

# **Information Technology Age in Africa: A Case of Land Commission in Ghana**

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## **Keywords**

Information technology, Africa, Economy, Capital creation, Computers, Data, Sabotage, Culture, Lands commission

## **Abstract**

*This article looks into the advancement of information technology in Africa. The objective is to determine the awareness, use and impact of information technology in Africa. Lands commission of Ghana was isolated in this case to evaluate its adaptability of information technology in its departments and offices. The article also examines the pace of Africa adaptability to IT and the impact on the economy. It also justifies the need to switch from manual handling and storage of information to current and modern technology. It identifies impedance factors to the growth of IT and gives relevant recommendation on how this can be tackled.*

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## **Introduction**

Information technology (IT) is the storage, transferring and manipulation of information using computers. Leeming et al (2000) stated that information is organised facts and figures. Unlike data, information has a context, which makes it understandable. According to Cambridge international dictionary of English (1996), technology is the practical (especially industrial) use of scientific discoveries. Heathcote (2000) stated that computers are transforming the way in which we learn, communicate,

do business, enjoy our leisure and live our everyday lives. In every career one pursues, knowledge of computer skills is essential and beneficial. While the author's statement is perfectly true, there has to be a question of what would happen if computer systems fail in future, since the level of dependency on computers is very high especially in the western world.

Africa is coming of age in information technology. This shouldn't be a surprise under normal circumstance, because a continent rich in natural resources, diverse cultures and favourable climate should be capable of developing its IT base to transform and enhance its infrastructures and economies.

The paradox of Africa has to be overturned to reflect the originality of the rich continent. This would take the commitment of Africans themselves, to reinstall the good image of the land. Africa was seen as the land of opportunity by its forefathers and its colonial masters, due to its rich natural resources. Unfortunately the image of Africa in this 21<sup>st</sup> century has turn from bad to worst. It is seen as the land of poverty, diseases and chaos. African countries working tirelessly to improve their economies are overshadowed, because Africa is somehow seen as one country rather than one continent.

One smart way for Africa to overturn its damaged image would be to develop its IT base. Computer storage of useful information is very crucial to the growth of every economy. This is the starting point of developing strong IT foundation. According to Ghanaweb (2007), information becomes knowledge only if someone knows what to do with it.

This article tries to evaluate and justify the pros and cons of IT on the African economy, isolating Lands Commission of Ghana, which deals with the documentation of all lands and properties in Ghana. This organisation has been chosen because, apart from governmental conflicts, lands and building properties is another area that initiates conflict amongst the people in the African region and even other parts of the world. In the conclusion, the article summaries the relevant points and gives recommendations on how Africa can overcome its IT phobia.

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### **Computer Solutions**

Computers have come a long way to replace manual systems and have introduced automation in systems and human lives. In today's world, computers are major players in countries industrialisation and nation building. For instance in the agricultural industry, computers facilitates the study and growth of crops. Agricultural boosters such as fertilizers and genetically modified crops can be synthesised at the laboratory using computers. Before the introduction of computers, there were general fears that it would displace people from employment, but this has turned out to be the opposite since research and statistics has shown and recorded that computers have in fact created more employment than displacing employment.

Most places in Africa unfortunately do not have the right computer systems to process their agricultural goods. Goods are therefore exported in an unfinished state to be finished in the Western world and then returned to Africa. This cycle has created a system of dependency of most African countries on the Western world leading to price dictatorship of foodstuff and agricultural products by the West. Ghana produces cocoa, gold, diamond, timber, tea and coffee every year but export majority of these products abroad (in their embryonic state) due to inadequate technological processing prowess. One could argue that this brings some foreign exchange to the country, but the effect is felt on pricing. Prices would have been cheaper and the population more fed if these goods were fully processed and finished in Ghana. The mining industry has also seen similar set backs due to lack of technology. Gold and diamond mined in Ghana and other African states such as South Africa are exported to the West to be finished and sold back more expensive, as jewellery, to the production land.

### **TECHNOLOGY INDICATORS FOR GHANA**

<b>Technology Indicators for Ghana</b>	<b>1995</b>	<b>1998</b>	<b>2001-2</b>
Computers per 100 people	0.12	0.30	-
Telephone lines	63,067	179,594	240,000
Mobile-phone subscribers	6,200	42,343	-
Public telephone booths	30	1,814	-

Satellite dish subscribers	0	15,000	-
Internet host sites	6	253	-
Radios per 100 people	23.1	68.2	-
TVs per 100 people	4.04	35.2	-
Internet subscribers	-	10,000	400,000

**Source: *Ghanaweb.com***

Michael A. Nwachuku (2006) wrote that electronic digital computers made its first appearance in Nigeria in 1963, in connection with the analysis of the 1962/63 national census data. The author further stated that in the 10 years between 1963 and 1973, the total computer population in the country stood at 20-25, with 6 or so of these being associated with the multinational companies. By 1977 the total number of installations had grown to around 70. According to the author, it was by this time that many universities, government departments, and Para state organizations, including the West African Examinations Council (WAEC), the Joint Admissions and Matriculation Board (JAMB), the National Electric Power Authority (NEPA), the Nigerian Ports Authority (NPA), and the Federal Office of Statistics, as well as many banks and commercial firms, began to show interest in computers.

The author further argues that up to 1977, there were only three computer vendors in Nigeria. They were JCL, IBM, and NCR, and all three were the local subsidiaries of overseas computer manufacturers dealing almost entirely with mainframes and minicomputers. In 1977, the government promulgated the indigenization decree, which set apart some categories of industrial activity exclusively for participation by Nigerian nationals, while stipulating a minimum of Nigerian interest in others. One of the three original vendors, IBM, did not want to comply with the decree, choosing instead to pull out of the country.

Teferi Kebede (1994) stated that the introduction of IBM products in Ethiopia dates back to 1962. The introduction of Hewlett-Packard (HP) computers in Ethiopia is a recent phenomenon, starting from 1980. However, SERIC has shown a rapid growth

in the number of computer installations in a short period as compared with the other suppliers. HP systems are now widespread, and include those in international and regional organizations located in Addis Ababa. The HP 3000 series used to be very common but now personal computers (PCs) have been installed in many organizations. Burroughs introduced its products with desktop calculators and Model 1500 accounting machines in 1968. Its first computer was installed in Ethiopian Airlines.

### **Computers against Manual Storage of Data**

Computers have come to replace manual storage of data. The paper filing system, which is the traditional way of storing data, has almost faded out in many parts of the Western world but still a practice in most African countries in this 21<sup>st</sup> century. The traditional method has many disadvantages. Some of these are; Files can easily be damage by rodents, rains and so on. It is also a very slow and tedious method of recording information, which is highly susceptible to errors. Files can easily be misplaced accidentally and therefore go missing. The privacy of paper filing system lacks confidentiality since they are only stored in a key opening drawer, which can easily be broken. Computers have the extra advantage of password creation and encryption of information to prevent unauthorized access to such information. Computers have improved bank transactions. For instance the practice whereby people queue at bank counters, cashier giving money and recording transactions manually is no longer common especially in the Western world since cash can be withdrawn from cash machines 24 hours outside the banks. Unfortunately some African countries are still yet to experience this technology. The military and the intelligent services uses computer to fly jet unaccompanied to spy danger zones to gather intelligence. This technology again is not common in African states. Since computers have introduce a high level of automation at work and society, Sharon et al (2005) argued that this automation has lead to the loss of interaction between people, with less face-to-face discussions and debates from which ideas might spring.

### **Information Technology and Capital Creation**

According to the English People website (2007), Ghana recorded a significant increase in all mineral productions in 2005 with gold taking over from cocoa as the leading foreign exchange earner for the country. Mineral revenue went up from 798 million U.S. dollars in 2004 to 995.2 million dollars in 2005, contributing about 13 percent of the total collection of Internal Revenue Service in the year under review. Gold production recorded an increase of 63 percent from 1,794, 497 ounces in 2004 to 2,029,218 ounces in 2005 with its export revenue increasing from 731.2 million dollars to 903.9 million dollars.

The Report said bauxite revenue increased from 11.9 million dollars in 2004 to 18.1 million dollars in 2005, while diamond rose from 26 million dollars to 34.7 million dollars. Manganese exports realized 39.1 million dollars in 2005, up from 30.2 million dollars the previous year. The report further confirmed, despite the increase in production and revenues, the mining industry witnessed extremely high input prices particularly for diesel fuel, sodium cyanide and earth moving equipment tyres. According to the report, the high input prices dampened what could have been an impressive year for the global mining industry in general and Ghana in particular.

The argument here is that strong technological base can rectify or prevent some of these set backs. For instance if Ghana manufactures its own earth moving equipment, through advance technological base, it would cut down input prices for production, thereby creating increased capital for the nation. Michael A. Nwachuku (2006) stated that Nigeria imports virtually 100 per cent of all its IT equipment and a diversity of firms exist to supply, service, and maintain the imported equipment. There are however problems associated with poor vendor performance and the high cost of computing equipment. Local manufacturing is now under discussion.

According to Ghanaweb (2007), Ghana has moved from 74th place to 65th place in the 2005 World Economic Forum's (WEF's) Networked Readiness Index. The index measures the propensity for countries to exploit the opportunities offered by information communication technology (ICT). According to the report, Singapore is the world's number one economy in exploiting information and communication technologies (ICT). The United States, which ceded the top billing to Singapore, was ranked fifth this time around. Finland reached the number three position for the second time in a row. South Africa lost the top spot among the 23 African countries covered, to Tunisia. Tunisia which held the 40th position in 2004 has moved up to 31st place. Other African countries in the index include South Africa (34), Mauritius (47), Botswana (50), Morocco (54), Namibia (55), Egypt (57), Gambia (74) and Nigeria (86). The lowest-ranking country overall was Chad.

According to the WEF's Global Information Technology Report, the index is based on three pillars. The first relates to aspects of the environment of a given nation for ICT development, such as the regulatory regime and legal framework for ICT, available infrastructures and other factors; the second deals with actual levels of networked readiness of individuals, businesses and governments; and the third focus is on actual levels of ICT usage by these groups.

The report believes in strong correlation between ICT spending and productivity. It also sees ICT usage as a measure of the present, and ICT readiness a measure of the future. The WEF believes the US's loss in rank has less to do with erosion in performance and more with continuing improvements among its competitors. Information from the Ghanaweb suggest that the fact that two thirds of the report's findings are based on interviews where company directors and other experts have only commented on their own country's performance, significantly weakens the study's accuracy.

### **Economic Impact of Information Technology**

Strength in information technology has a direct impact on economic growth. For instance smooth networking of systems, such as police systems and driver and vehicles licensing authority (DVLA) help facilitate quick crosschecking of information by the police even on the road. This prevents crime and encourages a decent and more productive society. Unfortunately this technology is more common in the western world and rare in Africa in this 21<sup>st</sup> century. Networking of banking systems promote smooth and fast transactions, which result in economic growth. In parts of Africa now, people do not necessarily have to travel to a specific banking branch to carry out transactions, because it can equally be done in each local branch. With information technology, corresponding sectors of the economy can be linked to each other to speed up transactions. Operations such as paying bills and wages by direct debit, using a debit or credit card to purchase goods items at supermarkets and departmental stores, or even over the phone, 24-hour cash machines help facilitate smooth societal system and economic growth. These also help the growth of businesses and quicker establishment of investments.

### **Information Technology and Sabotage**

The concern of the security of information technology arises when people uses the platform of information technology to manipulate or even sabotage the transaction process and the smooth running of an economy. Alastair et al (2000) stated that for information to be useful, it must not only be of good quality, but must also be available at the right place. Perhaps in addition to the author's statement, it can be said that information also needs to be in the right hands to guarantee security. Leeming et al (2000) stated that security of data means keeping data safe from physical loss. The loss of data could be intentional, for instance theft by a competitor (industrial espionage), unauthorized access thus hacking, and destruction by viruses or terrorism. Computer crime has become pretty known in the western world. People use the computer for all sorts of selfish gains including fraudulent use of credit cards. Once the momentum of Africa's information communication technology picks up, they must learn how to deal with computer crime to input security and trust in their transaction systems. Financial institutions such as banks must incorporate the highest level of security in their operations including recruitment, training and incentives to prevent fraud and to instill confidence in their customers. This is very crucial especially in many parts of Africa, where people still keep huge monies at home due to lack of confidence in the banks. Insiders (organisation own employees), are the number one breach of security, therefore

hiring and recruitment processes must be scrutinized properly. For instance, the checking of employees backgrounds including police reports where necessary. Loyalty must be built in employees to minimise dishonesty and sabotage.

### **African Perspective of Information Technology**

According to books.google website (2007), to be respected as a member of the community, and, even more so, as an authoritative figure, technologist must abide by the formal and informal rules of the community and not use common resources (knowledge) or delegated resources (institutional positions) for their own exclusive benefits, beyond the sheer good of advancing technological skills by learning from the network. Personal advantage is not shunned unless it is to the detriment of other members of the community. Bringing this argument to the African perspective, it can be said that large percentage of the African people still regards computers and information technology as a 'foreign thing' and are more used to their traditional way of storing and processing data. The ethics of technology in the African society is such that both formal and informal rules are better obeyed compared to the ethics of technology in the Western world. For instance in the Western world the use of the internet can be abused for purposes such as stealing from banks, selling sex and so on. But these abuses via the Internet are not very common practices in many parts of Africa. According to Kotler et al (2005), culture is the set of basic values, perceptions, wants and behaviours learned by a member of society from family and other important institutions. Cultural environment are institutions and other forces that affect society's basic values, perceptions, preferences, and behaviours. Cultural factors also influence greatly the ethics of technology in a country. For instance close circuit television (CCTV) are not installed in most sensitive areas in Ghana such as supermarkets and banks, possibly because, the Ghanaian culture is neighbour watch oriented, such that instant vigilante justice is exercised in most cases of stealing, dishonesty and other abuses of societal freedom. This is not in support of unlawful instance justice but to justify the culture of trust and right doings of the society.

### **Lands Commission of Ghana's Profile**

The lands commission is a government institution in Ghana that has been set up to issue documentation of lands and building properties to the public. Since the dispute of land and building property can lead to a bigger conflict, it is therefore crucial that this institution is equipped with the state of the art technology that prevent forgery of documents, sabotage, and deliberate delays in processing of documents. Interviews carried out at the Lands commission reviewed that this institution is poorly equipped

with modern technology. In fact the old paper filing system of storing and processing of information is still the common practice in this very sensitive organisation.

Few computers can be seen at special offices but does not have the appropriate software installed to process sensitive data accurately. According to an unconfirmed report from one of the employees, the computers are mainly used to store employee details and not public documents and information. Since the technology at this institution is not solid, Bribery is very common due to the publics' desperation and frustration to get their documents processed in time. This has resulted in a level of disorderliness at the institution, because once an employee accepts a bribe from a member of the public, in exchange for helping to speed up the documentation process, the orderly arrangement of files at departments can be turned upside down in the quest of meeting targets with the victim who gave the bribe. This is the most common way in which, documents are misplaced and missing at the institution. The long-term cost incurred by the chaotic operation of this institution is much more expensive than the cost of installing and implementing strong IT based systems.

### **Conclusion and Recommendations**

In conclusion, information technology can be said to be a driving force in a nations' development and economic growth. Africa needs to do more research in information communication technology and to explore all the advantages it offers. The sustainability of most economies depends on its agricultural activities. In this respect, Africa needs to develop its agricultural base making use of modern technology to boost productivity. The ability of a nation to feed itself is crucial to the peace, stability and economic growth of the country. As the saying goes 'a hungry man is an angry man'. The documentation of lands and building properties should be fully computerized to prevent sabotages, delays in processing times, errors and favouritisms.

According to research and statistics, land and property disputes had marked the beginning of some conflicts in the African sub region. Africa needs to adopt the full concept of information communication technology, explore its full length and develop innovative thinking and attitude around information technology. Africa must always think of the longer-term in their developmental projects and stop depending on temporal structures. Although long-term infrastructures can be more expensive and may not be quick to implement, once done it lasts longer and therefore is paradoxically cheaper. Sometimes government under pressure is forced to implement temporal structures, but this can be overcome by education and a minor sacrifice of the nation to 'hold their breath' to get the right thing done from start. African nationals who have had the privilege (both current and past) to work in the Western world in a highly technological organisations, should transfer some of these knowledge and adapted techniques to their home land to help with the developmental efforts of their country. Also, Africans needs to develop a contributing spirit and attitude, both financially and physically to help sponsor projects in their own country and stop depending on government for all their needs. This would help ease pressures off governments and to focus on longer-term strategies for the smooth development and building of the nation.

Finally, if the Lands commission in Ghana wants to extract itself from the annals of 'pre-historic' lands distribution, it must embrace change. The real change must come in the way they practice lands control and distribution and the way forward is information technology. The sad thing is their failure to 'strike while the iron is hot' and the great thing is that the weaponry is available to their disposal, use it or loose it.

## **References**

- Alastair de Watteville and Lester Gilbert (2000); *Advanced Information and Communication Technology*. The Bath Press Ltd, Bath
- Cambridge International Dictionary Of English (1996); Low Price edition. Cambridge University Press, UK
- Heathcote P. M, (2000); 'A S' Level ICT. W M Print Ltd, Walsall, West Midlands
- Kotler P and Armstrong G, (2005); *Principles Of Marketing*. Pearson Prentice Hall, New Jersey
- Leeming A and Mott J (2000); *Information and Communication Technology For Advance Level*. The Bath Press Ltd, Bath
- Michael A. Nwachuku, *Development of information technology in Nigeria*. www.unu.edu, 1994
- Sharon Y and Lawson J (2005); *Applied ICT*. CPI Bath Press, UK
- Teferi Kebede (1994), *Information Technology In Ethiopia*. www.unu.edu 1994
- www.books.google.com, 27/03/2007
- www.english.people.com
- www.ghanaweb.com, 17/02/2007
- www.unu.edu/unupress/unupbooks/uu19ie/uu19ie0e.htm#2.%20growth%20of%20information%20technology, 11/04/2007