

APPLICATION OF ICT IN RURAL DEVELOPMENT IN SRI LANKA

Ajantha Hapuarchchi

Coordinator, Journalism Unit
University of Colombo, Sri Lanka
Website: <http://www.cmb.ac.lk/>
E mail: ajanthahapu@yahoo.com

Abstract: *ICT was spread to rural people after the implementation of initials from the University of Colombo, Sri Lanka. Initial steps had been taken ideologically and conceptually in 1967 in the period of Mrs. Sirimavo Bandaranayake, then the Prime minister. Then the Prime Minister Mrs. Bandaranayake had requested to Prof V.K. Samaranayake, to take the initial steps of ICT in Sri Lanka with the help of Sri Lanka Insurance Corporation for governance. Then, Sri Lanka had only two computers with punch card system and one was in the Central Bank and the other one was in Insurance Corporation. By that period, the University of Colombo also had two computers and they were used for the presidential election in 1979, it was the first time computer used in election duty. That was a land make in Sri Lankan ICT system. 1983 also was a special year for ICT in Sri Lanka, because the University of Colombo established a section called (ICT) Institute of Computer Technology, and started undergraduate and post graduate computer science education with the help of Japanese Aids. In 1988, Sri Lanka started SL Net, Lak Net, Lanka internet and Internet Society. By the time from 1996 'Sarvodaya' which is leading NGO in Sri Lanka had started popularize computer facilities for rural people. The same period the government started knowledge centers; Nenasala.*

Keywords: *Nenasala (Knowledge centre ,Bandaranayake, Samaranayaka, Kothmale internet Radio, ICTA, sarvodaya, LK*

Policy making

Sri Lanka has paid attention for policy making on ICT from the beginning, in the information age. Like other countries Sri Lanka always paved the way to work with the non-government organizations. The Information Communication Technology Agency (ICTA) was established by the Government to define, catalyze, and lead implementation of the country's ICT policy. ICTA has a very effective institutional model that draws on Singapore's and Korea's unique e-development experience. It has been granted independence to implement a multi-pronged program of activities that it calls - "Auctioning ideas". It had a long history of ICT development, beginning with its National Computer Policy of 1983. However, it was not until the launch of the e-Sri Lanka initiative in 2002 when the country began to develop an ICT roadmap that sought to address the digital divide by disseminating ICTs to the regions and to provinces outside of Colombo, particularly in the rural areas. e-Sri Lanka was envisioned as a framework for creating an enabling environment where government works in partnership with stakeholders to create the infrastructure and establish e-government services. The e-Sri Lanka roadmap transformed into the multi donor funded e-Sri Lanka Development Project, which Communication technology Act no. 27 of 2003, under which the information and Communication Technology Agency (ICTA) was established as the led and implementing organization for e-Sri Lanka. The ICTA's mandate was strengthened by the ICT (Amendment) Act no. 30 of 2008, making the apex ICT policymaking body and executive agency for ICT.

In 2003, the Information and Communication Technology Agency (ICTA) was created as a government-owned, limited private company reporting to the Minister of Economic Reform, Science and Technology. It is tasked to implement the e-Sri Lanka Roadmap and Re-engineering Government.

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E-Sri Lanka Transforming a Nation through ICT - World Bank

When the ICT popularized the government as well as the people in the country are aware the need of the ICT. Parents rush to educate in computing their children and the university run behind the world bank plan to educate graduates in the universities.

Anyone you can access information from 77 Government organizations in any of the country's three main languages- Sinhala, Tamil or English. Meanwhile, Sri Lanka's over 100,000 hearing and vision impaired, stand to benefit from an Impaired Aid Project that has introduces "Digital talking Books" using a new suite of local language accessibility applications.

The online Government Information Centre, and the Impaired, Aid project won awards at the 2009 World Summit Awards (WSA), a global initiative for selecting and promoting the world's best –contents and applications. Both projects are part of e-Sri Lanka, one of the first World Bank projects designed to bring Information Communication Technology (ICT) to every village, citizen, and business, and transform the way the government thinks and works.

The vision expressed at the launch of the project in 2004 was that "e-Sri Lanka aspires to the ideal of making Sri Lanka the most connected government to its people, and raising the quality of life of all its citizens with access to better public services, learning opportunities, and information," Sri Lanka is now on course to realizing this vision.

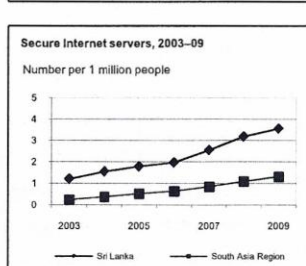
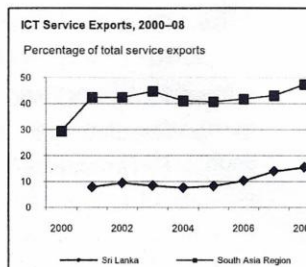
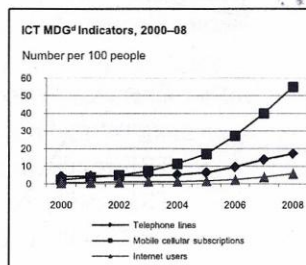
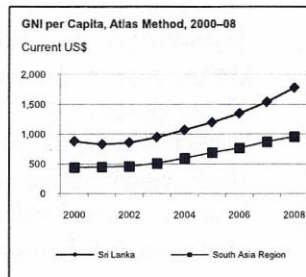
The E-Sri Lanka Development Project was developed collaboratively between the World Bank South Asia Region's Finance and Private Sector Development Unit and the Global ICT Unit. It pioneered integrating a comprehensive ICT vision and planning into the development process.

Initially, Sri Lanka has a challenge and risk of the new e-Development paradigm in demonstrating, that ICT can have an enormous impact in terms of improving government services, creating jobs, and enhancing skills of young people, especially in rural areas. The project has created a vast eco system of ICT-based resources in the rural sector, resulting in the ICT literacy rate increasing from 9.7 percent in 2004 to 22 percent in 2008.

The project's main goal is to bring the benefits of the global knowledge economy to both urban centres and rural areas of Sri Lanka. This was to be achieved through a series of programmes that included strategic policy and regulatory reforms, expansion of the broadband network throughout the country, providing government services online, establishing Nenasalas (telecentres) in remote areas. It also aims to enhance the competitiveness of the country's ICT private sector and opening up opportunities for investment in outsourced IT-Enabled services, and implementing several rural ICT initiatives through grants.

Sri Lanka

	Sri Lanka		Lower-middle-income group	South Asia Region
	2000	2008	2008	2008
Economic and social context				
Population (total, million)	19	20	3,703	1,545
Urban population (% of total)	16	15	41	29
GNI per capita, World Bank Atlas method (current US\$)	880	1,780	2,073	963
GDP growth, 1995–2000 and 2000–08 (avg. annual %)	5.1	5.5	8.3	7.3
Adult literacy rate (% ages 15 and older)	91	91	80	61
Gross primary, secondary, tertiary school enrollment (%)	71	69	64	58
Sector structure				
Separate telecommunications regulator	Yes	Yes		
Status of main fixed-line telephone operator	Mixed	Mixed		
Level of competition ^a				
International long distance service	M	M		
Mobile telephone service	P	P		
Internet service	C	P		
Sector efficiency and capacity				
Telecommunications revenue (% of GDP)	1.9	2.5	3.0	2.1
Mobile and fixed-line subscribers per employee	101	919	685	565
Telecommunications investment (% of revenue)	35.8	12.2	22.6	—
Sector performance				
Access				
Telephone lines (per 100 people)	4.1	17.1	13.6	3.1
Mobile cellular subscriptions (per 100 people)	2.3	55.0	47.0	32.6
Fixed Internet subscribers (per 100 people)	0.2	1.2	5.6	1.3
Personal computers (per 100 people)	0.7	3.7	4.5	3.3
Households with a television set (%)	—	—	—	46
Usage				
International voice traffic (minutes/person/month) ^b	0.8	2.9	—	—
Mobile telephone usage (minutes/user/month)	—	69	328	363
Internet users (per 100 people)	0.6	5.8	13.9	4.7
Quality				
Population covered by mobile cellular network (%)	58	95	77	61
Fixed broadband subscribers (% of total Internet subscribers)	0.5	41.4	40.4	33.1
International Internet bandwidth (bits/second/person)	1	190	153	31
Affordability				
Residential fixed line tariff (US\$/month)	—	4.8	4.8	3.5
Mobile cellular prepaid tariff (US\$/month)	—	2.4	8.4	1.9
Fixed broadband Internet access tariff (US\$/month)	—	21.0	31.4	21.0
Trade				
ICT goods exports (% of total goods exports)	2.7	1.8	19.7	1.2
ICT goods imports (% of total goods imports)	4.2	4.6	17.0	5.1
ICT service exports (% of total service exports)	7.8	15.5	18.6	47.3
Applications				
ICT expenditure (% of GDP)	—	4.3	5.5	4.7
E-government Web measure index ^c	—	0.39	0.29	0.37
Secure Internet servers (per 1 million people, December 2009)	0.3	3.5	1.8	1.3



Sources: Economic and social context: UIS and World Bank; Sector structure: ITU; Sector efficiency and capacity: ITU and World Bank; Sector performance: Global Insight/WITSA, IMF, ITU, Netcraft, UN Comtrade, UNDESA, UNPAN, Wireless Intelligence and World Bank. Produced by the Global Information and Communication Technologies Department and the Development Economics Data Group. For complete information, see Definitions and Data Sources.

Notes: Use of italics in the column entries indicates years other than those specified. — Not available. GDP = gross domestic product; GNI = gross national income; ICT = information and communication technology; and MDG = Millennium Development Goal. a. C = competition; M = monopoly; and P = partial competition. b. Outgoing and incoming. c. Scale of 0-1, where 1 = highest presence. d. Millennium Development Goal indicators 8.14, 8.15, and 8.16.

E-Society and Nenasala Centres

The e-society Development initiative also provides grants of \$5,000 for specific projects from communities or organizations with relevant experience in a Community Assistance Programme. These world bank grants cover many areas including indigenous content,

educational content, ICT-based competitions to promote ICT literacy and support for setting up income generating websites. Some of the Highlights include:

- * Obtaining satellite information in fish movements over the Internet and sending longitudinal and latitude co-ordinates via sms to fishermen;
- * Training for SMEs (Small and Medium Enterprises) open source accounting packages;
- * Creating digital content related to indigenous medicine;
- * English language learning via Satellite;
- * Documenting violence against women using ICT.

One of the ideas auctioned was to create an e-society where communities of farmers, students and small entrepreneurs are linked to information, learning and training facilities. The auctioning was via tele/knowledge centres called Nenasalas (Nena=knowledge+selas=shops), that spawned across the country bringing within easy reach computer technology, the Internet, and IT skills training to many people who had never even seen a computer. Village children get basic computer skills without any payment. Today the Nenasala has more than 500 members.

In addition to running websites provide more facilities for the children to improve their English through the use of internet. They are logged on to their Skype and Google accounts. These children have lots of friends all over the world with whom they chat improve their English.

The Nenasala are also the base for citizen access to:

- Local radio broadcasts of market prices and crop/agricultural information to farmers,
- E-health/telemedicine facilities to rural patients,
- Availability of digital “talking books” (audio books) for the visually impaired and
- Visual hearing aids for the hearing impaired.

Private entrepreneurs, community groups, and even religious establishments of all denominations established Nenasalas using project funds. These Nenasalas, totaling 587 spread across the country, have served as rural outposts for internet safes, computer literacy centres, and bases for rural outsourcing businesses that create jobs in rural areas.

The momentum and pace for creating an e-society did not leave behind the disabled. The most disadvantaged section of Sri Lankan society has benefitted from the most advanced ICT technologies. But recently some of the facilities have been made for the visually disabled in

the university community. The disabled can now make a success of their lives, study about many new subjects and topics as a result of this new technology.

The Government of Sri Lanka aims to provide access to diverse and unrestricted sources of information and means of communication to all citizens through the establishment of Nenasalas. The Nenasala Project is one implemented under the e-Sri Lanka Initiative. ICTA has included it under the “Nenasala” label to introduce several models of the telecentres or knowledge Sri Lanka to spread ICT services to the rural and semi-urban population. Through the establishment of Information and Communication Technologies (ICTs) the democratic processes of the country can be strengthened, the quality of life of the people can be improved, there will be an advancement of the peace process as well as enhancing the social and economic development of the nation.

In addition to providing ICT to rural areas, the main objective of a Nenasala is to assist communities in poverty reduction, social and economic development, and peace building. It is important to note that all the services and support to be provided by the Nenasalas are done in such a way as to aim/guarantee long-term sustainability.

There are different types of Nenasalas that offer different services. These are:

- Rural Knowledge Centres
- E-Libraries
- Distance & e-Learning centre
- Tsunami camp computer kiosks

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Rural Knowledge Centers

These are centers which allow people to have access to many ICT services which include e-mail, telephones, fax, photocopy, internet as well as computer training classes. The centers are known as “Vishwa Denuma Gamata” whose services are long term and are effective with regard to social and economic development, peace building and poverty reduction in rural areas. 100 centres have been created in Grama Niladhari Divisions in the South and North East regions where there was little or no access to information and more will be established in other parts of Sri Lanka.

E-Library Nenasala

E-library is a smaller version of the Rural Knowledge Centres that have telephones and computers with high speed internet to access national, international and local information. Certain services will be free while some are paid so as to maintain the centers

sustainability. Computer based training media is available to use off-line in Sinhala, Tamil and English. The center also has a large e-library of books and periodicals for the use of students of all ages. The e-libraries recruit IT trained clergy as instructors and these libraries will be established at the center of villages.

Tsunami Camp Nenasala

Though the Tnami camps have been reduced the centers that are operating to collect their information for the government. Small computer kiosks have been established in welfare camps for those displaced as a result of the tsunami. The services are free and vital information on health, education, and other relevant content in local languages are provided. Tsunami Voices” database contains information on the victims of the area thus providing information to donors, the Government and well wishers who want to assist the residents of the camps. The database will have information such as what they require to begin a new life and even medical information and ailments.

The ICTA desires to create awareness amongst the people about ICT through these Tsunami Camp Nenasalas. The people learn about its benefits and how it can make a difference. It will provide vocational training to those who may need to look for a alternative employment. Most importantly, this initiative will look into human resources available within the camps themselves and find the personnel to run the centers from amongst the youth in the camps. These young people will be trained by volunteers of Volunteer- Sri Lanka. If these centers are a success, ICTA will considers converting them into permanent Nenasalas.

Areas Covered

According to the Census and Statistics Department, there are 319 District Secretariat Divisions in Sri Lanka, Which are divided into 14,009 Gramasevaka Niladari (GNs) and 38,259 villages. As the objective of the first phase of the Nanasala Project is to establish 100 Nanasalas in the Deep South and North & East Region. The Districts covered under the deep South region include Galle, Matara, Hambantota, Monaragala, Ratnapura and Badulla. The Districts covered under the North & East Region include Jaffna, Killinochchi, Vavuniya, Mullaitivu, Polonnaruwa, Anuradhapura and Trincomalee.

E-Knowledge and job creation

Other elements of the project are e-Knowledge and ICT for private sector development and Jobs. E-Knowledge focuses on building the country’s human capacity in ICT. Specialized training modules on network administration, advanced technical skills and IT management

are now incorporated into university curricula, certification programmes, distance learning, and MBA programmes.

Interims of job creation, over 45,000 new jobs have been created in Sri Lanka's Information Technology (IT) and Business Process Outsourcing (BPO) sector since 2005. IT Enabled Service exports have already become the 5th largest foreign exchange earner in the country with US\$250 million in 2008. By 2015, it is expected that the IT/BPO industry will be the country's number one export revenue earner with exports of \$2 billion and 103,025 jobs.

Sri Lanka is also being recognized as an emerging centre of excellence for Financial and Accounting Outsourcing. Today Colombo ranks 5th in the world in this area of expertise, and, most recently, AT Kearney (2009) reported that Sri Lanka moved 13 points on the off-shoring index, the biggest improvement amongst 50 countries.

Sri Lanka's information and communications technology workforce has doubled in the past five years as the island ramps up training and investment to make the sector a key export industry.

A new survey said the number of ICT sector jobs increased by 100 percent to over 62,000 this year from 30, 120 in 2006. Over 50,000 people are estimated to have been employed in the IT sector by 2010. The national ITC workforce survey by the state-run Information and Communication Technology Agency covered 80 state institutions, 325 private sector firms, 30 BPO (business processing outsourcing) firms, and 75 IT training institutes. Cannot find the report on the Dept. of Census and Statistics website nor at ICTA website. Hope it will be posted soon. Until then, a news report is all there is.

E-Government

E-Government - Bringing government services closer to the people from birth to death, and practically everything in between, sums up all the services available through a clear A - Z index at the online Government Information Centre. For Example, it shows the steps needed to get the birth of a child registered, even if the birth happened in a remote village in Sri Lanka.

The e-Government programme is aimed at making access to government services much more efficient through streamlined ICT-eagled processes. When the Indian Ocean tsunami hit Sri Lanka in 2004, hundreds of thousands of lives and homes were washed away along with their

birth, marriage, death certificates and identity cards. Rebuilding lives necessitated speedy access to getting replacement for the valuable documents lost.

ICTA responded by developing low-cost applications in several provisional administrative offices that allowed survivors to easily search a central digitized data repository to retrieve birth certificates within 10-30 minutes without having to travel to the capital Colombo. E-Government software applications now include e-population (for birth, marriage and death registrations), e-foreign employment bureau (a database for jobs postings, immigration and emigration), e-pensions etc.

ICT in the Syllabi

Sri Lanka had paid keen attention for the school level ICT education, not only for the urban schools but also for the rural schools. The facilities were provided as much as possible but not enough for the fulfillment of the whole country. The big problem is that, although they have the facilities the lack of teachers who are capable enough for ICT teaching. The teacher training programmes are also provided in the mean time. The teacher student competency has come to the certain extent.

In this information era, curriculum developers, considered global changes and the demand of stakeholders in education in Sri Lanka. This knowledge-based economy is continuously and rapidly changing the world, where people often change their jobs and the way of life. In this context, we have to bridge the gap between global requirements and local standards through the curriculum, providing transferable skills and competencies related to the world of work. Especially the enterprise and entrepreneurial skills of students should be developed.

The students should learn at school a wide variety of competencies for different needs of life in a changing world. They should have various views and different ways to continue studies and proceeded to employment.

Information and Communication Technology (ICT) has become the state of the art technology of the contemporary world. Every sector of the economy is forced to use this technology to make their work effective and efficient and thereby maintain a comparative edge. This has changed the types of skills and knowledge needed in the world of work.

Since Sri Lanka is in the early stages of introducing ICT to lower grades, the present syllabus does not demand any ICT knowledge as an entry requirement. Therefore, this syllabus is

intended to introduce ICT/computer science as a technical subject to be offered at the G.C.E. (O/L). Objectives of this syllabus, are to develop the competencies to utilize the ICT tools and to build a basic theoretical base for the student to act as a foundation to pursue higher studies in ICT.

The present infrastructure and human resource development (teacher training) facilities are not sufficient to introduce this ICT syllabus. However, it is supposed that the required facilities for schools will be fulfilled in the near future by various donor agencies like ADB/SEMP, GEP,WB, etc. Sustainability of this syllabus depends on the continuous working conditions of ICT laboratories and the frequent provision of updated knowledge to the ICT teachers. The content of this syllabus has to be updated regularly to match the requirements of the rapidly changing technological world.

The minimum proficiency expected could be assessed and evaluated throughout the course of study. The practical components of this ICT syllabus provides a good opportunity for school based assessment. At the same time a fair percentage of content could be incorporated at national level evaluation.

The teaching/learning of this syllabus could partly be carried out in the English medium. However, a bilingual method should be used so that the terms of new ICT concepts are given in both media, the mother tongue and English. Very recently Tamil students also can learn their ICT in their mother tongue. But the Department of Economic, university of Colombo ,has done a research related language and ICT learning. According to the research most of the Tamil students responded that they need to learn ICT in Tamil medium, but majority of Sinhalese students needed in English medium. Tamil students had said that they need to keep their identity with their mother tongue.

Distance & e-learning Centres

These centers will be established in key urban areas outside the Colombo area, the Jaffna University and the South Eastern University, Oluvil campus. This center includes all infrastructure facilities such as a video conferencing room, multimedia computer laboratory and a playback room. The intention of the Centre is to cater to a larger group of users

providing new information, sharing and learning opportunities. This is done through the establishment of an interactive, multi-channel network linking to existing domestic e-learning networks, and global networks for distance and e-learning, such as the Global Development Learning Network.

The Open University of Sri Lanka is the prominent centre for e-learning in University level in Sri Lanka other than the ICTA project. The university of Colombo ELTU- English Learning Teaching Unit and the faculty of Management, Institute of Human Resource Management Agency also have started e teaching programmes recently.

The Future of ICT in Sri Lanka

After the civil war three decade long, Sri Lanka has able to provide the initiative ICT facilities to the war tone areas. The schools get their computers and teachers. E governing servicers are expanded in each and every corner of those areas. Students are giving more facilities in computing. Farmers are improving to day to day activities with the centers. When the new job recruitments ICT ability is must.

Over the years, e-Sri Lanka has endured and overcome many implementation challenges and has been both resilient and responsive to the demands of multiple stake-holders in a challenging implementation environment. By successfully adapting to changes to implement e-Sri Lanka in what can be called a turbulent environment, ICTA is demonstrating a replicable true multi stakeholder model, going forward, the project is expected to focus on inclusive growth by taking dividends of ICT to northern and eastern areas of the country.

The focus will be on replicating ICT success in those areas and deploying several quick-win low cost-e-Government solutions to improve efficiency of service delivery in previously conflict affected areas. The follow-up efforts are likely to focus on the areas of devolution, governance, and innovation for inclusive growth.

Ideas are thus being auctioned, local and global Knowledge harnessed, dividends distributed to citizens, services being re-engineered. Post conflict Sri Lanka is well poised on the electronic bridge to make the leap that will take it to a middle income country in peace.

References

Information and Communication Technology Agency (ICTA)

www.icta.lk

National Institute of Business Management (NIBM)
www.nibm.lk

Sri Lanka Institute of Information Technology (SLIIT)
www.sliit.lk

Vocational Training Authority of Sri Lanka (VTA)
www.vta.lk

Sri Lanka Institutes of Development Administration (SLIDA)
www.slida.lk

E-SOFT Computer Studies (ESOFT)
www.esoft.lk

Institute of Data Management (IDM)
www.idm.lk

Informatics Institute of Technology (IIT)
www.iit.lk

<http://icta.lk/>