SAARC

BEST PRACTICES IN INFORMATION AND COMMUNICATIONS TECHNOLOGY IN SAARC MEMBER STATES

NOTES BY NEPAL AND SRI LANKA

AT THE

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Regional Cooperation in Information and Communications Technology
SAARC Perspective

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Introduction

ICT constitutes both a challenge and an opportunity for developing countries. It is one of the key driving forces behind globalization. Under favorable conditions, ICT can be a powerful instrument for increasing productivity, generating economic growth by facilitating trade, transport and financial issues, thus creating jobs and improving the quality of life. ICT enables the rapid development of various sectors of the economy and can generate widespread gains and positive effects.

Developing countries face major obstacles in hooking up their population to ICT and the benefits it can deliver. ICT requires infrastructure, connectivity and enabling environment by preparing innovative policies for the sector. Distance education can not function without a school with electricity; telemedicine will not work if hospitals do not exist. Huge disparities are already evident among the countries of the region in the main ICT development indicators. This points to a "digital divide", which threatens to increase the gap between the rich and poor among and within countries. There is a "technological divide" exposing the lack of basic infrastructure in many countries to absorb the minimum ICT technology. There is a "content divide"; much of the web based information is simply not relevant to people's need. There is a "gender divide", with women and girls enjoying less access to ICT than men and boys. There is also a "commercial divide", as e-commerce, which leads to faster business communications among companies and people, is more prevalent in some countries than others. There are also social, economic and other disparities and obstacles that affect a country's ability to take advantage of digital opportunities. The challenge is how to convert these "digital divides" into "digital opportunities" for all, particularly for those at risk of being left behind and further marginalized. The challenge for the developing world is how to harness the potential benefits of ICT to achieve the Millennium Development Goals.

Nepal's ICT Initiatives

As a developing country, Nepal has availed of the opportunity to rapidly develop various sectors such as education, health, agriculture, tourism, trade, among others, using information technology. The establishment of a vibrant information technology sector is expected to catalyze the growth of the Nepalese economy.

Enabling Policy Environment

Recognizing the importance of information technology, the Government of Nepal has introduced the IT Policy in 2000. The policy has been revised in 2009 and now in the process of approval. Following are the two main aspects considered in developing the new IT Policy:

- ICT as an enabler for economic, social, administrative and other areas of development.

- ICT as an economic force to create employment opportunity, economic development, export promotion through effective use of ICT.

The policy declares ICT as the highest priority sector and aims to create knowledge based society and establish knowledge based industries.

Similarly, the Government of Nepal has already introduced Electronic Transaction Act 2004 and its related laws and by-laws.

Information Technology Park
Government of Nepal has created Information Technology Part (IT Park) with a vision to serve as a catalyst for the development of ICT sector in the country through the provision of world class business environment that enhances overall competitiveness and efficiency of its stakeholders.

Building Human Capacity

For supporting the growth and enhancing the quantity and quality of human resources in ICT, the Government of Nepal has facilitated academic institutes dedicated for ICT studies under different universities. Besides academic programs, there are training institutes to produce medium level ICT professionals.

Rural Connectivity Initiatives
Nepal being a mountainous country, rural connectivity through terrestrial network (wired) is not a viable option. The viable option for rural connectivity would be wireless network. Rural regions having lower concentrations of people and generally less intense economic activity will continue to be isolated digitally if it is not planned properly. The e-Government Master Plan has set aside substantial fund of the project in rural connectivity.

Mr. Mahabir Pun has done a remarkable work in rural connectivity using wireless technology in mountainous rural areas of Nepal. In recognition of his innovative application, he was awarded the prestigious Ramon Magsaysay Award for 2007. Mr. Pun's contribution has helped substantially in spreading ICT in rural Nepal.

Rural Telecentre
It is also known as rural Information centre, whereby people can access internet, use other ICT facilities like - computer, printer, photocopier, fax etc. Also, they can have information on agriculture products, weather data and other relevant information of local interest. ICT related trainings are also conducted as per the users' requirement.

In remote places where there is no regular power supply from national grid, solar power is used to operate them. Telecentres have become very effective means to take ICT to the remote areas, and thus contributing in narrowing the gap of digital divide.

Open Technology Initiatives
An Open Technology Resource Centre (OTRC) has been set up at IT Park in collaboration with the information technology giant IBM (International Business Machine) with an objective to contribute to the growth of open source technologies in Nepal through research and development, human resource development, networking and entrepreneurship development.

e-Government Initiatives
Noteworthy among the country's recent e-Government initiatives is Nepal's e-Government Master Plan (e-GMP), completed in November 2006. Another milestone is the preparation of an ICT Development Project which has worked out detailed investment proposals for prioritized projects. The Government of Nepal is, thus, keen and committed to promote e-Government for

implementation of various G2G, G2C and G2B projects defined under respective priority areas. The Asian Development Bank has agreed to provide a grant of US$ 25 million for e-Government project. There are 8 projects (components) under different ministries identified by e-GMP and the Government of Nepal is now in the verge of execution of these components.

As prescribed in e-GMP, the government of Nepal has already constructed Government Integrated Data Centre (GIDC) with financial and technical help from South Korea. GIDC is constructed as high grade data centre at a national level to be used by all entities of the government. Its role is to provide services like data storage, sharing computing resources, email/internet and website hosting, which are general function of any data center, to all the government ministries and departments. It is expected that all ministries and departments are connected with the data centre by the high speed network so that they can manage their applications from their own premises in a secured manner. GIDC is currently managing and operating by the National Information Technology Centre (NITC), Ministry of Science and Technology.

Government Applications

a)   Inland Revenue Management

Inland Revenue department of Government of Nepal has computerized several procedures of their daily taxation system to deliver the effective and efficient services to the tax payers. Some of the key e-Government application that are implemented in Inland Revenue Department are as follows:

VAT Assessment /Collection System: VAT was introduced in 1997 with the help of computerization. It is a successful system. All the interaction related to VAT between taxpayer and Inland Revenue Office (like- registration, return filing, payment, assessment, appeal, refund, penalty etc.) are entered into this system and the system automatically calculates and generates the latest statement and due of the taxpayer.

Income Tax Assessment/Collection: It was introduced in 2004 and operational in all IROs. This system deals with all the interaction related to income tax between taxpayer and Inland Revenue Office (like- return filing, amendment, review, payment, assessment, appeal, refund, penalty etc.).

Revenue Accounting System (RAS): RAS was developed in 2006 and now it is installed in all Inland Revenue Offices. All kinds of incomes of Inland Revenue Office is entered into this system and immediately the receipt is generated. The entered data are then transferred to the Department where they are updated into the central RAS Database.

E-pan system: e-PAN System is an Internet based system. This allows access to any taxpayers and tax officers from anywhere. Effort has been made to simplify the system so that the system can be operated without any training. Only requirement will be access to Internet and skill to operate Internet. In this system intermediary organizations assigned by IRD are allowed to enter and verify the PAN registration information into the e-PAN System. After verifying the registration information the system generated the PAN Card which intermediary organizations hands over to the concerned taxpayer with their seal and signature.

e-TDS (Electronic Tax Deduction at Source): e-TDS system is an Internet based system. This allows withholders and tax officers to access system from anywhere with Internet connection. The main objective of the system is to do away with the necessity of collecting TDS certificates credit in their tax returns. In this system, the withholder enters the TDS and Voucher information into the system and system generates a report, which the withholder sends to the concerned Inland Revenue

Office with their seal and signature. The concerned tax officer checks that information and verifies into the system. The withholders can see their TDS information by logging into the system with their username and password. Tax officer can also issue the tax clearance certificate to the withholders by checking the information into the e-TDS System.

e-Estimated Income Tax Returns System: e-Estimated Income Tax Returns System is an Internet based system. This allows inserting online Returns information. In this system the taxpayer enters the installment return data into the system and sends the report to the tax office with seal and signature and after carefully verifying the report, the taxpayer verifies that return into the system. All the verified records of e-Estimated Returns System are finally transferred into the central Income Tax Database by IT Section in IRD.

b)   Vital Events Registration System
     The Vital Events Registration System (VERS) is system is used for the purpose of capturing demographic information for various purposes. Over the past, the vital event registration has been sidelined and ignored due to lack of awareness. The system mainly maintains birth, death, migration, divorce and marriage data. It has also a facility to print the certificate instantly.

c)   Government Accounting System
The Computerized Government Accounting System (CGAS) developed by the government agency is in use at several government institutions at their paying offices along with District Expenditure Control System (DECS) and Financial Management Information System (FMIS) to record expenditure and revenue data and produce reports.

d)   Land Information System
Land information system was developed under the Department of Land Reform Management System. Under this system, the land data is electronically archived so that retrieval of land information is efficient and accurate. The system is gong to be replaced by Land Reform Management System in near future.

e)   Citizenship Distribution System
Computerized Citizenship Distribution System was developed under the Ministry of Home Affairs. It has been already implemented in several districts and has a plan to implement in all the districts. The key features of the application are data archiving, citizenship card printing and standardization of card distribution system.

f)   Company Registration Management System
Company registration Management System (CRMS) was developed under the Office of the Company Registrar. Some key features of CRMS application are: *New Company Registration, Lodgments of Documents, Liquidation of Companies, Message Notification Generation, Company Name Certification, Receiving Payment Penalty, Storing of Physical documents & Importing existing data, Maintaining Historical data, Generating Reports, Online Company Name reservation, Online Registration & Lodgment.*

g)   E-Judiciary System
There are number of e-Gov applications running in the Supreme Court and the public is getting lots of benefit from it .One of the major component of e-Gov application under the Supreme court is acquiring the date of the case (Tarikh) through display monitor which scrolls the cases continuously. Some of the key applications using in Supreme Court are: *Case Management System,*

Store Management System, Personnel Information System, Training Management System, Contact Management System, Application Registration System (NibedanDarta, Record Management System.

h)   <u>Nepali Unicode System</u>

The utility of the local Nepali True Type Fonts (TTF) is slowly phasing out because of its limitation to just typing. In Nepal we see so many varieties of TTF fonts such as Preeti, Kantipur, Himali, Sama etc. in use. These fonts to a large extent have fulfilled the demand of typing in Nepali in computer. But unfortunately, they lack of standard and compatibility to data processing or cross platform data exchange which limits its function to just typing. On top of it, with every font designer creating his/her own different keyboard layouts for every single font, people get a notion that may be Unicode Nepali is just another name!
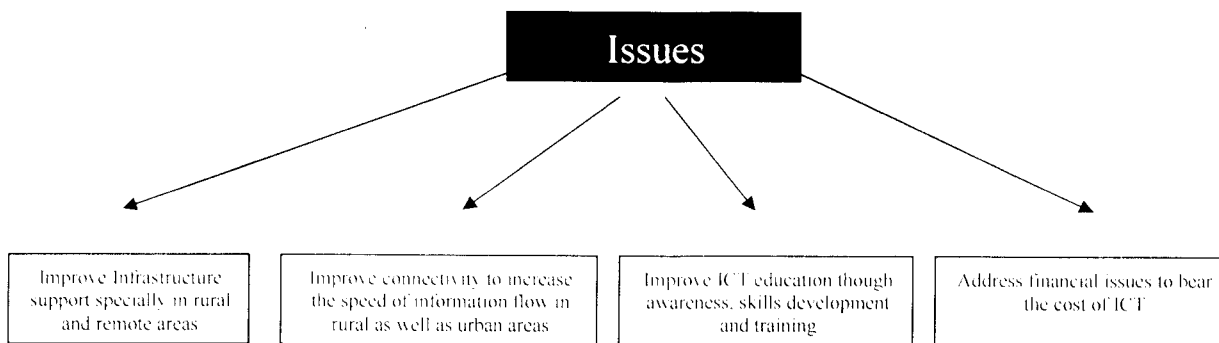
But Unicode Nepali in itself is not a font. Unicode is an ISO standard computer encoding system issued by Unicode Consortium which can incorporate any number of different fonts of different languages which is now applicable in Nepalese context too. Similarly, with its cross-platform compatibility, Unicode Nepali makes all the data processing units as well as the operating system possible in Nepali too. Again, with the keyboard layouts Unicode Nepali Traditional and Unicode Nepali Romanized, both the traditional Nepali keyboard users and those who are just used to English keyboards can easily type in this system. BBC Nepali Service, Kantipur Online, China Radio Nepali Service and Nepal Development Forum are few examples of Unicode Nepali in use.

With its multi functional capacities and easy to type Nepali keyboard layouts, this will prove to be of great use at the Government Offices and departments where all the necessary documentations, websites and information are mostly in Nepali. Apart from this, safe storage and manipulation of all the documents/data now as well as in future becomes feasible with the use of Unicode Nepali.
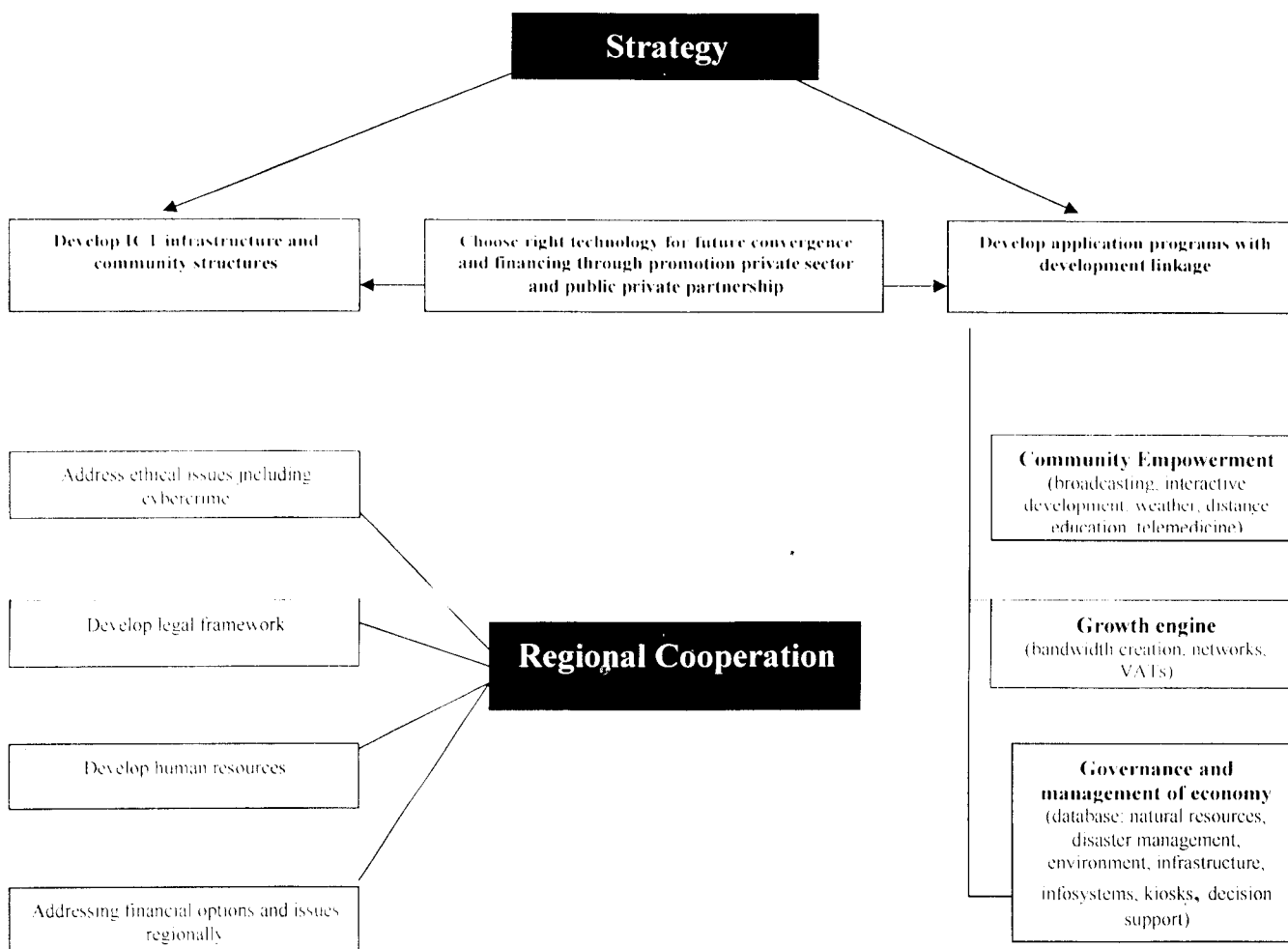
All the newer version of computers lately produced is Unicode compatible. The software in TTF fonts currently in use might not get its customized supplement later in future as the software companies have more or less stopped producing them or be much expensive though available. The distribution of citizenship through the use of Unicode Nepali from Ministry of Home Affairs is the latest one of the successful example of the implementation of Unicode Nepali. Therefore in this matter, use of Unicode Nepali is a must if GON is to think in a long term for efficient dissemination of information and service to the people.

Regional Cooperation

Regional cooperation can help poor countries to bridge the digital divide and address core issues of developing ICT infrastructure, improving connectivity and supporting ICT education and financing. Regional cooperation can also help to develop the necessary legal and regulatory framework to promote e-commerce, prevent cyber-crime and create an "application program" that addresses issues of governance, community empowerment and economic growth. Following figure illustrates bridging of digital divide and regional cooperation.

Issues

- Improve Infrastructure support specially in rural and remote areas
- Improve connectivity to increase the speed of information flow in rural as well as urban areas
- Improve ICT education though awareness, skills development and training
- Address financial issues to bear the cost of ICT

How to address these issues

Strategy

- Develop ICT infrastructure and community structures
- Choose right technology for future convergence and financing through promotion private sector and public private partnership
- Develop application programs with development linkage

Regional Cooperation

- Address ethical issues including cybercrime
- Develop legal framework
- Develop human resources
- Addressing financial options and issues regionally

- **Community Empowerment** (broadcasting, interactive development, weather, distance education, telemedicine)
- **Growth engine** (bandwidth creation, networks, VATs)
- **Governance and management of economy** (database: natural resources, disaster management, environment, infrastructure, infosystems, kiosks, decision support)

Source: ESCAP

ICT Cooperation in SAARC

Cooperation in the SAARC sub-region has been extensive in telecommunications and in other areas such as audio-visual exchange programs, information sharing and networking. At the 9th SAARC Summit, held at Male in 1997, member countries agreed to enhance economic cooperation by simplifying complex documentation procedures. The first SAARC Communications Ministers Conference held in Colombo in 1998, adopted the Plan of Action on

Telecommunications. The Plan of Action calls for a reduction in telecommunications tariff within the SAARC sub-region, special rates for transiting regional traffic, cellular roaming, liberalized leased lines and human resources development. It also proposed that regulations, including tariffs, be simplified. SAARC has also emphasized the use of ICT in the media as a tool for disseminating information. The SAARC Audio-Visual-Exchange (SAVE) Program already uses radio and television channels to encourage socio-cultural exchange programs aimed at improving public understanding of the culture and the society of member countries. The SAVE program includes joint productions on such issues as the environment, disabled youth, literacy, participatory governance, safe and clean water, and mountains and hills.

Senior officials from Bangladesh, Bhutan, India and Nepal have agreed to collaborate on a subregional information communication technology (ICT) project to improve connectivity among the four countries.

The agreement by the South Asia Subregional Economic Cooperation (SASEC) countries was reached at the fourth ICT working group meeting to discuss the proposed SASEC Information Highway Project in New Delhi, India on 8-9 October 2007.

The joint statement issued at the meeting reassured the four countries' commitment to promote closer cooperation for development and applications of ICT, and to improve social and economic participation through better access to appropriate support and infrastructure. The project will mark the first multi-country investment project in South Asia supported by the Asian Development Bank (ADB), if it is approved by ADB's Board of Directors.

The SASEC Information Highway Project consists of three key components. It will establish the SASEC regional network to integrate member countries and reduce Internet costs, particularly for the land-locked countries of Bhutan and Nepal. It will also build the SASEC village network to expand broadband wireless connectivity to rural communities and enable them to better access services such as tele-medicine, distance learning, and e-government services. In addition, it will set up the SASEC regional research and training network to facilitate the flow and integration of information, knowledge, and services among member countries through directly linking communities, businesses, and research institutes.

Promoting further ICT Cooperation in SAARC

Strengthen Information Highway Project

The agreement by the South Asia Subregional Economic Cooperation (SASEC) countries was reached at the fourth ICT working group meeting to discuss the proposed SASEC Information Highway Project in New Delhi, India on 8-9 October 2007. The SASEC Information Highway Project consists of three key components:

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- To build the SASEC village network to expand broadband wireless connectivity to rural communities and enable them to better access services such as tele-medicine, distance learning, and e-government services.

- To set up the SASEC regional research and training network to facilitate the flow and integration of information, knowledge, and services among member countries through directly linking communities, businesses, and research institutes.

It is to detail out the modalities of cooperation for the effective execution of SASEC Information Highway Project. Upon the successful implementation of this project the member countries would benefit substantially in several areas.

Strengthening Human Capacity:

There are countries in the region with world-class expertise in electronics, hardware and software technologies and very good technical institutes. Many developed countries outsource their business processes which use ICT to countries of the region. Moreover, hardware and software industries constitute a major export sector in some countries which has created substantial employment opportunities in the region. In spite of this, there are countries that do not posses even the basic ICT infrastructure. Regional cooperation in the region should aim to narrow this gap and foster development. There are enough regional resources to tackle such digital divide; the issue is to utilize them strategically.

Regional Institutional Networking

In Pacific island counties, the application of ICT has been proposed to enhance telehealth and distance learning programs through community telecentres. By contrast, ASEAN, having a relatively high penetration of ICT, gives more importance to the commercial use of technology, especially in e-commerce. Meaningful regional networking and cooperation regarding institutional development, helping private sector participation in these sectors and understanding the benefits of using ICT in the trade and transport sectors may prove useful to enhance the growth and development of the region.

Broadband Satellite Communications

Access to low-cost bandwidth connectivity will be a vital component for economic development in the new millennium. Therefore, one aspect of what makes space more relevant to the poor and marginalized is the outreach capabilities of satellite communications. While broadband terrestrial networks are likely to cover urban areas and dynamic corridors, rural regions having lower concentrations of people and generally less intense economic activity will continue to be isolated digitally if the satellite communication option is not used. Although terrestrial wired (fibre optics, digital subscriber line), wireless (microwave) and satellite based communications are all experiencing significant technological advances, the big improvements that are looming in the affordability and broadband capacity of satellite communication will adequately have the greatest potential benefit for reaching previously underserved or unserved communities. Regional cooperation in maximizing the use of broadband satellite communications would be of great benefit to the larger mass of this region.

SHARING BEST PRACTICES OF INFORMATION TECHNOLOGY: SRI LANKA

1. **Policy Environment in Brief**

   a. ICT Act No. 27 of 2003 created the Information & Communication technology Agency of Sri Lanka (ICTA) as the apex level body for ICT policy and development in Sri Lanka. It also acts as a registered public company. World Bank assisted *e-Sri Lanka* programme and many other ICT initiatives in the public sector are directly guided by ICTA. The Act was amended in 2008 to further facilitate ICT Agency's involvement in national ICT development.

   b. The Government of Sri Lanka recognized ICT as a tool for development by President's declaration of 2009 as the "Year of English and IT"

   c. As a human resources management policy, the Cabinet has approved creation of a separate all-island service for ICT. This will help optimum use and sustaining of huge investments on ICT capacity building of public agencies.

   d. After wider stakeholder consultation, a comprehensive E-Government Policy is now ready to submit for Cabinet's approval.

   e. A National Broadband Consultative Committee has been appointed by Secretary to the President. ICTA and Telecom Regulatory Commission to jointly draft National Broadband Policy.

   f. Circulars by Secretary to the President to use ICT for communication (email, websites) in government agencies and to adopt data interoperability guidelines of ICTA when creating databases in government agencies

   g. Conducive environment to promote ICT in schools and in the society.

2. **Some of the Best ICT Practices in Government**

   a. Process reengineering is the first priority before applying ICT in public agencies. Many e-Gov initiatives helped saving time and resources (database of Birth, Marriage and Death Certificates, Dept. of Motor Traffic. Dept. of Immigration & Emigration, budgeting and treasury operations, Inland Revenue Dept.)

   b. Pooling of all information related to public service delivery under Government Information Center (GIC–"1919") project, a winner of the World Summit Award in 2009. GIC is a public-private partnership which acts as a tri-lingual helpdesk for providing information on government services 12 hrs a day.

   c. Lanka Government Network (LGN – Phase I & II) interconnects 475 government agencies to share ICT resources, including cost-free calls with VOIP facility

   d. The creation of a network of "Chief Innovation Officers" (CIOs) in public institutes, who act as innovators in delivering public services. Some of them are recognized as 'e-champions'

   e. Recognize ICT solution developers in the public sector (e-Government) under *e-Swabhimani* National Awards for Content Developers

   f. LankaGate as a portal to customize services to the citizens as a virtual "one-stop-shop". Envisage facilitating credit card and mobile phone payment method to obtain selected public services.