process have increased. The political transition in Nigeria in May 1999 after years of military authoritarianism and the democratic changes of governments in Benin, South Africa and Senegal are all positive examples.[9]

Additionally, there has been a major improvement in the policy environment and this has led to a turnaround of Africa's economic performance. Economic growth rates are improving. They increased from 2.5 per cent in 1990 to 3.2 per cent in 1998.[10] In 1998, economic growth rates in 28 African countries were 3 per cent or more while GDP per capita growth rates were positive in at least 30 countries.[11] The growth rates for countries such as Botswana and Mauritius are comparable with those of high performing countries in the world.

Despite the gains ushered in by the twin reforms (political and economic) embarked on by African countries, many of the problems that led to the pressures for participatory democracy are still unresolved. At the same time, new challenges such as HIV/AIDS have mushroomed. Many African countries today, including even the "success stories" such as Ghana, South Africa, Mali, and Uganda have trouble meeting public expectations and satisfying the needs of their citizens.

African economies are today at their worst comparative level in the world economy and are increasingly becoming marginalized. In twenty years, Africa's share of world trade declined from 4% to 1%. Between 1970 and 1993, Africa's share of world trade in cocoa beans declined by 20.2%.[12] Africa's per capita output on the average is lower in the 1990s than 30 years earlier, and in real terms fiscal resources are today smaller than in the late 1960s.[13] For many countries, average output per capita fell by more than 50%.[14]

With the end of the Cold War and the opening up of Eastern Europe, Official Development Assistance and foreign direct investment (FDI) to African countries have declined drastically, such that, according to P. Anyang' Nyong'o, FDI "is no longer a factor in certain countries[15]". At the same time, Africa's external debt is at its highest. For many countries in the continent, debt servicing is over 50 per cent of export receipts; for Uganda, it is 144 per cent.[16]

Africa is faced with the stark realities of poverty that is deepening in many parts of the continent. By some estimates, poverty is expected to continue to increase in the continent well into the 21st century. According to the United Nations Development Program (UNDP)[17], the percentage

of the total population in poverty in Burkina Faso is about 45%, in Gambia 50%, in Mali 70%, in Mauritania 50%, in Morocco 13%, in Mozambique 69%, in South Africa 40%, in Tunisia 6%, in Uganda 46%, and in Zimbabwe 61%.

The challenges are numerous. In addition to growing their economies and reducing poverty, African governments and citizens must address the problems of corruption, civil strife and wars, environmental degradation, and low agricultural productivity. They must continue to enlarge the democratic space, encourage openness and foster the rule of law.

Refugees number around 3 million while the number of internally displaced persons is about 16 million.[18] With declining income, investments in education, health and infrastructure (water, electricity, roads) have fallen. The quality of education and health care has declined tremendously. Infrastructure is dilapidated, with bad roads; over half of the population does not have access to portable water. Many diseases that were thought to be under control previously are back with a vengeance, while newer ones such as HIV/AIDS have become major concerns. Despite comprising about 10 per cent of world's population, Africa is home to almost 70% of total global HIV/AIDS cases.[19] In several countries, the rate of HIV infection is over 20%. With these numbers, the long-term survival of Africa is indeed questionable.

While Africa is faced with challenges of survival, the world is rapidly moving towards a new age, the age of information and knowledge. The challenges facing Africa are made more daunting by the fact that competition is more intense and global. The fastest growing products are highly knowledge-intensive. Additionally, internal factors such as wars within the continent are not conducive for socioeconomic development, and are complicating the complexities of governance in Africa while reducing the capacity of African countries to satisfy the desires of the populace. Rightly, good governance has become a highly sought-after commodity as well as the dominant factor in development discourse.[20] Good governance holds the key to overcoming the enormous obstacles to development. Creative solutions will have to be sought, including employing new tools.

Having taken a cursory look at the historical context of governance in Africa since independence and haven identified the challenges of governance facing African societies, this paper will now focus on a key question: how can information and communication technologies be used to improve governance in Africa? But first, an attempt will be made to provide a definition of governance.

3.   Defining Governance

Governance is two sided: political and economic. The political aspect deals with the way a nation is governed. It comprises how the citizens, institutions, and businesses articulate their interests, mediate their differences, exercise their rights and obligations, and agree to relate to each other.[21] In this regard, governance deals with how power is exercised, how open the political process is, how decisions are made, and how much of a voice citizens are given in decision-making and in the management of public affairs.[22] The other aspect of governance is economic. This deals mainly with how societal resources are managed (public sector management) and the role of governments in the process of socioeconomic development. The economic aspects also provide the context in which corporate governance is practiced by setting the laws under which corporations are established and the regulatory framework for the conduct of corporate affairs. Sound corporate governance is increasingly becoming important due to its role in building a healthy and competitive corporate sector, which is fundamental for sustained and broad-based economic growth.

In the developing world areas, such as in Africa, where satisfying basic necessities of life is still a challenge, the definition of governance must be inclusive. Good governance must include effective participation in public decision-making and management by citizens, accountability, legitimacy, transparency, the rule of law, and an open and enabling environment for addressing socioeconomic problems. This requires participatory democracy and capacity by governments to respond to the demands of development. The capacity aspect must be emphasized as "…a more open, participatory government is not a sufficient condition for good governance. Expression of citizen demands, whether for services, accountability, or transparency, is futile without a government willing and able to listen and respond. A democracy without effective administrative capacity is an empty shell.[23]" As such, good governance is not only about providing an open and free political atmosphere, it also requires a government with the capacity to raise the standards of living and quality of life of the people.

From this description, governance in many African countries is still far from "good" because the systems are not as open as they should be. Additionally, most governments are unable to satisfy the most basic needs of their people; accountability and transparency are low, and many people are unable to participate effectively in the governance process. As a result, many doubt the long-term sustainability of the current effort at instituting participatory democracy in Africa, as the people grow more disenchanted with the pace of progress.

The slow progress, the manipulation of the process, and the resulting disenchantment has prompted experts to wonder whether participatory democracy in Africa will thrive or collapse in the near future. After analyzing the recent wave of democratization in Africa and the daunting challenges faced by African societies, Samuel Decalo concluded that "… the majority of Africa in the absence of global fiscal munificence, may—once the international vogue with democracy recedes—be cut loose to drift their own way, sliding back into political strife, dictatorship and military rule.[24]"

The capacity of African societies and leaders to respond to and address critical challenges such as: achieving sustained high economic growth and development, meeting basic needs such as food, shelter, housing, clean water and electricity, providing better access to education and health, increasing agricultural productivity, ending civil strife and wars, and reducing poverty substantially hinges on whether Africa is able to institutionalize good governance. Conversely, addressing these factors will also determine whether the current wave of democratization will be sustained and become the norm in the 21st century.

We now focus on the opportunities provided by information and communication technologies in addressing this complex situation.

4.   ICTs for Improved Governance

The rate of scientific and technological change has greatly increased over the last half-century. Nowhere is this more the case than in the areas of information and communication technologies. Advances in these fields are bringing about a new economy that is global, interconnected and knowledge-based. The result is the new age of information and knowledge, which is upon us.

ICTs are changing lives in ways we could have hardly imagined less than two decades ago. The convergence of computers, telephony, and communications is changing the way we live and work, and it is transforming many aspects of social and economic organization. Not only are ICTs affecting the way we do business, they have led to the creation of entirely new industries such as software, e-commerce, and e-government.

ICTs have become enablers of change. ICTs on their own do not create transformation but they are best seen as facilitators of change, innovation and creativity. ICTs unleash the creative potential embodied in people. As noted by Robin Mansell, "ICTs offer the potential for revolutionary changes in national and regional innovation systems."[25] They have the potential to strengthen economic growth and are being used to create new markets, new technological applications for collaboration, and new methods and tools for scientific and technological research.

Not only do ICTs facilitate information exchange, they are deepening the process, creating new modes of sharing ideas, and reducing the costs of collecting and analyzing information. ICTs are "about information flowing faster, more generously, and less expensively throughout the planet. As a result, knowledge is becoming an important factor in the economy, more important than raw materials, capital, labor, or exchange rates.[26]"

For many experts, ICTs not only present the best opportunity for accelerated development, they offer a serious chance for developing countries to catch-up with the rest of the world for the first time and even leapfrog ahead in some areas.[27] The belief that ICTs are formidable and cost-effective tools for developing countries is widespread. "Properly used they can reduce poverty; empower people; build capacities, skills and networks; inspire new governance mechanisms and reinforce popular participation at all levels. The range of applications are limitless, from electronic commerce, to the empowerment of communities, women and youth; from the promotion of good governance and decentralization, to advocacy programmes, including the observance of human rights; from long-distance education to telehealth and environmental monitoring.[28] The potential application of ICTs to address challenges of development is wide. In fact, the opportunities to apply ICTs as an "enabler" and "facilitator for development are almost limitless. In the remainder of this paper, however, the particular focus will be the scope of ICTs within governance.

All over the world today there is a new wind blowing, bringing ICTs to governance. From Singapore, India, Australia, United States to Egypt there are efforts at various levels to bring ICTs to bear on the way society is governed and managed. It is expected that after the e-commerce revolution the next is e-government. The reasons are simple: to improve the quality of service, increase the effectiveness of governments, and reduce costs. The key benefits come from the way in which ICTs can reduce purchasing and fulfillment cycles and lower administrative costs. Some of the big multinationals that have embraced e-commerce intensely by putting their supply chains online are saving upwards of 20%, reducing inventories by about 50% and in some cases lowering their administrative costs by up to 75%.[29]

ICTs are potentially capable of transforming the way in which most public services are delivered and also the relationship between government and the citizen.[30] Richard Heeks has identified three basic change potentials for ICTs within the context of governance[31] :

Support: ICTs can be used to facilitate existing tasks and processes.

Supplant: ICTs are particularly useful for automating repetitive and tedious tasks, especially when it comes to storing, processing and transmitting information.

Innovate: ICTs can be used effectively to undertake new tasks and processes that did not exist.

Within the African context governments can deploy ICTs to meet developmental challenges and facilitate good governance. As pointed out by Mansell and Wehn, "Governance is a highly

information-intensive and expensive activity. ICTs are being seen as offering an efficient way of cutting costs associated with generating and disseminating this information.[32] " ICTs can be used to enhance the democratic process, ensure effective participation and bring government closer to the people. In addition to expanding the democratic space, ICTs can be used to address many of the developmental challenges from effective macro-economic and public sector management and promoting human capital development, to reducing poverty.

We now turn our attention in the next section to specific examples of how ICTs can be used to address these issues. We will examine how ICTs can be used as tools for the public good in the following areas: democratization and democratic governance, macroeconomic and public sector management, human capital development and agriculture and environmental management

4.1   Democratization and Democratic Governance

A key characteristic of well functioning states all over the world, Africa inclusive, is democracy. Strong elements of democracy are people's participation in governance through regular elections and a vibrant civil society. If the new efforts at re-democratization in Africa are to lead to genuine democracy there is a need to create a democratic culture, a culture that is receptive to political competition through popular participation not just in elections but also in decision making. In a democratic culture, the spirit of open and public dialogue is critical.

Democratic governance requires an open government and easy access by citizens to the government. In Africa, especially, poor networks and infrastructure exacerbate the difficulties of communications between citizens and government. For almost 70% of the African population which are in rural areas, access to government is like accessing the distant galaxies. ICTs, especially the Internet and Web, can be used to develop a democratic culture in Africa through revitalizing open and public debate, establishing open government, enhancing interactions between the "governors" and those being "governed", promoting equity, and strengthening the capacity of public officials.[33]

4.1.1   Enhancing Participation in the Democratic Process

A key challenge facing the nascent democracy in Africa is to ensure effective participation by all in the democratization process and in governance. As Joe Coates[34] and Sam Pitroda[35] have pointed out, ICTs are the most potent democratizing tool ever. The access of ordinary people to information technology "is the strongest breath of fresh air pushing political equality that we have had since the beginning of the industrial era.[36] " ICTs can be used to open the government to the public and can also provide the citizens a better ability to enhance their interaction with each other and with the government. Parliaments and government agencies can provide information on programs and pending legislation online. Citizens can be invited to send in comments and their views to government officials or parliamentarians. By so doing, their views can be taken into account before laws are passed and policies made. This will have the effect of making government more transparent, accessible, accountable to its constituents and will likely reduce public cynicism about the political process.

Box 1: Constitution Drafting

When South Africa drafted its new constitution thousands of citizens were able to participate in the process through the Constituent Assembly's Web Site. Submissions by citizens, associations, and political parties were posted on the Web Site in addition to the draft text of the constitution and official documentation. Thus, members of the Constituent Assembly and the public had immediate and efficient access to all documentation. This increased public participation in the process and allowed members of the assembly to monitor submissions.[37]   In Malawi also during the constitution drafting process the Internet was used to solicit views of Malawians outside of the country and constitutional experts all over the world. The draft text of the constitution was posted on the Internet to solicit comments. The Constituent Assembly received extensive feedback.

Box 2: Legislation

An organization in South Africa, Legi-Link, reports on the country's parliamentary process. Legi-Link provides information on upcoming and pending legislation, bills, summaries of debates and committee meetings. The information allows civic groups and individuals to follow the legislative process closely and to participate. Services such as this should increase the participation of the people in the political process, as information provided should give groups a better understanding of the issues.[38]

Box 3: Enhancing Women's Participation in Governance in Kenya

In Kenya the family Support Institute (FASI), a non-governmental organization, is currently implementing a women and governance project. FASI has established two community resource centers equipped with ICTs in the Eastern and Western provinces. The project aims to strengthen the participation of women in the democratic process and governance in Kenya. More specifically, FASI aims through the project to inform Kenyans, especially women, of critical issues, enhance women's interaction, enable women to make informed decisions and participate effectively in the electoral process. The project will use ICTs to facilitate cooperation among women, gain peer support, campaign effectively, and further the interests of women. At the community resource centers women are provided civic education, trained, and consultative meetings are organized. The results are increased women participation in the political process by attending political meetings and actually voting. Significantly, more women voted in 1997 elections compared to 1992 and more women are presenting their candidacy in elections both at the civic and parliamentary levels.[39]

ICTs can enhance interactions between citizens, promote dialogue and enhance understanding of issues. In addition to expanding people's access to information, ICTs provide the means for people to let their voices heard. ICTs can promote empowerment by enabling people to communicate with each other using electronic mail and through electronic discussion fora. A powerful example of how ICTs can enlarge the democratic space and enhance people's participation is the recent Democratic Primary election in Arizona State in the United States. For the first time, people were allowed to vote via the web and the turnout was 600% higher than turnout during the last election in 1996.[40]

4.1.2   Enhancing Democratic and Parliamentary Institutions

The dynamic interactions of ideas and ICTs open up new frontiers on how to improve democracy. In Africa key needs include building the capacity of those that have been left out for the longest time (especially, women, youth and minorities), strengthening transparency and accountability, and decentralization of government functions to local and regional levels. Despite the fact that women are normally more in numbers than men, their role in politics tends to be limited. All over the world, they represent a very small percentage of elected and appointed government officials. This, in addition to corruption and the lack of transparency and accountability, pose a major challenge to the deepening of the democratic process in Africa.

Box 4: Empowering Women Parliamentarians in Uganda

In Uganda, a no-party democratic state in which women's participation in the politics is encouraged through the establishment of a quota system, a non-governmental organization has been set-up to enhance the capacity of women parliamentarians. The Forum for Women in Democracy (FOWODE) "accesses critical and relevant information on the Internet for Women parliamentarians, which make a difference to their contributions in parliament.[41]" FOWODE has trained most members in basic computer skills. In addition, FOWODE program officers use the Internet to gather information on important issues for parliamentarians. The program officers serve as information brokers and undertake research on issues at the request of parliamentarians.

Box 5: Transparency and Accountability

Corruption is endemic in Africa, and it reduces the efficiency of service delivery, reduces economic growth and discourages foreign investment. Efforts at reducing corruption have led to the proposition that governments should transfer a major part of their operations, especially procurement, to the Internet.

The state government of Victoria in Australia has deployed a paperless system with access by 5,000 users that provides complete transparency between vendor and user. In addition, to increasing purchasing efficiency of its Department of Natural Resources and Environment by 70%, it has kept fraud down and increased accountability. The other regional governments in Australia are likely to adopt this model.[42]

In Kenya, the Information Technology Standards Association (ITSA) has launched an Electronic Graft Management (EGM) pilot project to increase public awareness and enlist the public in fighting corruption.   The EGM project will offer a corruption reporting facility in six towns where there is Internet infrastructure already. Existing cybercafés and e-Touch centers in these towns will be used. Anonymity will be ensured and reports will be transmitted to EGM centers for analysis and follow-up with the relevant authorities. Two additional centers will be set-up in rural areas without Internet infrastructure to broaden the base.   ITSA plans to use highly motivated youth, provide training, and make reporting easy and free. An evaluation of such an initiative in the future must be undertaken to see the usefulness and how other African countries can benefit from setting-up similar programs.[43]

4.2   Macroeconomic and Public Sector Management

Many African countries have made notable progress in reforming their economies, improving macroeconomic management, liberalizing markets and trade, opening their economies to the private sector and strengthening the policy environment. The results have been increased growth, lower budget deficits, and declining rates of inflation. The high performing countries have also been able to reduce poverty.

The key challenge facing African countries in this new century is how to grow and develop their economies. To maintain the current levels of poverty, African economies must grow at least 5% annually.[44] To reduce poverty substantially, a minimum growth rate of 7% is required.[45] Yet, Africa is lagging behind in technological know-how; and its ability to compete in the global economy is eroding. How can Africa increase its competitiveness, diversify its economy, and reduce aid dependence and its massive external debt? High external debt is absorbing the major part of government resources and deterring private investment.[46]

Despite the recent improvements in the policy environment and macroeconomic management, a lot remains to be done. In many parts of the continent, evidence shows that there are still inefficiencies in resource mobilization and public sector management.[47] As noted by Oshikoya and Hussain, "Progress in stabilizing the macroeconomic environment, strengthening the efficiency, accountability, and transparency of government can benefit a great deal from the introduction of information technology applications. Information systems which can help government design, implement, and assess policy reforms are now powerful instruments of public policy. Such information systems could increase the speed, volume, quality, transparency, and accountability of government transactions, yielding large productivity increases in government services.[48] "

4.2.1   Improved Decision Making and Public Administration

In the complex and complicated world of today, a key challenge facing African governments is the lack of capacity for policy making, implementation and management. Despite the call for a smaller public sector, more and more, governments are called upon to play a supportive role and create an enabling environment for development, help enhance the competitiveness of national firms in the global marketplace, and nurture scientific and technological capacity. For African countries, the challenge is daunting, from managing the economy, servicing huge external debts to providing basic services for the population. Yet, many African governments simply do not have

the information that is needed to make sound policies nor the manpower to do so. To meet these challenges, governments all over the world are embracing ICTs.

Box 6: Providing Information Decision Support:

To improve its decision making process, the government of Egypt created the Information Decision Support Center (IDSC) in the 1980s. The center was created to provide advisory services to the cabinet of Egypt. To show the importance of IDSC, the director was given a cabinet rank. With the support of the government, IDSC was able to place its own staff in all government ministries and all the 27 governorates of Egypt. A key role of these IDSC employees is to collect information. One of the first tasks embarked upon by IDSC was to build and implement a debt management system for the Egyptian government. At the time, Egypt's external debt stood at about US$33 billion covering about 5000 loans. The debt management system developed by IDSC, helped the government in the rationalization of debt utilization and was used to facilitate debt rescheduling and reduction. The debt management system made a major impact and led to the debt rescheduling with over 14 countries. The system is now used to manage Egypt's external debts and has allowed loans to be looked at as part of a comprehensive, integrated and dynamic portfolio. Since the success with the debt management system, IDSC has started many other projects, including TradeNet (a trade information system).[49]

Box 7: Promoting Exports and Private Sector

If Africa is to raise the standard of living of its population and reduce poverty substantially in the near future, there is a need to diversify its exports and raise competitiveness of its firms in the global marketplace. This requires a strong African private sector. Adoption of ICTs at the enterprise level in Africa will raise productivity and increase their efficiency and effectiveness. ICTs can also be used to market African products globally. ICTs can be used to simplify the process of doing business in Africa by providing relevant information such as the investment code and tax laws on the Web. Government services for private sector can also be performed over the Web to simply the process of investing for investors and to help firms in seeking new markets overseas. Such a system can provide online information on markets, market regulations, prices, and potential suppliers and buyers.

With an initial investment of US$1 million, Mauritania implemented an ICT-based trade management system. "The system reduced transaction costs associated with external trade as customs processing time was reduced from 48 hours to 30 minutes, and the time it takes to declare goods to between one and two days from 5 to 20 days.[50] "

The development of national and regional capital markets, which is necessary for private sector development, can be facilitated by the adoption of ICTs. The recent establishment of a regional stock market in Abidjan was aided by ICTs. The eight countries of UEMOA transformed the Abidjan stock exchange into "Bourse Regionale". All the local representatives in the member countries are linked with the main office in Abidjan with a satellite information system. The planned regional stock markets for Central, Eastern and Southern Africa will also benefit from using ICTs. In addition, stock exchanges in Africa are also computerizing. An example is the Nigerian Stock Exchange that was computerized in 1997.

Box 8 : Improving the Procurement Process

Using Business-to-Business (B2B) trading networks firms are able to reap huge benefits. Governments around the world are scrambling to join the B2B revolution and place their procurement system on the Net. As pointed out in *The Economist*, electronic procurement has become one of the fastest growing e-business because of the cost benefits "in the form of more competitive bidding, easy access to suppliers around the world, time saved by online processing of orders, lower stocks and automated collection of high-quality data.[51] "

Singapore government recently set-up GeBiz to serve as a one-stop, around-the-clock center for its business dealings. The system works by linking together financial systems of government agencies and procurement applications. By allowing the systems to work together, the trading partners of Singapore's government can find invitations to tender and purchase orders on the GeBiz site. Through the GeBiz site suppliers can bid for contracts, submit invoices and check status of payments.[52]

Turkey, at the cost of US$8 million, recently computerized and put the administration of its health program for public sector pensioners on the Internet and intranet. The social security organization (Emekdi Sandigi) collects the premium and pays the health expenses of about 2 million public service pensioners and their dependents.   The system was previously prone to error, fraud and delays. Pharmacists had to manually process about 15 million prescriptions every year and payment delays were up to two months. The ICT project was used to link 17,000 pharmacies together and all information was brought online. Pharmacists can now check the validity of a customer's health card and prices of medicines on line. The system has reduced the cost of administration to the point that the initial US$8 million will be recovered in the first full year of operation. Payment of pharmacists now takes less than a week. Customers can now use any pharmacy in Turkey unlike before, and a medical community between hospitals, pharmacies and doctors is now being built.[53]

Box 9: Providing Better Services

A key part of governance is the provision of services ranging from registration of land and companies, issuing permits and licenses to tax collection. Governments are not known to be very efficient. The stereotype or popular perception is that governments are bureaucratic and unresponsive. With the innovations in ICTs, governments have begun to utilize the Web to improve their service delivery.

Arizona (a state in the United States) began a program, ServiceArizona, in 1996 to allow its citizens carry out a growing range of transactions on the web. Instead of having to stand in a queue at the motor vehicle department, they can go online 24 hours a day, seven days a week, in a transaction that takes an average of two minutes. The system is free to users and was set up at no cost to the state of Arizona. The site was build by IBM in exchange for being paid 2% of the value of each transaction. Because online requests cost US$1.60 compared with US$6.60 regular transaction, the state is also saving money. As of now with 15% of the total renewals, the state is saving about US$1.7 million annually.[54]

Oficina Registral de Lima y Callao (ORLC), an independent agency of the government of Peru. ORLC had existed since 1888. It is based in Lima and provides verification of the legal status of property, including businesses, homes and personal estates. ORLC was known to be a notoriously slow agency. A simple request could take as long as 4 months. In addition to the length of time it took to get a certificate from ORLC, illegal sales of homes to more than one buyer were frequent. Between 1995 and 1999, ORLC computerized, automated the entire system and provided access through its web site (www.orlc.gob.pe). Service users can register or verify the value of a property, check on the status of a certificate, and trace the ownership of a plot of land over the Net. The new system is safe and saves time and money. For customers without access to the Net, the benefits are still enormous. With the system, ORLC employees can quickly retrieve information for walk-in customers.[55]

For the governments of Morocco and Chile, a better administration of the tax system is one of the reasons for the application of ICTs in governance. In 1989 under the Public Administration Support Project Morocco began to use ICTs to enhance the capacity of its Ministries of Finance and Planning. The project focuses on increasing the efficiencies of the ministries in tax administration, auditing, planning public investment and monitoring. ICTs are also being used to plan expenditure management, resource allocation and to coordinate activities of different ministries. It is estimated that time required for budget preparation has been halved since 1989.[56] In Chile, the Internal Taxation Service is now using the Internet for tax collection. It now allows tax returns to be filed entirely on the web. Chileans can look at their tax history, schedule payments, and check accuracy. The system has reduced the time spent on each transaction and the number of errors.

Box 10: Building Human Capital

To entrench democracy and improve governance, increase productivity, diversify the product base, raise exports, reduce population growth, improve the health status of the population and reduce poverty, education is crucial. Development will probably remain a elusive unless Africa is able to invest in its people. After four decades of development experience, it is quite clear that education is essential for socioeconomic and industrial development. Without using ICTs, how can Africa educate its citizens and facilitate life-long learning, in the face of declining resources?

ICTs offer African countries effective tools to educate their citizens, build the capacity of their labor force and improve their quality of life. The use of ICTs can help reduce the cost of education and make education accessible to a much wider audience. ICTs, especially the Internet and web, can facilitate distance education, provide new methods of learning while also improving educational productivity. The new technologies are increasing the opportunities for life-long learning for those wanting to update their knowledge or skill in order to remain competitive.[57]

From the African Virtual University initiated by the World Bank[58] to smaller programs, efforts are being made in the continent to employ ICTs to educate the people and build capacity for socioeconomic development. The African Virtual University was set-up to remedy the shortfall in education and particularly in science and technical education.[59] A new Satellite University in Uganda was launched this year under the auspices of Makerere University in Kampala. Twenty sites will be established when it is fully operational and students in the sites can participate in courses and programs offered by Makerere University. The effect of this will be the expansion of educational opportunities in Uganda and the lowering of the cost of education.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) launched in 1997 the Learning Networks for African Teachers (LNAT) to help teachers "become better learners and teachers.[60]" Pilot projects are being implemented in Zimbabwe, Senegal, and Namibia with proposals for other pilot projects. Another ICT project to promote education within the continent is Global Education Network for Africa (GENA).[61] GENA is a regional project to share national programming for distance education. The project will allow broadcasters to share the cost of accessing educational programming. The initial participating countries in GENA are Kenya, Namibia, Swaziland, Uganda and Tanzania. Ghana has recently developed special programs to network schools to provide distance learning and tele-medicine applications.[62]

Box 11: Building a Healthy Society

Closely linked to education in building human capacity is health. Good health is an important pre-requisite for socioeconomic development and it is a major part of services provided by governments in the developing world. The important linkage between poverty and ill health is widely recognized.[63] ICTs are being employed to facilitate the more efficient exchange of information between health professionals thereby saving time and money.[64] ICTs are also being used effectively to provide useful health information. From Cuba, Mali, Ghana, Tanzania to Bangladesh, developing countries are applying ICTs to improve the health care of their citizens.

Cuba created Infomed, a national network for its public health system, as a way to share knowledge and facilitate access to medical information. The program is now nation-wide with regional and provincial nodes. In addition, it now has a virtual library component covering medical journals. Infomed is empowering people and has made significant contributions to building national capacity to manage new information technologies.[65]

In Tanzania, the Muhimbili Medical Center in Dar-es-Salaam is effectively using the Internet to reduce the high rate of mortality among its pediatric patients. Using the Net, the Muhimbili Medical Center is able to consult experts world-wide and also source outside support.

HealthNet, a major health care network is providing support to African countries to improve their health interventions. The network is facilitating collaboration among medical staff in countries such as Mozambique, Tanzania and Uganda. HealthNet is also providing a system for data collection and sharing in Gambia which is saving time and money. The HealthNet system is being used to disseminate information in Democratic Republic Congo (DRC), to facilitate research between Malaria researchers in Ghana and at the London School of Hygiene and the Tropical Research Center in Geneva, and to provide early warning on he outbreak of epidemics.[66]

4.3 Agriculture and Environmental Management

Africa is largely agrarian with the majority of the population dependent on subsistence agriculture. If productivity in this sector and access to information can be increased, a significant progress will be made in the continent's war against poverty. In addition, wise use of environmental resources will facilitate sustainability. ICTs hold considerable promise in both of these areas.

The applications of ICTs in agriculture and environmental management include multimedia public information kiosks, air and water quality monitoring, warning systems, market information, harvest management, and disease monitoring. ICTs can be used to capture and share information on advances in agricultural research and new techniques. ICTs can also facilitate agricultural extension. In the agricultural sector, ICT applications are being promoted to facilitate wide access to information, and intensive sharing of knowledge.

ICTs can also be used to build the capacities of farmers through distance education and life-long learning programs. Access to information and training will allow farmers to learn new techniques in order to raise their productivity. In addition, geographic information systems (GIS) which combines information on soils, hydro-geology, rainfall with socioeconomic data allows for early warning. An example of this is the US Agency for International Development (USAID) funded project (Image Display and Analysis) which uses data from satellites to forecast crop yields and provide early warning on food security.

Other projects in which ICTs are being used to facilitate sustainability and food security in Africa include the United Nations Development Program's Sustainable Development Networking Project (SNDP)[67], The Ghana Agricultural Information Network System (GAINS)[68], Business Intelligent Trade Point in Burkina Faso[69], and UNEPnet of the United Nations Environmental Program[70].

5.   ICTs and Governance: Risks and Challenges

Despite arguments to the contrary, in this paper, we assumed that ICTs could play a significant role in improving governance in Africa by enlarging the democratic space, enhancing dialogue, facilitating inclusiveness, and by providing governments the tools to better perform their administrative and management functions. ICTs offer the enabling tools to improve the way societies are organized. In addition, the application of ICTs has the power to significantly improve and facilitate horizontal communication among people and communities of interest. This is potentially empowering.

On the other hand, it has been argued by others that new technologies are now providing the necessary tools that could facilitate the realization of the Orwellian scenario, "1984", which foresaw complete control by big government. The argument is that ICTs provide the ability for governments to finally monitor activities of individuals and to completely control society. We will, however, take the positive view in this paper and argue that ICTs can make significant contributions to the realization of good governance in Africa.

The optimism should be tempered, however, by the realities of the African environment. Despite the capacity of ICTs to facilitate communication and bring people together, they have also become another dividing factor. In Africa today and much of the world, there is a "digital divide" between and within nations. Africa today is at the bottom of the ladder of the information society compared to the other continents. Within African countries, there is emerging a major divide between the relatively "information-rich" and the abjectly "information-poor". This division is probably more pronounced as only a very few can afford to be linked to the global information highway and ICTs. The reasons vary but the most important are: poverty and lack of education.

The cheapest Internet computer today is about US$300 in the United States. In Africa, despite the fall in prices and market liberalization, the cheapest computers retail for about US$1000. This is double the average per capita income for most Africans. In addition to a computer one needs a telephone line and an Internet Service Provider (ISP) to participate in the information

society. For majority of Africans, telephone is a luxury, which is either not affordable or not just available. Waiting time to get a telephone line in Africa could run up to 10 years at a cost of over US$1000 per line. Even when the line is available, the charges are the highest in the world. African ISPs are also scarce, expensive and unreliable. The result is only 1 out of 5000 Africans is an Internet user compared to 1 out of 6 in North America.[71] In the most populous country in Africa, Nigeria with population well over 100 million, only 1 out of 100,000 people is connected to the Internet.

Additionally, ICTs are new technologies. They require some knowledge and expertise to use. In Africa literacy rates are low with too many people unable to read or write. Even when one can read, ICTs require training to be able to use them effectively. Despite novel ways of providing access through community centers and sharing of access, these factors conspire to keep the financially poor away from joining the information society.

Box 12: ICTs in Senegal

 By African standards, Senegal has a reasonable telecommunication infrastructure. Yet, it shows some of the problems facing African countries. One of the first countries to be fully connected to the Internet, Senegal went on-line in March 1996, when the national telecommunications company, Société Nationale des Telecommunications (SONATEL) began to offer a full Internet service. A subsidiary of SONATEL, Telecom-Plus, appeared as the first Internet Service Provider (ISP) and soon afterwards Metissacana, a cybercafé, was launched. Since then the number of dial-up subscribers has increased steadily, totaling approximately 11,000 earlier in 1999. Nine ISPs are now competing for the retail access market, while SONATEL retains its monopoly over international connectivity. International connectivity is provided by two Intelsat links (2Mbps on Teleglobe and 64Kbps on MCI), and a 2Mps link using the new fiber-optic submarine cable Atlantis-2.

Costs and illiteracy are important constraints to the use of ICTs in Senegal. The average price of Internet dial-up access in Senegal for 30 hours of on-peak usage per month (including telecommunication charges) is around US$92. Off-peak rates are much better; the same 30 hours usage per month package costs around US$38. Access to the Internet requires computers too. A basic entry-level personal computer costs about US$1000, which is twice the GDP per capita of Senegal. For the majority of Senegalese, of which 54% lives with less than US$1 per day, personal computers are simply unaffordable. The country's high illiteracy rate also prevents many from using the Net. UNDP estimates that 35.5 % of the adult population is literate while the secondary school enrolment ratio is 20%. Only around 3% of Senegalese youth are in high school and given inadequate facilities in schools, computer literacy is likely to be even lower.[72]

The digital divide is a challenge. Even in the most connected countries such as Norway, Singapore and the United States, less than 50% of the population have access to the Internet from home.[73] For the most connected country in Africa, South Africa, less than 5% of its population have access from home to the Internet.[74] The access barrier faced by the poor, if not addressed, will exacerbate the division in society. It will also increase the power of the affluent relative to the poor and continue to ensure that the poor are left out. This is not good for African societies where there is a need for inclusiveness as a result of the many other divisions that already exist.

Additionally, governments, unlike corporations, must provide services for all and not a select few. If ICTs are going make meaningful impact on governance in Africa, many more people will have to be able to afford and use ICTs. Otherwise, governments will only be catering to the interests of the elite that can afford to use ICTs. This however should not stop governments from using ICTs to improve the policymaking process and management.

At the societal level, even if African governments are willing and able to bring the era of e-government to life, the environment is constraining. The infrastructure necessary for the information society is pitifully inadequate while financial resources are becoming more and more limited. As pointed out by Mansell and Wehn, "the most basic telecommunication infrastructure is still absent, unreliable and/or very costly.[75]" In 1995, the number of telephone main lines per 100 inhabitants was 0.5 for sub-Saharan Africa, and 3.4 for North Africa compared to 101 for developed countries.[76] Estimates show that at current growth rates, it will take sub-Saharan Africa over 100 years to reach the 1995 level of Ireland, the country in the European Union with the lowest number of lines per 100 inhabitants in 1995.[77] In addition, power supply is a major problem. In many cities where there is electricity, power supply is unreliable and in most rural areas it is simply not available.

While the barriers to creating the information society in African countries are high, the opportunities for connection are growing. Recent efforts to liberalize the telecommunication sector and open it to private sector competition are paying off in several countries. Digital wireless telecommunication networks have sprung up in many countries to the extent that cellular telephones have become quite common. In Cote d'Ivoire, there are three cellular telephone companies providing services in many parts of the country. Getting a cellular telephone in Abidjan, the economic capital of Cote d'Ivoire, today takes less than a day and costs about US$90 to sign up. The sign up fee includes a GSM cellular telephone plus a calling credit of about US$30. New technologies coupled with improving the policy environment are allowing African countries to address the risks and challenges. For example, the main lines of Botswana, and Rwanda are completely digital, and are among the most sophisticated in the world. Egypt announced that it would reduce by up to 60% the cost of local leased lines for ISPs from October 2000.[78] This should reduce the cost of Internet access substantially.

New technologies, donor support and local initiatives by non-governmental organizations are also helping in addressing the telecommunication challenge. New approaches such as community access centers and kiosks, pay phones managed by individual entrepreneurs such as in Cote d'Ivoire and Senegal, and information boutiques in Burkina Faso are providing alternative and more affordable access for many.

Donor initiatives are also easing access problems on the continent. UNDP has initiated several programs. Two are worth mentioning: the Africa Internet Initiative that connected ten African countries to the Internet, and SDNP which is being used to help build capacity, to introduce people to ICTs and to promote sustainable human development in the developing world, Africa included. The Leyland Initiative of the USAID also connected several African countries to the Internet. The latest information indicates that there were over 90 agencies or programs involved with enhancing the use of ICTs for development in Africa.[79] Despite the progress and opportunities, a lot remains to be done with regards to cost, education, infrastructure and policy environment.

We now provide some ideas and policies that African societies and governments might want to consider in order to be able to capture the opportunities provided by ICTs for improving governance.

6.   ICTs for Improved Governance in Africa: Considerations and Policy Recommendations

Notwithstanding the problems facing African countries, ICTs are being deployed on the continent. To date, many African governments have web sites, albeit rudimentary and externally focused. These web sites can be consulted for information on the countries. The most popular area of focus is tourism promotion. Countries such as Botswana, Gambia, Ghana, Egypt, Kenya, Morocco, Senegal, Tanzania, Zambia, and Zimbabwe are pioneers in this regard. Tourists can obtain basic information on travel, tours, hotel accommodation and some can actually make reservations through the Internet. African-oriented discussion groups and other web sites providing African content are also multiplying on the Net. In addition, government departments throughout the continent are deploying computers and other ICT equipment.

These applications are only the beginning. The opportunities to apply ICTs for improved governance in Africa are many. Increasingly Africans are calling for democracy, democratic institutions, more open and plural societies, more involvement in public decision-making and a more effective administration. That is, an administration that is not only willing and able to listen but must also have the capacity to design, implement and manage policies. The room for e-governments and application of ICTs to nurture the nascent democracy just evolving in Africa is enormous. How then should a country proceed?

As pointed out in the special survey of the *Economist* on Government and Internet, the way to e-government involves four distinct stages.[80] In the first, government departments use the web to post information about themselves and services for the benefits of citizens, business partners and other interested parties. This is the stage that most African governments are approaching today. Those who have sites only use it to disseminate information about the country; in other words, to communicate in one direction. In the second stage, the web site becomes a tool for two-way communications, and citizens can communicate with their government through the web. In the third stage, the sites allow for more interaction to take place, with web-based self-service for work previously carried out by government officials such as renewing a license, paying fines or filing tax returns. In the final stage, the sites become a portal that integrates a complete range of government services and provides access to citizens by function rather than department.

Most African countries are still below the first stage. African governments and societies will have to begin by integrating ICTs into the array of tools at their disposal to realize good governance and socioeconomic development. Beyond this, is the need to overcome the numerous obstacles, identified earlier, to creating the African information society. To meet the challenges, we now propose some ideas for considerations by African governments to enhance the chances of success of ICT projects and minimize the risks of failure, which is as high as 85%[81] for public sector ICT projects. In the subsequent section, we devote our attention to policy issues.

6.1   Ideas for Consideration

African societies must see ICTs as tools, which they are. ICTs are to be employed and used for specific ends and should never be seen as ends in themselves but as tools that can be employed to realize the societal vision of the future. As such, the focus should never be the technology but the job at hand. The goal must not be technological sophistication but getting the job done in the most efficient and effective way. The key is to ensure that societal objectives and goals are defined first.

African countries must develop the strategic intent and have the determination to exploit the opportunities provided by ICTs. This will dictate the need to understand the role that ICTs can play in improving the quality of life of the average citizen and how ICTs can be used to achieve national goals.

Exploiting ICTs for societal goals requires political will and committed leadership that fully understands ICTs, and respects their applications. A high-level leader that will act as project champion must lead each ICT project. Otherwise, an ICT project will likely fail. The leadership must also get the commitment of the communities of interest/stakeholders and have a strategy to "overcome the barriers to change". Participation by key stakeholders in the planning, design, budget decision and implementation of ICTs projects is a strategic way to encourage ownership and enhance the chances of success. This is particularly important in the African environment where public servants are not very motivated.

It is crucial to start small. Everything cannot be done at once. Experience has shown that it is better to start small and implement programs in stages. Most successful ICT initiatives start out modestly. They go after things that are small and do not lead to major changes but can lead to noticeable benefits. Resource scarcity and the need for learning make this a crucial consideration for African countries. Policy makers must therefore implement projects in stages. Show the benefits before moving to the next stage. This is likely to engender support and carry people along. According to Jay Nussbaum[82], "Start small, scale fast and deliver value."

A key consideration is managing of the "winners" and "losers". As Melody[83] has pointed out, wherever there are winners, there are likely to be losers also. The implementation of ICT projects is not different; there will be winners and losers. For the success of ICT projects, specific steps must be taken to address this challenge. Sound policies and implementation approaches must be developed to increase the possibilities of benefit while minimizing the risks.

6.2   Policy Recommendations

Good governance is the judicious and effective exercise of power for the sole purpose of improving the quality of life of the people. Successful governance is influenced by several factors, which include socioeconomic and political environment, quality of leadership, character and form of government, an enlightened and engaged civil society, and government's administrative capacity. ICTs provide enormous opportunities for improving these factors, thus creating good governance. However, ICTs as tools have two sides, and as such also present some key challenges and risks. Africa faces two risks: the risk of being further left behind by the rest of the world despite the promises of leapfrogging, and the risk that ICTs in governance could amplify the division in African societies.

To ensure that African societies maximize the benefits of the ICT revolution for improved governance while minimizing the risks, we recommend actions in the following areas: vision and strategic agenda, democratizing access, building the infrastructure, capacity and institution building, demonstration projects and experimentation, and building the right regulatory and policy environment.

Before seeking ICT solutions to problems of governance, African societies and their leaders must first of all decide to have good governance. Without a commitment by Africans to create well-governed societies, no technology will ever be useful. In a climate in which African leaders continue to usurp power, organize coup d'êtats and violate fundamental human rights with the acquiescence of the populace, ICTs will only become another tool for oppression. Additionally,

decision-makers at all levels must acquire knowledge about the new telecommunication technologies. We now briefly explore the different areas of intervention.

6.2.1 Vision and Strategic Agenda

The need for and importance of a shared vision in the creation of an information society is widely recognized.[84] A common factor among the countries that have made significant progress in using ICTs for socioeconomic development is that "most have created, and invested in implementing, vision statements.[85]" Singapore, recognized as the world leader in e-government[86], should be a key example for African countries. As the *Economist* pointed out "What is striking about Singapore's approach is that although individual departments are left to innovate in their own way, the big picture is never lost sight of.[87]" Singapore developed and implemented its IT 2000 Masterplan, spawned the SINGAPORE ONE project and has now formulated the ICT21 Masterplan, which aims to transform Singapore into a "global ICT capital with a thriving and prosperous net economy by the year 2010.[88]"

African societies keen on using ICTs to improve governance must build a shared vision backed by a strategic agenda. The shared vision must include among other things, broad principles on the nature of the information society they plan to build, the form of governance, the character of government and the role of the people, with a strategic agenda for ICTs in making the vision a reality.

Preceding each ICT project to improve governance, the "governance goals" to be addressed must be selected. The availability of donor aid or technology must be secondary while the goals to be achieved must be the driving force for implementing ICT projects. In addition, the goals must be specific and measurable. In developing the ICT project, formulating the strategic agenda and selecting the objectives, the following steps could be followed: select and prioritize improvement goals, develop and evaluate alternative ICT solutions, develop the implementation plan, with monitoring, evaluation and feedback.[89]

6.2.2 Democratizing Access

Since governments cannot pick and choose their clients, access for everyone has to become a reality, if ICTs are to impact significantly on governance. Improved governance has to be for everyone. The information society obstacles must be addressed in order to take everyone along to the desired future. New and innovative ideas will have to be developed and implemented to address the digital divide problem. ICTs will have to become affordable and the cost of access will have to be reduced significantly. The language and the content have to reflect local culture and needs. Literacy courses and computer skills- building programs will be crucial. Information brokers will have to be used in conjunction with community access and kiosks to enlarge access to ICTs in African countries. Ideas such as advertisement-supported free personal computers will need to be explored by African governments.

6.2.3 Building the Infrastructure

A key challenge that must be addressed if African countries are to be able to exploit the opportunities provided by ICTs for improved governance is the lack of infrastructure. Telecommunication infrastructures will have to be upgraded and extended to where there are none

right now. With little financial resources, creative solutions can be found. The satellite revolution holds considerable promise for African countries in this regard. Wireless technology such as cellular telephony is already making a difference in some parts of the continent.

6.2.4   Capacity and Institution Building

Human and institutional capacity will have to be built in order to facilitate the use of ICTs for improved governance in Africa. At the institutional level, African countries will need effective institutions that can set and implement policies, provide the regulatory framework, manage the policy environment to encourage competition and facilitate universal access. At the human level, policy makers will have to build their skills and develop an understanding of what it takes to implement ICT projects for improved governance. Likewise, educational curricula from primary schools through to universities must include computer training. Women and the youth, those left out traditionally, must be targeted. The skills of the populace must be built into the use of computers and all the related technical skills such as technology management, data analysis, networking, web-browsing, desktop publishing, web design, and software development.

6.2.5   Demonstration Projects and Experimentation

The challenges facing African countries are enormous while financial resources are dwindling as a result of low economic growth rates, high-indebtedness, low foreign direct investment, and declining official development assistance. Overall, there is a net outflow of resources from Africa. The amount available to build information society infrastructures, provide access, educate the people or invest in health care is far from adequate. Since financial resources are limited, African countries need to seek new ideas and develop creative solutions. African countries must be willing to collaborate with local and multi-national firms to develop and implement demonstration projects, and encourage experimentation in order to devise creative ways to overcome the obstacles of low income, illiteracy, and access.

6.2.6   Building the Right Policy Environment

The role of governments in creating an information society that can seize the opportunities provided by ICTs is crucial. Governments must provide the strategic vision and the leadership. In addition, governments must help create the right regulatory and public policy environment based on stakeholders' participation and consensus building. African governments will also have to ensure that their ICT strategies and actions play a catalytic role.

7.   The Role for The African Development Bank Group

The Bank Group will be focusing on agriculture and rural development, human resources, private sector development, governance, gender equity and environmental preservation to realize its new vision of alleviating poverty in Africa. There is a critical role for the Bank in facilitating development in Africa, and especially in helping to promote good governance. The Bank could play a significant and catalytic role in the adoption of ICTs for improved governance.

First of all, the Bank must realize the importance of information technologies as a key element for any effort to achieve sustainable human development and reduce the incidence of poverty in

Africa. In this regard, the Bank Group must ensure that there is an understanding within the institution of what the new ICTs are, how they can be used not only to create wealth and integrate Africa into the world economy but also how ICTs can be used to address such issues as improving governance, building skills and improving the quality of life. Only such an understanding will allow the Bank Group to match the recognition of importance of ICTs with commitment, funding and practical programs. Discovery and learning workshops on ICTs for the Bank's management team will be particularly useful in creating this understanding. All this translates into the need for a clearly articulated Bank Group policy on ICTs for development.

The Bank Group could play a significant role in financing infrastructure development for the information age; help create the right policy environment, including regulatory, legal and investment; policy research, building awareness and advocacy; and fund innovative pilot programs. We now examine these ideas briefly below.

7.1 Infrastructure Finance

Africa needs to build its infrastructures, especially in the telecommunications and energy sectors. The task ahead will require an enormous amount of resources, given the situation in the continent. The Bank Group could be a key source of financing. It is quite clear that the Bank do not have unlimited resources and will not be able to meet all the needs of all African countries. This calls for selectivity and prioritization. The impact of ICTs on socio-economic development and competitiveness in the new economy makes building infrastructure for ICTs an area that the Bank should consider putting on top of its priority list. The Bank should increase significantly its funding for ICT infrastructure projects. Additionally, the Bank could also play a catalytic role in bringing others to invest in ICT infrastructures in Africa. This will require building strategic alliances with private sector firms to help increase foreign participation in building ICT infrastructures in Africa.

7.2 Regulatory and Policy Environment

Africa must create the right regulatory and policy environment. The Bank Group can play a significant role through providing policy advice to African nations. Many African countries lack the institutional and human capacity to formulate policies, design and implement tax and investment codes, and regulate the ICT marketplace. African countries will require support to build the right institutions that can regulate and enhance competition in the ICT marketplace in a way that promotes development and the realization of shared national visions.

7.3 Policy Research, Awareness Building and Advocacy

Knowledge has now emerged as the crucial link for development. In an era of dwindling resources, African countries need to begin to strategically utilize knowledge as a tool for development. The Bank Group can play a significant role in this respect by truly becoming an information and knowledge center for Africa's development. The Bank can help sponsor policy studies, undertake evaluative research to uncover lessons learnt from ICT projects, and collect and analyze information that is essential for policy making. The research should aim to generate new ideas and new ways to make a difference.

African policy makers need to acquire sufficient knowledge about ICTs, and how to use the new technologies to improve governance. The Bank can help disseminate information to build

awareness and showcase best practices, organize learning workshops and policy dialogues for decision makers, and undertake advocacy on using ICTs in development. These activities will necessitate the Bank strengthening its research capabilities and its African Development Institute. Additionally, the Bank will have to strengthen its cooperation with research and policy centers in Africa, help define their agenda, and seek ways to make their outputs useful to decision-makers.

7.4   Innovative Pilot Projects

ICTs are new tools within the African environment and have not really penetrated the society, as they should. If Africa is to take advantage of the opportunities to improve governance or address the other challenges of development, creative solutions must be found. The Bank could design learning projects that should serve as a "laboratory of ideas" that African countries can learn from to help overcome information society obstacles.

In recent years, UNDP and the World Bank have become active in seeking ways to support the use of ICTs for development. UNDP[90] have projects such as Info21, Sustainable Development Networking Program, African Internet Initiative, IT for Development, Small Islands Developing States Network and Asia-Pacific Development Information Program while the World Bank[91] is implementing programs such as InfoDev and TechNet in addition to its online discussion groups on knowledge for development. The African Development Bank can begin to design tailor-made programs for the African environment on its own and/or in partnership with others. The focus should be on learning, sharing experiences, facilitating access, and developing ICT applications for governance.

7.5   Promoting Good Governance

ICTs are only tools and, as noted earlier, and cannot on their own bring about good governance. Thus, emphasis must be placed on the human link to good governance both by African societies and the African Development Bank. The African Development Bank should help design and fund programs to promote good governance in Africa, disseminate information and undertake advocacy.

The Bank should also help design and implement programs that will help reduce graft and encourage transparency. ICT applications such as web procurement systems that can help reduce corruption through openness will be particularly useful. The Bank can also enhance dialogue among communities of interest by helping to strengthen non-governmental organizations. Additionally, programs can be designed through the African Development Institute to help strengthen democratic institutions such as parliaments, and courts. Networking parliaments with the public to enhance citizen participation in the democratic process will have a significant impact. Building strategic alliances with African institutions and NGOs for voter and civic education will go along way. In all these areas, the Bank can employ ICTs to help reduce costs and save money.

All of the suggestions above, taken together, provide the ingredients for developing a policy perspective and strategic framework on ICTs for the future interventions of the African Development Bank Group in this crucial forward-looking sector.

Notes and References

1 World Bank, *Adjustment in Africa: Reforms, Results and the Road Ahead* (Washington, DC, The World Bank, 1994), page 21.

2 UNDP, *Human Development Report* (New York, United Nations Development Programme, 1990).

3 Martin Meredith, *The First Dance of Freedom: Black Africa in the Post War Era* (London, Abacus, 1985).

4 Tunde Obadina, "Africa's Crisis of Governance," (Africa Economic Analysis, 2000), http://www.afbis.com/analysis/crisis.htm

5 Ibid, page 1.

6 UNECA, *Progress in Good Governance since the Social Summit* (Addis Ababa, United Nations Economic Commission for Africa), www.un.org/Depts/eca/summit/govkenya.htm

7 Ibid, page 1.

8 Harris Mule, "Challenges to African Governance and Civil Society," *Africa Notes,* May 2000, page 8.

9 Bhavya Lal, Gary Gaumer and Salomao Manhica, "Information and Communication Technologies for Improved Governance in Africa", E/ECA/ADF/99/6, Theme paper for ADF September 1999 (Addis Ababa, United Nations Economic Commission for Africa).

10 African Development Bank, *African Development Report 1999* (Abidjan, African Development Bank, 1999), page 3.

11 Ibid, page 3.

12 Op. cit, reference 10, page 85.

13 The World Bank, *Can Africa Claim the 21st Century,*" (Washington, D.C. , The World Bank, 2000), page 9.

14 Ibid, page 9.

15 P. Anyang' Nyong'o, "Institutionalization of Democratic Governance in Sub-Saharan Africa," *ECDPM Working Paper No. 36* (Maastricht, ECDPM, 1997), http://www.oneworld.net/ecdpm/pubs/w36_gb.htm

16 UNDP, *Human Development Report*, (London, Oxford University Press, 1996).

17 UNDP, *Overcoming Human Poverty*, (New York, United Nations Development Programme, 2000).

18 Abdalla Hamdok and Henock Kifle, "Governance, Economic Reform and Sustainable Growth: The Policy Challenge for International Development Organisations," A paper presented at Emerging Africa, First International Forum on African Perspectives Organized by the African Development Bank and OECD Development Center, 3-4 February 2000, page 7.

19 Op cit, reference 13, page 11.

20 Anje Kruiter, "Good Governance for Africa: Whose Governance?, (Maastricht, ECDPM, 1996, http://www.oneworld.org/ecdpm/pubs/govahk.htm)

21 Op cit, reference 4, page 3.

22 Op cit, reference 9.

23 Op cit, reference 9, page 2.

24 Samuel Decalo, "The Future of Participatory Democracy in Africa," *Futures,* Volume 26, Number 9 (London, Butterworth-Heinemann, 1994).

25 Robin Mansell, "Capacity Building, ICT Strategies, and the Science and Technology Perspective," African Development Review, Volume 10, Number 1, (Abidjan, African Development Bank, June 1998).

26 Jean-Francois Rischard, "Forces Reshaping the World Economy," in National Research Council and The World Bank, *Marshaling Technology for Development: Proceedings of a Symposium* (Washington Dc, National Academy Press, 1995).

27 Ibid, page 10.

28 Hans d'Orville, "Knowledge and Information: New Levers for Development and Prosperity," *Choices-The Human Development magazine* (New York, United Nations Development Program, June 200).

29 Economist, "A Survey of Government and the Internet," (London, The Economist, June 24, 2000).

30 Ibid, page 4

31 See Richard Heeks in Bhavya Lal, Gary Gaumer and Salomao Manhica , Op cit, reference 9, page 3.

32 Robin Mansell and Uta Wehn (editors), *Knowledge Societies: Information Technology for Sustainable Development* (London, Oxford University Press, 1998), page 77.

33 Op cit, reference 9

34 Joe Coates, "The Deadening Power of Dilemmas," *Futures,* Volume 26, Number 10 (London, Butterworth-Heinemann, 1994).

35 Sam Pitroda, "Democracy and the Village Telephone," *Harvard Business Review*, December 1993.

36 Op cit, reference 27.

37 Op Cit, reference 9.

38 Op Cit, reference 9.

39 Shanyisa Anota Khasiani, "Enhancing Women's Participation in Governance: The Case of Kakamega and Mukueni Districts, Kenya," Chapter 8 in IDRC, *Gender and the Information Revolution in Africa* (Ottawa, International Development Research Center, http://www.idrc.ca/books/focus/903/11-chp08.htm).

40 Op Cit, reference 29.

41 Aida Opoku-Mensah, "Democratizing Access to the Information Society" *African Development Forum 1999* (Addis Ababa, United Nations Economic Commission for Africa, 1999).

42 Op cit, reference 29.

43 John Onunga, Kenya – Bursting Corruption Using the Internet, http://www.balancingact-africa.com/balancing-act29.html

44 Op Cit, reference 13, page 2.

45 Op Cit, reference 13, page 2.

46 Op Cit, reference 13, page 4.

47 T. W. Oshikoya and M. Nureldin Hussain, "Information Technology and the Challenge of Economic Development in Africa," *African Development Review*, Volume 10, Number 1 (Abidjan, African Development Bank, 1998).

48 Ibid, page 107.

49 Sherif Kamel, "Decision Support Systems and Strategic Public Sector Decision Making in Egypt," 1998 http://www.infozone.telluride.co.us/InfoZone.html

50 Op. cit, reference 47.

51 Op cit, reference 29, page 15.

52 Op cit, reference 29 page 11.

53 Op Cit, reference 29, page 11.

54 Op Cit, reference 29, page 3.

55 Georgia Scott, "Peru's Government Goes High Tech," *Choices*, Volume 9, Number 2 (New York, United Nations Development Programme).

56 Op Cit, reference 32, page 77.

57 Clement Dzidonu, Tony Rodrigues and Rogers Okot-Uma, "The Emerging Messaging and Networking Technologies: An analysis of their Potential Development Impact in Africa," *Africa Development Review*, Volume 10, Number 1 (Abidjan, African Development Bank).

58 World Bank, *Knowledge for Development* (Washington, D.C., The World Bank, 1998/99).

59 African Development Bank, *African Development Report 1998* (Abidjan, African Development Bank, 1998) page 152.

60 Op cit, reference 33, page 9.

61 Op cit, reference 33, page 10.

62 See Ghana's new national information plan at http://www.nici.org.gh

63 World Health Organization, *The World Health Report 1999: Making A Difference* (Geneva, World Health Organization, 1999).

64 Op cit, reference 32, page 85.

65 United Nations*, Report of the High-level Panel on Information and Communication Technology, New York, April 17-20 , 2000* (New York, United Nations), page 21.

66 See http://www.healthnet.org or Op Cit, reference 41, page 23.

67 See http://www.sdnp.undp.org

68 Op cit, reference 41, page 8

69 Op cit, reference 9, page 7

70 See http://www.unep.org

71 Op Cit, reference 9, page 18.

72 Information in the Box is adapted from Christophe Brun, "Senegal—The Three Cs-Costs, Competition and Content," *News Update 28*. Source: http://www.balancingact-africa.com/balancing-act28.html

73 Op Cit, reference 29, page 4.

74 Op Cit, reference 29, page 4.

75 Op Cit, reference 32, page 8

76 Figures calculated from ITU STARS data set. Source: Op Cit, reference 25, page 24

77 Op Cit, reference 32, page 25.

78 See Egyptian Communication Minister, Mr. Ahmed Nazif, quoted in "Egypt Slashes ISP Line Costs", *News Update 28,* Source: http://www.balancingact-africa.com/balancing-act28.html

79 Op Cit, reference 9, page 19

80 Op Cit, reference 29, page 10-11

81 According to Todd Ramsey, IBM's worldwide head for government services, source: Op cit, reference 29, page 9.

82 Op Cit, reference 29, page 9

83 William H. Melody, "Toward A Framework for Designing Information Society Policies*," CTI Working Paper No. 5*, (Denmark, Center for Tele-Information, Technical University of Denmark), page 4.

84 John Gilbert, David Nostbakken and Shahid Akhtar, "Does the Highway Goes South?" *Intermedia*, Volume 22, Number 5, October-November 1994, pages 9-11.

85 Minister of Information Technology's IT Advisory Group, *The Knowledge Economy*, (Auckland, The Government of New Zealand, August 1999), page 8.

86 In an international survey of e-governments initiative worldwide, the US General Services Administration concluded that "Singapore's eCitizen t center is the most developed example of integrated service delivery in the world." Source: *The Economist*, Op Cit, reference 29, page 15.

87 Op Cit, reference 29, page 15.

88 Op Cit, reference 29, page 15.

89 Op Cit, reference 9, pages 25-29.

90 For information on UNDP initiatives visit: http://www.sdnp.undp.org   http://www.undp.org/Info21 http://www.knowledgebroker.org

91 For World Bank initiatives visit: http://www.worldbank.org