The Process of Developing National Information and Communications Infrastructure (NICI) in Africa

September, 1999
Introduction

1. The emergence and convergence of information and communication technologies (ICT) remain at the centre of global social and economic transformations. The ICT sector is a gamut of industries and service activities - Internet service provision, telecommunications equipment and services, information technology (IT) equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services and other related information and communication activities. These technology-based components which used to be accounted as separate activities have converged to characterise all aspects of information society [1]. This has also led to the introduction of the concept of national information infrastructure (NII) and global information infrastructure (GII) defined as the "technologies, organisations, and capabilities that facilitate the production and use of ICTs"[2].

2. In this regard, the Vice President Albert Gore’s National Information Infrastructure (NII) project announced in 1992 and started in 1993 sparked world-wide activities on development and use of ICTs. Most of the funding of Al Gore’s project would come from the private sector while the American Administration was to put in place the necessary mechanisms to enable proper planning and implementation, including creation of the Information Infrastructure Task Force (IITF) which was “to provide leadership in integrating information technology into systems that support government’s operation” [3]. This task force was responsible for articulating and implementing the President’s vision for advanced telecommunications and computing technology, and was “uniquely positioned to help develop the governmental aspects of America’s information infrastructure”. Several committees and working groups were also established by IITF, and participants were drawn from state and local government’s representatives as well as the private sector. Also, a high-level Advisory Council on the National Information Infrastructure has been established by the President to provide advice to the IITF.

3. At almost the same time, in 1993 the Japanese Government created the Telecommunication Council to define a national strategy which was enacted in 1994 and which gave priority to the development of a fibre optic backbone around Japan. The aim was to enable adequate access to the Information highway to all Japanese households by the year 2010.

4. In Europe, the Bangemann report on the Global information Society [4] was adopted by the European Commission in June 1994 and selected 10 projects for immediate financing. 8 months later, in February 1995, the G7 Group of countries held in Brussels, a special ministerial meeting on the Information Highways.

5. As a result, the definition of National Information and Communications Infrastructure (NICI) plans and strategies has become high on the agenda, and African countries, like countries in the developed world, are confronted with the challenge to be responsive and flexible to the convergence of telecommunication, audio-visual and computing technologies. NICI plans and strategies need to reflect overall development priorities, redefine sectoral policies and support the introduction of new regulatory frameworks so as to improve the efficiency, and to mobilise resources, for building national information and communication infrastructure. Attempts are made in this paper to define the NICI development process, to outline the pressing need to build up NICI plans and strategies, to indicate the various steps to be taken to enable countries to be part of the information society and finally to prepare the status of NICI development in African countries.

6. In Canada, the Government developed in 1995, through its “Information Highway” Project [5], a national policy on new information and communication technologies aimed at generalising usage of ICT in every part of life anywhere in the country. Indeed the objectives of the policy were

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1 The African Information Society Initiative (adopted by the ECA Conference of Ministers in 1996) adopted the term "National information and communication infrastructure (NICI)" policies and plans to emphasize the importance of communication in such plans. However, the concept is very close to that of national information infrastructure (NII).
to achieve universal access to the "Information Highway" in all public places like educational services, community networks, libraries and information banks; and to give free email addresses to any user which would like to have one. The Policy recognized that "some form of subsidization will likely be required to assure affordable access to the information highway" and that "this was necessary because telecommunications had become a principal engine of economic and social activity".

7. Like all continents, Africa has defined a strategy to assist its member States to accelerate transition towards a new economy and a new industry based on information and knowledge. This was recognised as the only way Africa’s economies would become competitive and participate in the globalisation process. It was in this context that the African Information Society Initiative (AISI) was developed. AISI had its origins in the "African Regional Symposium on Telematics for Development" organised in Addis Ababa in April 1995 by ECA, the International Telecommunications Union (ITU), UNESCO, the International Development Research Centre (IDRC) and Bellanet International. The Regional Symposium urged the ECA Conference of Ministers to consider the importance for Africa of the global information revolution. In May 1995, the twenty-first meeting of ECA Conference of Ministers responsible for economic and social development and planning passed resolution 795 (XXX) entitled "Building Africa’s Information Highway" that called for work on national information and communication networks for planning and decision-making as part of Africa’s information highway and for the establishment of a High-level Working Group made up of African experts on Information and Communication Technologies to prepare Africa’s entry into the information society. In May 1996 through its resolution 812 (XXXI) the twenty-second meeting of ECA Conference of Ministers approved the plan of action prepared by the High Level Working Group entitled: "the African Information Society Initiative: an action framework to build Africa’s information and communication infrastructure"².

Towards ICT policy

8. The advent of the information technology revolution and its unprecedented capabilities to process, store, refine and disseminate data, information and knowledge in a variety of ways across borders has dramatically changed the ways in which Governments and the public and private sectors operate worldwide. Most African countries have embraced the IT revolution, though the ability to effectively harness the technology varies from country to country. The elaboration of IT policy, an integral part of NICI development activities, is a major determinant factor in setting-up the underlying supporting infrastructure and enhancing the optimal use of the technology. Development of an IT policy is an important exercise and hence should receive the support of all citizens and institutions in a country. Once established, the policy should aim at sustaining the country’s vision and goals. It should embrace strategies and action programmes which will ensure the building of information, knowledge, and decision support systems to enhance Africa’s socio-economic growth and policy formulation utilising information, and communications technologies [6]. ICTs may be used as the main engine for Africa’s socio-economic development and growth thus enabling African countries to be part of the information and knowledge economy.

Transition from Conventional to “Information Age” Plans and Strategies

9. “Information and communication technologies can no longer be seen as a luxury for the elite but as an absolute necessity for the masses. The global movement to an information age and the world-wide technological innovations of recent years, along with other structural and economic developments, have led to rapidly falling costs for information and communication technologies. These have combined with

changes facing global and national telecommunication regimes to present a clear window of opportunity for appropriate "leapfrog" strategies to accelerate the development of the continent. The creation of the African information infrastructure is both a necessity and an opportunity to accelerate development in all spheres of African economic and social activity" [7]. This entails the need for a complete re-examination of traditional national information and IT policies to account for the new emerging technologies and the need to formulate broad and coherent national ICT plans and strategies to advance the development of national information and communications infrastructure. It is important to recognise that the process for setting-up ICT policies and strategies is a work in progress as it requires concerted efforts from all parties, mainly from national governments for effective leadership and direction.

National Information Infrastructure, Plans and Strategies

10. AISI calls for the preparation and implementation of national information and communication infrastructure plans in all African countries and the pursuit of priority strategies, programmes and projects which can assist in the sustainable build up of an information society in member States. The impact from new information and communication technologies is no longer confined to the communications and information sectors. It has become a pervasive mass technology with a much wider scope of influence, affecting virtually all sectors of society. Thus, development of NICI plans will enable African countries and funding partners to have in hand a framework which will guide them throughout the process of programme planning and project development and implementation. It will also enable coordination between various stakeholders and funding agencies and will prevent duplication of activities which is unavoidable whenever there is no NICI development plan in a country. The NICI Plan constitutes also an evaluation tool for decision makers as it encompasses criteria for follow up and monitoring. The AISI framework (presented in Annex 2) indicates the various steps to follow when defining NICI plans.

The NICI development process

11. Implementation of AISI is to be carried out at the countries level by building Africa's information and communication infrastructure through development of NICI policies, plans and strategies. This activity must be seen as an on-going process through the planning, implementation and regular evaluation of programmes and pilot projects developed according to the needs and priorities of each country. NICI includes more than just the physical infrastructure and the equipment which are used to host, process, transmit or display data, text, voice and image. Also, it concerns regulations, enabling environment and procedures which may lead to the development of NICI activities and content. NICI encompasses also development of human resources — public and private sector, civil society — which develop the infrastructure, create applications and value added services, develop training programmes and train students and users, acquire and sell equipment as well as provide Internet and other ICT services. Finally it is to be noted that the developers, administrators, users and the population at large are an integral part of the NICI process and should be involved in its development since the beginning [8].

12. Development of NICI policies and plans is being sponsored by African Governments, ECA, the Carnegie Corporation of New York and the International Development Research Centre (IDRC) of Canada, the latter through its Acacia-Communities and information society in Africa-programme. Other partners such as UNDP, UNESCO and the World Bank together with the “Partners for Information and Communication Technologies in Africa”(PICTA) are also supplementing ECA’s efforts in developing NICI activities in member States. Development of NICI plans received input from the International Institute for Communication and Development (IICD) Round Tables in Burkina Faso, Ghana and Tanzania where the Round Tables have already organised several workshops and defined national projects; some of those projects were updated and fed into the NICI development process.
13. Twenty two African countries are taking part in the NICI development process, as a core group of pilot countries. Some of those countries have in place their national policies, plans and related programmes and projects; some have earmarked funding from the ACACIA program or other financing sources and are implementing their national strategies while others are still in the planning stage. The efforts of ECA and IDRC are geared to both types of countries, working with them in the planning, fund raising, implementation and evaluation process. In all cases, the policy development process cannot be finalized in a short time but goes beyond several months or years after the sensitization and validation workshops are held.

14. The following 22 countries are taking part in the process:

- Benin
- Burkina Faso
- Burundi
- Cap Vert
- Gabon
- Ghana
- Guinee
- Ethiopia
- Mali
- Malawi
- Mauritania
- Morocco
- Mozambique
- Namibia
- Nigeria
- Rwanda
- Senegal
- Sudan
- South Africa
- Tanzania
- Tunisia
- Uganda

**The ACACIA group of countries**

15. The ACACIA group comprises the following countries:

- Mozambique
- Senegal
- South Africa
- Uganda

16. The countries have put in place the ACACIA Program which is the implementation arm of AISI at the community level in member States. Members of the ACACIA group have adopted national strategies in 1997 in each of the four countries; the national strategies are available at the Acacia web site (www.idrc.ca/acacia).

17. It should be noted that the NICI strategy in the above four countries was developed under the umbrella of the national authorities in charge of IT policy planning and implementation and in closer cooperation with all the stakeholders. Approaches are very different in the four countries. But all national strategies were rooted in the National development priority and plans of the concerned countries through the following themes areas:

- Policy
- Applications
- Infrastructure
- Technologies
- Community participation
- Human Resource Development

And crosscutting programmes:

- Gender
- Youth
- Research
The IDRC group of NICI plan development countries

18. The IDRC group of 8 NICI plan development countries are the following:

- Benin
- Burkina Faso
- Cap Vert
- Gabon
- Ghana
- Guinee
- Mauritania
- Nigeria

19. The above countries were officially requested in July 1999 to join the NICI development process as part of a group of countries whose experience would be shared among participants attending the African Development Forum (ADF’99) (Addis Ababa, Ethiopia, 24-28 October 1999).

20. The NICI development process followed in the above countries can be summarized as follows:

- Survey
- Preparation of NICI plans
- Validation/sensitization workshops
- Preparation of policy including:
  - Discussions on policy coordination and implementation organs
  - Policy implementation

The ECA group of countries

21. The following 10 member States constitute the group of countries whose NICI development process is directly followed by ECA staff members. The above countries joined the process from 1997, and NICI activities have been carried out in each of them:

- Burundi
- Ethiopia
- Mali
- Malawi
- Morocco
- Namibia
- Rwanda
- Sudan
- Tanzania
- Tunisia

22. The NICI development process followed in the above countries can be summarized as follows:

- Needs assessment
- Sensitization workshop
- Preparation of NICI plans
- Validation workshop (including more sensitization)
- Preparation of policy including:
  - Discussions on policy coordination and implementation organs
  - Policy implementation
The Process of Developing NICI in Africa

Who should take part in the NICI development process

The stakeholders

23. Since the ICT sector extends beyond the traditional boundaries of the industrial and services sector, the formulation of ICT policy can only be achieved through a broad-based participatory process. The following major stakeholders are invited to participate actively in the policy process:

- Government and parastatals;
- Private sector, both national and international;
- Regulatory bodies;
- Telecommunication operators;
- Non-Governmental Organisations (NGOs and civil society);
- Academia, research centres, IT experts; and
- International and regional organizations.

24. Development of NICI plans is not only a series of procedures and technical prescriptions but should also be seen as a new phenomena and culture for information sharing to reduce the information gaps between different parts of the population. Hence adhesion of decision makers and all stakeholders to the information society concept is essential for the success of the NICI plans to be developed in member States, because those plans are global in nature and embrace all walks of life be they economic, social, cultural or technical. In order to include all stakeholders, African countries are requested to establish task forces [9] or commissions responsible for the development of NICI policies, plans and strategies, the identification of priorities and the setting-up of mechanisms and procedures for follow up and implementation. Hence, development of NICI plans is undertaken by national teams working with the major stakeholders listed above with the aim of reaching a consensus among the various sectors on the needs, priorities and actions to be undertaken.

Assignments for the NICI development team

25. It is recommended that the NICI development team be composed of a coordinator and several other experts in order to carry out the following assignment:

- Identify the economic and social development priorities of the country on the basis of the national development plan, as well as on general and sectoral policy documents by carrying out surveys and needs analysis.
- Identify the needs, priorities, aspirations of various national stakeholders (government, civil society, professional organization, research and training institutions and the private sector) related to ICT.
- Identify the priorities and opportunities of NICI in the economy and assess existing ICT projects in the country;
- Assess the status of ICT in the country with a view to evaluating its prospective development in the four following AISI main areas of focus:
  - Policy issues
    - legal and regulatory framework for policy development and implementation;
• policy context and environmental factors;
• policy objectives and priorities;
• expected results and challenges to be met;
• gender and equity dimensions;
• role of the private sector;
• partnership.

□ **Infrastructure** *(technological resources)*
• physical telecommunication network;
• electronic networks;
• computers and electronic equipment;
• Internet access;
• radio and television;

□ **Infrastructure** *(content and applications)*
• innovative technological solutions and applications to facilitate universal access, especially for illiterate and marginalised peoples (public access, graphic interfaces, touch screens, automatic translation, alternative energy sources);
• national, local content (data bases, web sites, etc.);
• ICT applications in national development priority sectors;
• on-going initiatives and projects

□ **Human resources** *(training, research, capacity building)*
• universities and institutions of higher learning
• research centres
• polytechnics
• user training programmes
• other training centres

**List of documents to be considered**

26. In preparing the NICI plan, the team may take into consideration the following suggested list of documents:

♦ national development plan, general and sectoral policy documents
♦ prospective studies, if available
♦ government Web sites
♦ national ICT profiles prepared by ECA, where available
Definition of the strategic objectives of the NICI plan

27. The national team will define the strategic objectives of the NICI development plan based on development priorities as well as needs and aspirations expressed by national stakeholders. For each strategic objective, the team is requested to:

- identify the opportunities for NICI, the priority actions to be undertaken, the development sectors, target groups and corresponding projects;
- propose a short, medium and long-term action plan for the accepted actions and projects;
- propose an implementation strategy for the development plan, with emphasis on:
  - roles and responsibilities of various stakeholders;
  - partnership development;
  - coordination framework between the various sectors for the implementation of the NICI plan etc.;
  - evaluation and follow up mechanisms.

Outline of the NICI development plan

28. It is recommended that the NICI plan document follows the outline below; its form may vary, but the teams are requested to retain the substance:

1. Introduction
2. Methodology for the elaboration of the NICI plan
3. Baseline data on the country
4. Objectives and priority sectors of the national economic and social development plan and sectoral policies
5. Needs and aspirations of the major national stakeholders with respect to information and communication technologies
6. Status and perspectives of information and communication technologies
7. Strategic objectives of the national information and communication infrastructure development plan and priority sectors for its application
8. Priority actions proposed; and short and medium – term (zero to three years), and long – term (three to five years and more) implementation plan
9. Strategy for implementing the Plan including:
a) Role and responsibilities of various stakeholders

b) Partnerships to be developed

10. National ICT Policy overview (if it exists) and its linkages with the NICI Plan or indications to develop the ICT Policy if it does not exist.

11. National coordination framework for various stakeholders in the implementation and follow up of the NICI Plan

12. List of documents consulted

13. Annex: Descriptions of selected priority projects which could include ICT policy development activities, seminars and workshops, applications, research centres and think tanks, etc.

Description of priority projects in the NICI development plan

29. The NICI plan might be completed with an annex for each of the major priority projects giving a short description of:

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<td>the context</td>
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<td>2.</td>
<td>objectives</td>
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<td>3.</td>
<td>beneficiaries</td>
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<td>4.</td>
<td>expected activities</td>
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NICI Plan Validation Workshop

30. Once the NICI plan document is developed, the Team Coordinator is requested to circulate it for comments to all stakeholders. Finally, it could be brought to a national Validation Workshop and finalized before being adopted by the relevant authorities which may be a Ministry, the Cabinet, the Parliament, the Office of the President, etc.

NICI applications to sectoral ministries

31. The following NICI applications may be useful to sectoral ministries:

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<tr>
<th>Sectors and Activities</th>
<th>Objectives</th>
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<tr>
<td>Research</td>
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<tr>
<td>• Creation of a National ICT Resource Centre</td>
<td>To enable African countries to undertake research activities on ICT; To enable African scientists to participate in software and IT engineering development</td>
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<td>Administration</td>
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<td>• Digitization of personal files, documents and holdings</td>
<td>Better management of Government employees and public administration; Better coordination; Improving accessibility to public administration information for all citizens; Bringing transparency to Government procedures</td>
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<tr>
<td>• Development of a Government Intranet</td>
<td>Improving sharing and circulation of information between Government Officers; Better coordination</td>
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| **Justice** | • Digitization and creation of legal data banks | • To make available all data related to the Justice Department and Court;  
• Improving juridical procedures |
| **Education** | • Creation of virtual networks | • Linking universities and schools into a virtual network for information exchange, research and video conferencing;  
• Creation of on-line data bases and data banks for research;  
• Providing access to on-line education for all;  
• Providing non formal learning facilities via Internet |
| **Trade and commerce** | • Development of a Virtual gallery | • Selling African goods via the Internet;  
• Boosting foreign exchange earnings and promoting trade;  
• Reducing travel cost of economic operators  
| • Trade and customs procedures | • Facilitating trade procedures;  
• Removing bottlenecks in trade procedures;  
• Facilitating customs declaration, and clearing and forwarding of goods |
| • Development of On-line banking | • Speeding up commercial transactions;  
• Facilitating money transfer |
| • Creation of a Network of chambers of commerce and trade points | • Facilitating exchange of trade opportunities;  
• Boosting African trade |
| **Agriculture and Food Security** | • Development and access to forecasting and meteorological networks | • Improvement of food production;  
• Access to on-line agricultural information techniques; |
| • Development and access to distribution networks and data bases of food stocks | • Facilitation of food distribution and commercialization;  
• Hunger prevention |
| • Development of Alert and monitoring systems | • Prevention of drought and eradication of locaust attacks and other national disasters |
| **Culture** | • Digitization | • Safeguarding of manuscripts;  
• Preservation of cultural artifacts;  
• Promotion of African culture;  
• To make available all cultural heritage in a country |
| • Development of virtual galeries | • Electronic networking of cultural institutions and galeries |
| **Health** | • Telemedicine, telediagnosis and health information networks | • Bringing medical expertise to remote areas;  
• Exchange of medical data and information between various hospitals and specialists located in different parts of the world or in a country;  
• Identification and monitoring of endemic zones; |
### Status of NICI development activities in African countries

32. The following status report is based on information sent to ECA by teams which are developing the NICI policies and plans in member States listed in paragraph 14 above. Comprehensive information and data are available for all member States in the document containing NICI profiles of African countries (Document E/ECA/ADF99/1: African Country Profiles: National Information and Communication Infrastructure).
Benin

The Ministère de la Culture et de la Communication is the national institution responsible for ICT policy while the Service de Documentation Technique (SDT) of the Ministry of Planning is the main agency responsible of national scientific and technical information policy. In 1997 UNDP's Sustainable Development Networking Programme (SNDP) initiated a national intranet for the collection and dissemination of multi-sectoral information generated within the country.

Burkina Faso

The Délégation générale à l'informatique (DELGI) is the government body responsible for national ICT policy planning and coordination. DELGI works closely with the National Telecommunications Office (ONATEL) and the National Centre for Information Processing (CENATRIN) to assist in ICT development and use in the country. In March 1997, DELGI and ONATEL organized a national workshop on the development of the national information society in Burkina Faso, assisted by IICD and ORSTOM. The workshop resulted in a detailed and wide-ranging national plan for the increased use of ICT up until the year 2000. As a follow up, ECA and IDRC are working with a country team coordinated by DELGI to develop Burkina Faso's NICI plan for the coming years.

Burundi

Together with the National Telecommunications Office (ONATEL), the National Computer Centre is the main government department in charge of networking activities in Burundi. Their activities are supplemented by activities of the National Library and the National Information and Documentation Centre which was created in 1980.

Cap Vert

The Ministry of Infrastructure and Transport is the lead body in developing the national infrastructure. It is working with the Cape Verdean Computer Communication Project (CVCCP), a volunteer organization, to promote the understanding, utilisation, and application of computer and communication technologies in Cap Vert. The Cap Vert's NICI plan is being developed by a national team with assistance from ECA and IDRC. A workshop was held in Praia in the beginning of October 1999 with all the stakeholders under the coordination of the Ministry of Infrastructure which is the coordinating body for NICI plan development in the country. The workshop made several recommendations including the development of an ICT policy which would embrace a regulatory framework and an ICT coordinating body. The NICI plan is being finalized with incorporation of all the recommendations of the workshop.

Ethiopia

The NICI development process is spearhead by the Ethiopian Science and Technology Commission. Development of a national information infrastructure plan is one of the key focus areas of the Government of Ethiopia. A prime ministerial committee has been established to develop concrete action plans. Recently, studies were commissioned to critically look at key issues in NICI development process. An initial workshop was held from 11-12 October 1999. Recommendations of the workshop will
be forwarded to high level of government officials for endorsement and implementation.

Gabon

The Ministry of communication, posts and telecommunications together with its subsidiaries (Post and Telecommunications Office-OPT-, and National Office for International Telecommunications-TIG-; UNDP's SNDP programme; and the African Informatics School-IAI- are the major NICI actors in the country. However the President's Office takes overall responsibility in the area of ICT policy development. For the time being the main element of NICI application is the Gabonese National Network on Sustainable Development funded by UNDP. An overall NICI plan is being developed by a National Team supported by ECA and IDRC.

Ghana

The Ministry of Communications was created in 1997 to be in charge overall ICT policy planning and coordination. Its main objective is to facilitate the strategic development and application of the use of the various communications resources – human, material and technological – for effective communications throughout the country. The Ministry has since then embarked on a process aimed at formulating a workable national communications policy for Ghana. Accordingly, a conference on a National Policy on Communications was held from 7-9 October 1998 at the Accra International Conference Centre as a primary forum to discuss and obtain a deeper understanding of cognitive, social and practical issues underlying effective communications. As a follow up, ECA and IDRC are working with a country team to develop Ghana's NICI plan for the coming years.

Malawi

Malawi began the development of a national information and communication infrastructure plan with an initial workshop that was held in October 1999. The Ministry of Information, Broadcasting and Communications is the lead institution in the NICI process. The initial workshop that brought different stakeholders together has made a series of recommendations in policy formulations, content development, applications and infrastructure building.

Mali

H.E. Mr. Alpha Oumar Konaré, President of Mali's support to NICI development activities cannot be over emphasized. He enabled the establishment of a network known as ANAIS with national nodes in 8 African countries, to facilitate the use of ICT in Africa by setting up a project for collecting and documenting successful ICT experiences in Francophone countries and in Ghana. NICI policy, plans and strategies are being addressed with organization of "the high level seminar on ICT strategy for Mali" held in Bamako from 2 to 5 October 1999. The seminar recommended that a coordinating office on NICI issues be set up at the President's or Prime Minister's Office. Following the seminar a team has been established to follow on recommendations and the development of a national plan supported by ECA.
Mauritania

Mauritania began his NICI development activities with involvement of the Faculty of Science and Techniques of the University of Nouakchott which is the leading networking institution in the country. Its efforts were supplemented by various projects including those funded by La Francophonie, UNDP and the World Bank. As a follow up to these activities and in order to have a coordinated framework for action, ECA and IDRC have worked with a country team to develop Mauritania’s NICI plan for the coming years. The plan was validated during a national workshop held from 25-27 September in Nouakchott and officially transmitted to the ECA Executive Secretary.

Morocco

ICT planning and coordination is under the overall responsibility of the Secretariat of State for Post and Information Technologies (SEPTI) under the Prime Minister Office. It was established in March 1998 with a main mission to establish a national and integrated IT strategy which would enable the entry of Morocco into the Information Society. A national IT plan 1999-2003 was prepared and approved by the government for implementation. Several sectoral applications are already in place, including the Education and Research Network (MARWAN). A national workshop was organized by SEPTI with support of the Ministry of Industry and ECA from 28-30 September 1999 in Rabat. The seminar came up with concrete recommendations in form of priority projects to be finalized by a national team of experts for submission to the Government and to partners.

Namibia

The Ministry of Information and Broadcasting is the key institution in Namibia that has adopted the AISI framework and initiated a NICI strategy for Namibia. In this regard, the first workshop on “Development of National Information and Communication Infrastructure for Namibia” was organized in May 1998 with participation of all the national stakeholders and the international community. This led to endorsement of the workshop recommendations and inclusion of NICI strategy in the national development plan. A follow up workshop was held in October 1999 and recommended the development of a national information and communications policy and the setup of NICI resource center as well as implementation of pilot community centers to democratize access of Namibians to the Information Society. The main NICI application is being implemented by the Government of Namibia in collaboration with UNDP by setting up a country-wide public Intranet to link government offices.

Nigeria

The Nigerian Communications Commission (NCC) was established in 1992 to regulate the telecommunications industry, to ensure the provision of adequate, effective and efficient telecommunications service nationwide at affordable price and to provide local and international telecommunications information service. There are several leading institutions on IT development and usage, including the Obafemi Awolowo University, the Yaba College of Technology and the National Information and Documentation Centre. There is not yet a national IT policy however for the last months several workshops and consultations have been held to discuss ICT policy activities and a Committee has been formed under the chairmanship of the Vice-
President of the Federal Republic of Nigeria. In this regard, ECA and IDRC started in August 1999, consultations with the Nigerian authorities, the private sector and the civil society in order to set up a national team for the development of a NICI plan. To this effect, a National ICT Policy workshop is scheduled to take place in November 1999 in Abuja.

Rwanda

A high level national workshop on "Information and Communication Technology Policy and Strategy for Rwanda" was organized in Kigali, from November 30 - December 3, 1998 by the Government of Rwanda with support from ECA, the Carnegie Corporation of New York, UNESCO, USAID and UNDP. The objective of the workshop was to sensitize decision-makers on issues related to ICT and discuss development of an ICT policy and strategy for Rwanda. The workshop recommended steps which need to be taken by the Government of Rwanda for the formulation and implementation of an ICT policy and strategy, the most important of which is the creation of a high level national ICT co-ordinating structure. Consequently, in July, August and September 1999, ECA sent to Rwanda a team of experts to prepare a draft policy document and make recommendation for the creation of the "Rwandese Information Technology Authority" (RITA) to be located under the Office of the Vice-President.

Sudan

Sudan joined the NICI plan development process in July 1999. Even though there is no integrated national ICT policy in Sudan, there are several sectoral initiatives spearheaded by the National Research Council, the Ministry of Local Government and the universities. Development of NICI plan is underway and will be supported by ECA and UNESCO.

Tunisia

In Tunisia, the Secretariat of State for Information Technology was established in 1995 to take care of overall ICT planning and coordination in liaison with the relevant sectoral ministries and institutions. The Information Technology plan (1997-2001) is now in its fourth cycle. In addition to ministries dealing with sectoral applications (telemedicine, education, e-commerce, etc.) there are several key institutions investing heavily and operating in the ICT development field, namely ATI, Tunisia Telecom and IRSIT.

Tanzania

The NICI process in Tanzania began in 1997 through a series of workshops organized by ECA, IICD and the Government of Tanzania. A follow up workshop was held in October 1999 and recommended among other things the development of a national information and communication infrastructure plan during year 2000.

33. National ACACIA strategies for Mozambique, Senegal, South Africa and Uganda are part of the overall ACACIA strategy mentioned in paragraph 17 above. However the four countries do not have the same planning strategy for global ICT issues, and besides the ACACIA program, there are several other national ICT policy strategies and sectoral initiatives being implemented nation-wide in each country.
The Process of Developing NICI in Africa

(See Document E/ECA/ADF99/1: African Country Profiles: National Information and Communication Infrastructure). Also these countries have put in place several successful IT applications such as:

- Rural access
- Decentralization and generalization of access to IT
- Telemedicine
- E-commerce
- Facilitation of trade procedures
- School networks
- Empowerment of youth
- Empowerment of woman
- Application of ICT to environmental concerns

34. Reports on the planning and implementation of the ACACIA Strategy for the four above countries are available at IDRC and at the ECA secretariat.

Conclusion

35. The challenge to governments in African countries is the re-examination of their role, their regulations, and their national policies in the Information era, so that they can exploit to the fullest potential the positive benefits of the information society. The challenge to the private sector is to be innovative and to spearhead the creation of an African information economy. The challenge to the civil society is to ensure that all stakeholders take part in the development of NICI policies, plans and strategies, and that the needs of the disenfranchised groups are taken care of by the government and the private sector. The challenge to the partners is to work closely with African countries in the planning and implementation of NICI activities in accordance with the countries needs, aspirations and priorities. This entails a challenge to clear vision and leadership from the governments on how NICI could serve their national interests, and to promote the necessary organisational change. Putting in place of NICI plans and strategies is a 'key building block' required to meet those challenges. The AISI framework and the PICTA mechanism have been put in place to assist African countries to build their respective information societies.
Annex 1

References


5. Competition and Culture on Canada's Information Highway: Managing the Realities of Transition: http://www.crtc.gc.ca/


10. Communities and the Information Society: the Acacia Initiative: http://www.idrc.ca/acacia

11. Partnership for Information and Communication Technologies in Africa: http://www.bellanet.org/partners/picta/
Annex 2

Guidelines for developing National Information and Communication Infrastructure (NICI) Plans

- Define vision, mission, strategic objectives, scope.
- Define the institutional framework.
- Define the regulatory framework.
- Define the information technology business sector.
- Define the development priorities (five-year plan, cabinet directions, etc.).
- Define the economic and business sectors as well as the market trends.
- Define education and science and technology infrastructure.
- Define needs and priorities for information, decision support, networking, information services, etc.
- Define the data/information and decision support agencies, actors, etc., at the different levels: national, local.
- Define the technology infrastructure.
- Identify, formulate and develop programmes and projects.
- Formulate strategies for development of NICIs.
- Develop a detailed action plan, time schedule, priorities and budget.
- Determine the implementation agencies in charge.
- Solicit the commitment of policy makers, industry leaders, etc.
- Formulate the public awareness campaign.
- Implementation.
- Evaluation.

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3 AISI, pp. 51-52