STRATEGIC CONSIDERATIONS FOR A COMPREHENSIVE, MEANINGFUL AND EFFECTIVE NATIONAL INFORMATION AND COMMUNICATION TECHNOLOGY POLICY (ICT)

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POLICY CONTEXT:

Any consideration for a meaningful ICT policy should, in essence, begin by appreciating that:

- Significant changes in global politics, particularly the end of cold war as well as major developments in science and technology that have taken place in the last few years, have transformed the world that we all know, not too long ago, beyond recognition.

- This change and transformation process continues to happen with the "speed of light"

- As a result, even the nature of change itself has changed!

At the core of this change process are the combined forces of the five global drivers that direct and accelerate this process:

- Globalisation of production, distribution and exchange process, taking full advantages of economies of scale and those of scope;

- Liberalisation process which among other factors, at the speed of light, is currently transforming national borders into markets; (Nokia)

- Digitalisation process that continues to render time, space and distance completely meaningless, in the world of business and public governance. (ICT issues).

- Humanisation process that is sharply focussed in extending the frontiers of human freedom and capacity to act, through the universal value of democracy, human rights, rules of law and good governance. (Issues of ethics, gender equality, empowerment, involvement of civil society, stakeholder interests etc)

- Environmentisation of the world, through renewed concern and care of the environment.

THE EVOLVING NEW GLOBAL ORDER.

The dynamic interplay between and among these five drivers of the global change and transformation process, has given rise to a phenomenon which all of us simplistically call "Globalisation".

The dynamic interplay of there force has produced a global environment of public and private sector governance that is characterised by extreme uncertainties; profound discontinuities, and; perhaps the most intensive competition for resources and markets, ever noticed in the recent human history.

The dynamic interplay between and among these five global forces therefore poses severe challenges to individuals, organisations and even governments and countries, particularly Third World. However, it also opens up vast opportunities for growth and development in a range of areas, even in Third World countries.

It has transformed governance philosophies and management strategies in both, public and private sectors. Our presence here today, as stakeholders, amply illustrates this changing reality.

Old power structures of public and private sector governance are collapsing and, instead, new ones are emerging. Power no longer comes from above! New Rules of global engagement are also emerging which tend to reward handsomely those who are able to embrace this change and take advantage of the opportunities that are opening up in the evolving New Global Order and punish severely those who refuse or ignore this change process and its Rules. Third World countries like Tanzania have a huge advantage in this regard, to the extent that they can lip-frog this process, as amply demonstrated in the telecommunication industry here.

THE STRATEGIC ROLE OF ICT

While it is absolutely correct that falling transportation costs were critical to the 19th Century Globalisation process, growing efficiencies in Information Technologies and plunging Communication costs are, currently, at the centre of the 21st century Globalisation process.

The possession of information or KNOWLEDGE resources is increasingly becoming critical to worth generation and growth of both individual enterprises and global economies. Connectivity, integration and real time, have already become key requirements for cost containment, higher productivity, global competitiveness as well as efficient and effective private and public service delivery.

In that regard and as we have already heard, the case for integrating fully into the Global Information Society or Knowledge Economy, through expansion of access to, and use of, Information and Communication Technology (ICT) therefore, does not need any protracted debate.

Besides, it is already clear that, there are substantial rewards to those who are "connected" or "wired" and severe punishment to those who are not. The Rules are simple: for an individual to survive and grow in the new Global Information Society, you need, out of essence to attain: -

- Proficiency in education- it does not tolerate illiteracy or semi-educated individuals.
- Proficiency in English Language
- And be "wired" or "connected". Gone are the days of a stand alone PC!

THE NEXT WAVE

We must also recognise that, the challenges as well as opportunities that are located within the fast evolving developments in Information and Communication Technology will be increasing rather than diminishing as we get deeper into the 21st Century.

Stan Davis (author of "Lessons form the Future") identifies three waves of developments that would introduce new and bigger challenges and as well as vast opportunities for ICT driven or Knowledge-based Economy in the next two decades or so.

Arising from the fact that, for every chip that is in a computer there are nine or ten others out there: from toasters, door knobs, cellular phones, cars, aeroplanes etc. It is envisaged that, increasingly computer chips and other microprocessors located elsewhere, will increasingly connect, interact and communicate with each other as well as with the human race, to introduce, consolidate and spread the existence of **"smart systems."** Developments in infrared technology, telecommunications infrastructure, radio frequencies, magnetic fields etc. would expand the existence of these smart systems, much sooner than later.

On the other hand, developments in biotechnology and genetic engineering or geno-technology or genomics (essentially human operating system), are about to move from technology to business, from research and development to customised mass production. For instance, the unresolved ethical issues notwithstanding, venture capitalists are already pouring a lot of resources into genomics, since the recording of a major breakthrough in the understanding of the human genome, in June 2000.

It is envisaged that, not too long from now there will be a three way dynamic interface: connections and communications between elements of smart systems i.e. inorganic and organic chip that would arise from further and accelerated developments in ICT as well as biotechnology and genotechnology.

Davis asserts that, such an interaction would further deepen the future structure of the global economy whereby; elements of information technology and biotechnology in optical, quantum, molecular or DNA computing, in inorganic silicon microprocessors as well as organic biochips will all be code based and they will all work from the bottom up.

The totality of all these developments, therefore, requires strategic considerations for a comprehensive, meaningful and effective ICT policy to be:

- Equally comprehensive;
- Holistic;
- Visionary;
- Underpinned with a deep sense of Mission;
- With a clear road map;
- Clearly visible and measurable milestones;
- Effective structures that would ensure its sustainability;
- Strong leadership and drivers at all levels.

It has to be deeply informed by developments in other disciplines that relate or impact on developments in ICT. It has to be futuristic in its approach and content while it remains realistic and practical.

This by itself brings on more challenges to developing countries like Tanzania.

POLICY IMPLICATIONS ON TANZANIA.

For business and government leaders, the implications are clear. The report of the ECOSOC Working Group of the Commission of Science and Technology for development (New York: 28 December 1996 pp 4) indicated: "The evidence about economic and social impact (of Information and Communication Technologies) is often conflicting and the benefits for developing countries and countries in transition seem to be more potential than real. **However, the balance of evidence suggests that although the financial costs of joining the global information society are likely to be huge, the economic and social costs of not joining are likely to be greater". Simply put, there is no place to hide, if individuals, organisations and even countries have to survive, grow and develop in the New World that we are living to-day!**

Put in the manner it has been put above, the next question would, therefore, be: what are the implications that a country like Tanzania should make in this regard?

Increasingly, more and more developing countries are making their decisions to embrace the process, albeit, in a more ad hoc and piece meal manner. They are restructuring their economies and changing public policies to accommodate the Information and Communication Revolutions.

The process is farthest along Asia, where the experience of India, Hong Kong, Korea, Malaysia, Singapore, Taiwan and Thailand present excellent case studies. Other countries in Asia, following these examples, are working hard to become suppliers of IT products, software and services.

In Malaysia, for example, the government has established National Information Technology Council to promote development of information technology nationwide. India has developed a flourishing software industry, centred in Bangalore in Southern India, taking full advantage of its low cost but highly skilled workforce. That by itself shows that it is quite

possible to effectively embrace ICT even within the context of multiplicity of challenges that seem to characterise Third World countries. It fact it has already been proven that it is one of the best and more sustainable solutions to our current problems of extreme underdevelopment.

These information infrastructures are essential for achieving sustainable economic development in the networked world. Information technology holds the promise of generating the economic efficiencies required to attract both local and foreign investments that are the engine of growth around the world.

At the same time, information technology can also provide the means to reach, mobilise and empower citizens and to reduce income as well as information disparities through adoption of an agenda that will integrate rural and urban poor communities into economic life.

PUBLIC POLICY CRITICAL CHOICES

As Ernest J. Wilson III of CSIS Africa Notes (No 185, June 1996, pp9) points out:
"The most important challenges faced by Africa in the information sphere are political, institutional and regulatory rather than financial or technical. African and foreign businesses are waiting to invest. Consumers are waiting to pay to communicate with their families, their neighbours, their fellow employees, and their suppliers or customers. They are all being held back by lack of clear and strong leadership on ICT issues as well as hostile and outmoded political and regulatory constraints.

For citizens of developing countries like Tanzania, to realize the benefits of the Information Society in education, health care, commerce, and the other areas discussed above government officials must adopt policies that promote rather that stifle technology development and international trade and investment.

The technologies, products and services that permit our effective participation in the Global Information Society already exist. But until trade barriers are eliminated, monopolies give way to competition, and intellectual property protections is assured, the private sector, will prefer to concentrate their efforts and to direct their investments to areas of the world where these conditions exists.

In that regard, several issues need to be understood and addressed to accelerate the progress toward an Information Society.

1. **PRIVATE SECTOR LEADERSHIP**

    The private sector and the competitive marketplace are the driving forces for the implementation of the Information Society. A primary responsibility of government in the networked world is to establish and maintain a policy environment that empowers its people and promotes competition in the marketplace.

    Tanzania is moving in the direction of increased competition. The leaders of the Private sector must continue to push for accelerated deregulation of the marketplace, which will bring prices down and make products and services more affordable, as it is currently happening in the mobile phones industry.

    Such policies should increasingly aimed at encouraging and empowering local participants, while at the same time promote the competition and attract the investment required to build the information infrastructures required for development in today's networked world. For instance, cellular phones connection charges in Tanzania have already gone down considerably, largely as a result of competition that was introduced some few years ago.

    The key to development of the Global Information Society is open markets that enable real competition, that are receptive to foreign investment and to worldwide suppliers of goods, services and content, and that stimulates innovation and promotes economic development. Government Policies should contribute to eliminate the regulatory, trade, investment, and other barriers that stifle competition.

2. **INTEROPERABILITY**

    The Global Information Society will be impossible without interoperability. Interoperability allows diverse systems made by different vendors to communicate with each other, thereby making communications easier for users. User interest in having interoperability is already driving the ICT industry to respond aggressively to these needs. Market forces will cause interoperability to occur more rapidly than would the standards process or governmental intervention.

    However, standards, where appropriate, also play a useful role in furthering the goal of interoperability. The industry-led, voluntary standards development process is the best way to achieve the

interoperability required for the Information Society. Key elements of this process include open interfaces whose technical specifications are open to other manufacturers and service providers, and proprietary rights that enable the licensing of technology on reasonable terms and conditions.

3. PRIVACY AND DATA SECURITY

The global Information Society will not evolve if users are not confident about the privacy of their information and transactions on the networks. It is essential that sensitive, personal and proprietary information be protected and made available only in accordance with the internationally accepted guidelines. Equally important, individuals, companies and other organisation will note take advantage of the global system unless they are assured of the security and integrity of their information and transactions.

Encryption is current the best way to ensure security, particularly when transmitting information over electronic networks. Encryption can provide a number security services, such a data integrity and authentication, in addition to data confidentiality. Many countries, however, -- including the USA – impose restrictions such as export controls or use/usage restrictions that inhibit the use of secure communications. What is needed is a local and international policy that eliminates unnecessary barriers between nations and that promotes broader awareness of the importance of security on networks.

4. INTELLECTUAL PROPERTY PROTECTION

For developing countries, a networked environment will serve not only as the vehicle for delivery of content and service but also as platform that can be utilised to enter into global business, including software development and transborder data processing. Intellectual property protection is prerequisite for networking. Without it, the platform will be built more slowly if at all. Without it, less content will be created, and those who do create it will be reluctant to send it over the network.

Poor intellectual property protection, or an environment that promotes software piracy or result in weak enforcement of intellectual property laws, will seriously impede the ambitions of any country seeking to participate in the Global Information Society.

Unfortunately, Tanzania at the moment lags so far behind in this regard.

5. UNIVERSAL ACCESS

Information and Communication Technology provides the basis or generating and accessing increasingly diverse kinds of information. New applications can play a major role in alleviation poverty, enabling new learning experiences, reducing environmental problems, and encouraging cultural diversity and social inclusion.

At the same time there are fears that inequalities in the distribution of access to these technologies will exacerbate the problem that burden these countries and further widen the gap between the 'haves' and the 'have-nots.' The major concern is that the diffusion of Information and Communication Technologies will benefit only those who already have access to the knowledge and economic resources needed to participate in a global Society.

Universal access must be a fundamental part of policies such as the one that we considering to day. Enabling as many people as possible to use information technology is obviously crucial to the task of educating people and building better physical and administrative infrastructures. But it is also a critical asset in attracting international investment. In addition to seeking political and economic stability, companies look for an educated workforce and an infrastructure that will support business operations. Universal access can help meet these needs.

6. EDUCATION

The most strategic resource that any country can talk about would be its people. An investment in education, particularly in science, maths and English becomes a fundamental prerequisite for Tanzania's entry, survival and growth in the World of ICT. This can be both public and private sector driven, as this new trend has started to emerge at the moment. At the same time, we need to establish Centres of Excellence through meaningful Public/Private Sector Partnerships in the establishment and growth of ICT in Tanzania.

At the same, issues related to:

- Strategic ICT Leadership;
- Stronger Legal and Regulatory framework;
- Capacity building;
- Recognition and development of ICT as a strategic sector;
- Growth of ICT industry; and
- Development of Local content;

Also need more attention, in improving the quality and integrity of current draft policy, much as these issues have been duly recognised in the document.

CONCLUSION

Developments in ICT have for reaching implications for the socio-economic development of Tanzania. However, for this potential to be realised, the government will need to make significant investment of its own public policies that will harness and attract information technologies products and services, provided by innovative and global competitive businesses. The role of the private sector is therefore, quite critical in that regard. The government's budgetary allocations, lending policies of the financial institutions, particularly venture capital and capital market institutions as well as international financial institutions and donor communities must therefore, evolve policies and programmes that effectively respond to the urgent need to establish strong private sector participation in the development of the wider and more strategic ICT requirements in Tanzania. Where appropriate, some special fiscal incentives must be put in place in that regard. Otherwise, Tanzania's ICT industry will largely be dominated by "box pushers" as it is the case at the moment!