Information and Communication Technology Agency of Sri Lanka (ICTA)

e- Sri Lanka Development Project

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e GOVERNMENT SURVEY - FINAL EVALUATION

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Executive Summary

1. The Government of Sri Lanka (GOSL), in 2005, launched the e-Sri Lanka Development Project[1] with the objective of using Information and Communication Technology (ICT) to foster social integration, peace, economic growth and poverty reduction. It is one of the world's pioneering ICT development initiatives. The principal development outcomes of the project were anticipated to be: (i) more effective, citizen-centred, and business-friendly government; (ii) empowerment of the rural poor, disabled, women, and youth through increased and affordable access to information and communication tools; (iii) develop leadership and skills in ICT; and (iv) employment creation through the ICT industry, ICT-enabled services, and enhanced competitiveness of user industries and services.

The Re-engineering Government Programme is a major component of the e-Sri Lanka Development Project that aimed to improve internal efficiency, transparency, effectiveness, and quality of services. It also aimed to expand already identified fundamental governance and public management reforms by re-engineering public sector work processes for strategic use of ICT. Re-engineering Government Program was an integrated effort of the six main components of the e-Sri Lanka Government Program which operate interdependently. The efforts integrate the activities in building information infrastructure and an enabling environment, developing ICT human resources, modernizing government and delivering citizen services, leveraging ICT for economic and social development and promoting Sri Lanka as an ICT destination.

2. This evaluation of the e-Government Program under e-Sri Lanka Development initiative has reveled some of the following major outputs toward its overall objectives:

- ICTA took the leadership in formulating the "e-Government Policy" that was adapted by the Cabinet of Ministers in December 2009. This policy was instrumental in preparing regulatory frameworks that enabled the use of electronic transactions and payments within the state sector, Lanka interoperability framework for standardization and secure data sharing, and the local language standards that enable trilingual content in government data and services.

- Under the e-Government infrastructure in the areas of connectivity, accessibility and content, the Lanka Government Network (LGN) connects nearly 500 central and provincial government organizations and their services into a single networked platform. The infrastructure and services of the LGN are supported by several related modules that include the Lanka Gate Infrastructure comprising of the country portal (www.srilanka.lk), Internet and mobile payment gateway (LankaGov Payment Service), SMS Gateway (GovSMS), and the government Internet Data Centre. At present LGN hosts several e-Government services which include the e-population registry, e-pensions, and e-divisional secretariat project.

- ICTA then created a shared cloud based infrastructure referred to as the "Lanka Government Cloud (LGC)" to provide hardware and software as a service to many government organizations that were not mandated to have their own infrastructure. At present nearly 200 virtual server spaces are provided to about 40 different projects under LGC.

- One of the major achievements in the LankaGate initiative towards making e-Government more accessible to the citizens through the country portal hosted at http://www.srilanka.lk Its a trilingual website that provides a convenient single point access to all government services and information. As at present there are over 30 transactional and information services including payment services (offered through the Government Payment Gateway) that are accessible through the Lanka Gate

[1] World Bank (2004), Project Appraisal Document: e-Sri Lanka Development Project, Report No. 28979-LK.

country portal. In addition, over 135 e-Services are provided by a number of government organizations ranging from ministries, departments, to statutory boards via e-Services and m-Services offered by various government institutions that are supported by ICTA. These services are indexed and listed in the government web portal (www.gov.lk) providing an easy access point to all available services. A major achievement was the e-Revenue License, the first transactional e-service, created the path to accept electronic payments for government services, which was initially implemented in the Western Province and is now replicated in both the Southern and Sabaragamuwa Provinces. In addition to the above, capacity building opportunities were provided for over 16,000 government officers by ICTA enabling them to successfully implement the IT systems introduced. In addition, digitizing 20 million births, marriage and death certificates are few achievements under this component.

- The ICTA initiated websites of the Agriculture Department provides Agriculture Information Management System (AgMIS), http://www.agridept.gov.lk/index.php/en/farmer-database, which is a farmer database consisting of the information on commercially cultivated food crops, their extents, production or yield forecast, including the contact details of the farmers and officers involved. It is expected that this mechanism may help farmers and entrepreneurs to minimize marketing problems and also this database may assist government officers and policy makers to get correct decisions in food crop sector especially for planning cultivations and exports and imports of food crops and related items. In addition, the website of the Agriculture Department provides information on daily and weekly wholesale prices on rice, subsidiary food crops and vegetables through Hector Kobbekaduwa Agrarian Research Training Institute.

- Likewise, the website of the Ministry of Public Administration, which was initiated by ICTA and now maintained by this Ministry also provide substantial volume of services to a larger number of public sector employees in respect of transfer opportunities and downloading circulars from this page. The transfer information in the public sector provides opportunities for the public sector employees transparently apply for suitable transfers.

- Another achievement in the public service initiatives taken by ICTA is the Visa Online which runs on ICTA IPG and our IS assurance that has more than one million users per year.

- In April 2013 total cumulative usage of government websites was over 800,000 while the usage of GIC information services had reached the 3,000,000 mark. In addition to these, the GIC call centre has serviced nearly 5,000,000 requests from the general public and approximately 5,000 callers were serviced in a day. The number of user registrations at Lanka Gate country portal was more than 20,000 by April 2013. On the mobile domain there were over 105,000 SMS based transactions and over 33,000 downloads on the Android Apps.

- As in any ICT development initiative, advancements Sri Lanka is making towards ICT enabled services, is not without vulnerabilities towards risks, threats and attacks in the cyber space. ICTA have taken initiatives to setup a separate entity dedicated for ensuring cyber security under its umbrella. Referred to as the Sri Lanka Computer Emergency Readiness Team (SLCERT) this organization provides a range of services to both the government institutions as well as the general public. Achievements of SLCERT over the past few years have earned them the reputation and designation as the “National CERT” of the country.

- In order to receive the true benefits of e-Government, the public must be empowered with necessary access facilities to e-Services and necessary ICT skills in using them. Under the e-Sri Lanka project this aspect was covered through the establishment of a

network of "Nenasala" tele-centres throughout the island. The initial plan was to establish 200 centres but by 2013 this target was surpassed by more than 350% reaching a target of 741 centres. Of these centres nearly about 75% remained actively operational and 66% financially self-sustaining.

- Another component of the e-Sri Lanka programme, the eSociety Development Initiative combined a competitive transparent grant-making programme with local content development. It provided multi-channel assistance ranging from community assistance to community based organizations to partnership assistance to organizations with higher capacity in the execution of innovative and replicable projects.

- A remarkable and innovative activity of ICTA was the initiation of the eParticipation, a platform to discuss the e Government policies for effective and efficient implementation of the eSri Lanka Programme. This forum consists of stakeholders representing both public and private sector and IT experts.

3. ICTA commissioned GreenTech Consultants (Pvt) Ltd, Colombo through a competitive bidding process to undertake the e-Government Survey- Final Evaluation. This Evaluation was conducted as part of the ICTA Monitoring and Evaluation (M&E) programme to measure the progress of achieving results of the e-Government Program of which the main objective was to gather data required to assess the internal efficiency of the government and effectiveness of providing public services to the citizens and business in terms of time spent and cost incurred by citizen to obtain public services and the level of satisfaction. The primary tool used for collection of data in this evaluation is a field survey conducted in selected government organizations. Eleven (11) ministries /department providing key government services and a representative sample of Divisional Secretariats were selected. The government organizations were selected in line with the previous survey conducted in both 2007 and 2010. This was to ensure consistency and to enable necessary comparisons on progress where possible among the same Ministries and Departments. During the survey, face to face interviews were conducted with 400 visitors to government organization by using a structured questionnaire at the selected government organizations with the randomly selected sample of citizens who came to obtain different public services. The questionnaires were mainly focused to assess time taken, cost incurred in obtaining different public services and the level of satisfaction of citizen. To understand the perspectives of the government officers, Key informant interviews were also conducted with randomly selected government officials by using a semi structured questionnaire.

Some key findings of the questionnaire survey;

- ICT policy compliance of Sri Lanka is approximately 70%.
- Majority of visitors were able to obtain a "successful" service (84%) whilst 11% and 5% of the visitors were "partly successful" or "not successful", respectively.
- 87% visitors were satisfied with the overall government services obtained, whilst 13% visitors were not satisfied with the government services obtained.
- The visitors have spent an average time of 83 minutes to travel up and down to obtain public services.
- The visitors waiting time in the queue amounts to 12 minutes.
- The service processing time is 16 minutes per service.
- Hence total time spent for obtaining public services according to the 2013 survey was 124 minutes against 175 minutes in 2011, which indicates a reduction of 29% and an increase of satisfaction by 17%.
- The average distance travelled up and down is about 22km by a citizen to obtain public service.
- The citizens have visited average of 1.3 visits to complete the services.
- The average number of institutions visited is 0.5 with maximum value 2.3 institutions.
- The number of counters visited by a citizen to obtain a public service was 1.3.

- The average total cost to obtain a service is Rs. 747, including service fee, travelling and food.
- 37% of the citizens are aware of the websites of the surveyed organizations; 54% have a positive perception of these websites.
- 42% citizens are aware of the Sri Lankan government country Portal and 76% of them have used it.
- 61% of the citizens were aware of the electronic public services and 56% used them.
- 27% citizens were aware of the mobile phone applications and 11% have used it.
- 48% of the citizens were aware of the government organization websites and 39% have used them.
- Only 15% of the citizens were aware of online purchases/payments through Lanka Gate 2% have used them.

4. In addition, the following analysis was carried out using secondary data mainly with the aim of generating background and supplementary information on the e-Government: 1) analysis of Network Readiness Index (NRI); 2) UN e-Govenment Survey data to understand the overall e government development status and identify best practices); 3) content analysis of the government web sites to understand the situation of providing information to citizen through web sites. The sample used for the web content analysis included 39 government organizations.

Some key findings of the web content analysis are;

- the layout and appearance of the surveyed websites were at a higher level in terms of their usability aspects, in most of them
- Navigation structure and capability of the websites surveyed during this study was at remarkably good levels except for few isolated cases.
- Some websites included in this survey needs improvements in terms of their content uploading, where either the full content was not available under the given links, or the content included was not relevant to the context of the hyperlink or the website
- Lower page performance due to the inappropriate formatting or large size of the downloadable file.

It was noted that the Government Organizations websites have highly usable structure, information organization and technical features supporting usability by the general public irrespective of the ICT literacy, mode of access and language barriers. However, regular updates to contents remain at a poor level with significant number of websites in the sample not being update for long periods.

Another finding is that usage of the e-government services is low. This resonates with the UN e-Government Survey 2012 report which states that the level of e-government usage is generally low, even in the most advanced countries. In EU 27 countries, the average usage rate is 32 percent, and in OECD countries, the average usage rate in 2010 was only around 40 per cent.

The survey indicates that awareness of e-services is extremely low and so is the usage. However, there is high satisfaction with regard to the efficiency and effectiveness of the government services provided. Further there is a significant reduction over time in time spent for obtaining public services by 29% and increase in the level of satisfaction by 17% compared with the results of the survey carried out in 2010. This can be attributed with several interventions already made under e Sri Lanka Development projects. Lanka Government network under which now cover 500 government organizations are connected has contributed significantly towards achieving the efficiency and effectiveness.

5. The findings of this survey recommend the following:

- Create effective awareness to promote the usage of electronic public services.
- Regular dialog with government officers of the Additional Secretary level to follow up of successful implementation of LGN.
- Further strengthen the capacity of government staff on basic IT, ITR technical skills and change management aiming efficient and effective government services.
- Follow up the usage of Lanka Government Network, as it is the most critical infrastructure in delivering government services
- At present, the numbers of services available in LGN are limited. Hence, number of applications/ databases need to be developed and introduced.
- The existing Computer Literacy Rate of 40% should be increased by revisiting the 'Nenasala" program; encourage computer education facilities through incentives, while giving prominence to the North and Eastern provinces.
- The government organizations web sites should be updated regularly according to the guideline of the e-Policy.
- The most relevant and mostly used government services should be converted to e-services immediately; feasibility studies for each service should be conducted prior to converting them by identifying appropriate baseline parameters that will make them more convenient to visitors.
- E-Services should have a well planned awareness and propaganda campaign to inform the citizens about the e-services and its benefits. This would increase awareness among users of government services, create a culture of e-searching for government services resulting in phasing out contacting government in person.
- To set up a centralized mechanism to monitor all government websites with information updates and take necessary remedial action.
- Strengthen monitoring and evaluation unit to implement follow up visits to government organizations as necessary.
- Establish strong working relations and maintain dialog with government organizations.
- It is necessary to prepare a strategic plan to develop a need based e-services to support the internal efficiency of the government organizations, promote interoperability and promote interagency data sharing with the follow up of LGN usage and upgrading.

Chapter 1: Introduction

ICTA commissioned GreenTech Consultants (Pvt) Ltd, Colombo to undertake the e-Government Survey (Final Evaluation) relating to the, re-engineering government component of the e-Sri Lanka Development Project. Findings of the survey are presented in this report incorporating the status of the citizen satisfaction towards obtaining public services performed by the government of Sri Lanka.

This chapter covers the background information of the survey, an introduction to e-Sri Lanka Development Program and its six components, with special reference to the Re-engineering Government Program.

1.1 e-Sri Lanka Development Programme

The Government of Sri Lanka (GOSL), in 2005, launched **e-Sri Lanka Development Project (the Project)**[2] a national development initiative, with the objective of using Information and Communication Technology (ICT) to foster social integration, peace, economic growth and poverty reduction. It is one of the world's pioneering ICT development initiatives.

The principal development outcomes of the project are expected to be:

i. more effective, citizen-centred, and business-friendly government;

ii. empowerment of the rural poor, disabled, women, and youth through increased and affordable access to information and communication tools;

iii. developed leadership and skills in ICT;

iv. Employment creation through the ICT industry, ICT-enabled services, and enhanced competitiveness of user industries and services.

The e-Sri Lanka initiative vis a vis, to reap the benefits of ICT while raising living standards and pursuing the Millennium Development Goals (MDGs), has been the objective of the e-Sri Lanka Program. It intends not only to use ICT to develop the economy and alleviate poverty, but also to extend the benefits of ICT to impoverished regions by inspiring and implementing a number of initiatives. These attempts are primarily in, developing e-government solutions, creating adequate human resources for ICT, building a dependable information infrastructure, and exploring global market opportunities for local software development initiatives, enabling e-Sri Lanka to bring connectivity to people in underdeveloped regions throughout the country to increase connectivity, ICT development, and lastly, in Sri Lanka's quest to embrace the knowledge economy.[3]

1.2 Vision of e-Sri Lanka Development Program

Enhance growth, employment, and equity through i) affordable access to means of information and communication; ii) access to and use of public information and services on-line by citizens and businesses; and (iii) competitiveness of IT and IT enable industry.

Project description: e-Sri Lanka Government Program has six main components operating interdependently. ICTA is implementing the e-Sri Lanka initiative, which encompasses building information infrastructure and an enabling environment, developing ICT human resources, modernizing government and delivering citizen services, leveraging

[2] World Bank (2004), Project Appraisal Document: e-Sri Lanka Development Project, Report No. 28979-LK.
[3] World Bank (2008), Building the Sri Lankan Knowledge Economy, South Asia Region, p. 31.

ICT for economic and social development and promoting Sri Lanka as an ICT destination. The brief descriptions of these components are;

1.2.1 Policy, Leadership & Institutional Development

Create the enabling environment including the enactment of regulatory reform together with the acceleration of enabling laws for e-government and e-commerce and promote public - private partnerships. The government has already formulated the national ICT Policy, ICT action plan, and necessary legal framework in consultation with Administrative Reform committee. In addition, an Interoperability Framework; a standard to secure data sharing, Local Language Initiative to enable trilingual web sites and data bases, a path for transactional e-services for government services, ICT Road map for the Implementation of e-Government Solutions, Information Security Policy for Government Technical Policies and Procedures in the Implementation of e-Government Solutions, were also formulated under this component.

1.2.2 Information Infrastructure

Build the necessary connectivity infrastructure throughout the country to connect villages and towns to the world. This component covers all the activities aimed at providing citizens, affordable access to information, and modern communication and electronic services at any given time. Currently, Lanka Government Network is connected to more than 550 government and provincial organizations, Lanka Gate infrastructure comprising the Country Portal is trilingual, an internet and mobile payment gateway (Lanka Gov Payment service, SMS gateway, LGN Certificate Authority and integration of e-services, dedicated Government cloud, and 730 Nenasala Telecenters, have been established.

1.2.3 Re-engineering Government

The Re-engineering Government Programme is a major component of the e-Sri Lanka Development Project that aimed to improve internal efficiency, transparency, effectiveness, and quality of services. It also aimed to expand already identified fundamental governance and public management reforms by re-engineering public sector work processes for strategic use of ICT. One of the main features of this program is that the process is designed around the client rather than the organization. Accordingly, e-Services, m-Services, and web presence have evolved at fast pace. 34 transactional and informational e-services are provided through the country portal, whereas over 400 government web sites and a popular Government Information Center provides over 3000 services and digitizing 20 million birth, marriage and death certificates are few achievement under this component.

1.2.4 ICT Human Resource Development

Develop human resources at multiple levels to support national development initiative. This program too supports the re-engineering program by equipping public service employees with ICT leadership and management skills and competencies. This program also provides education and training opportunities for the citizens through the Nenasala Tele Centers and helped to increase the computer literacy rate from 8% in 2005 to 35% in 2012.

In addition educational and training programmes such as, Postgraduate Diploma in e-Government, e-Government Workshops for CIOs, MBA in e Governance, ICT HR Capacity Building for Government Officers, ICT Training Need Analysis Tool Kit, ICT Foundation for Government Officers. ICT Awareness for Government Officers, Advanced Technical Training for Government Officers, ICT Certification for Government Officers, have been conducted.

1.2.5 ICT Investment & Private Sector Development

Promote Sri Lanka as an ICT destination renowned for producing best-of-breed in niche global markets through the use and adoption of technology, and support public - private

partnerships in ICT services. This program has twin objectives; contributing sustainable growth of the economy, and employment creation, in Sri Lanka.

1.2.6 e-Society

Bridge the digital divide with applications aimed at poverty reduction and social development. This program seeks to use ICT as a lever for socio economic development. The overall objective of this program is to promote the innovative use of ICT to meet social and economic needs of the most vulnerable communities in Sri Lanka.

All program components interdependently support each other with the intention of formulating an e-Government concept in Sri Lanka. e-Laws. ICT Policy and legal framework, ICT leadership through CIOs, private sector active participation in ICT, rural community participation in ICT through e-Societies, and Nenasala Telecenters, have contributed substantially in the initiation of e-Government Program in Sri Lanka.

The Re-engineering Government Program is the major component of the e-Sri Lanka Development Project and pursues major improvements in GOSL's efficiency, transparency, effectiveness, and quality of services. Strategies adapted in implementation the programme;

I. client-focused rather than organization-centred processes;

II. government accountability for service level standards to its clients;

III. electronic sharing of data across agencies;

IV. separation of service delivery (front-end) from transaction processing (back-end) functions;

V. always-on, user-friendly, distance-neutral information and service facilities to citizens and businesses;

VI. transparency in government operations;

VII. Selective unbundling and privatization of selected activities that can be more efficiently and effectively performed by the private sector.

1.3 Achievements in Information and communication technologies in Sri Lanka

1.3.1 ICT Policy and legal framework

Over the recent past ICT development and the digitization of government services have been a key focus in the government policies. The government's ICT development strategy has centered around the flagship of e-Sri Lanka initiative, which is being implemented as part of the government's national policy framework documents, namely the "Mahinda Chinthana" (2006) and the current "Mahinda Chinthana –Idiri Dakma (Vision for the Future)" (2010). The ICTA has taken the leadership in formulating the "e-Government Policy" of the country through a combined multi-stake holder dialog and public-private sector participation. This policy framework has been approved and adapted by the Cabinet of Ministers in December 2009. Furthermore ICTA has been instrumental in preparing the regulatory framework that enabled the use of electronic transactions and payments within the state sector. With the support from the Central Bank of Sri Lanka and the Ministry of Finance, necessary Circulars were issued to all public sector organizations in 2010 enabling them to accept electronic payments and digitally signed documents during their services to the public. Many observers view this circular as the primary instrument that made, end-to-end public sector digital services such as the e-Revenue license system and the e-Visa (Electronic Travel Authorization) system, successful.

No e-Government policy can succeed without the necessary support from legal and administrative frameworks. The government empowered ICTA as the authority to draft several ACTs to bring the necessary legal reforms to support the transactional services under the e-Government initiatives. As a result, the Electronic Transactions Act No 19 of 2006, the Computer Crimes Act No. 24 of 2007, the Payment & settlement Systems Act (2005), and the Payment Devices Frauds Act (2006), are now enforced within the legal system of the country.

1.3.2 ICT Infrastructure Development

ICTA has spearheaded the development of e-Government infrastructure in the areas of connectivity, accessibility and content. The most enabling achievement in this area is the Lanka Government Network (LGN) together with Government Internet Data Centre and its supporting infrastructure components. The LGN connects nearly 500 central and provincial government organizations and their services into a single networked platform. The infrastructure and services of the LGN are supported by several related modules that include the Lanka Gate Infrastructure comprising of the country portal (www.srilanka.lk), Internet and mobile payment gateway (LankaGov Payment Service), SMS Gateway (GovSMS), and the government Internet Data Centre. Operation of the LGN is also supported by a number of policy frameworks and standards drafted and implemented by the ICTA. These include the e-Government policy framework, Lanka interoperability framework for standardization and secure data sharing, and the local language standards that enable trilingual content in government data and services.

At present LGN is the host for several e-Government services that include the e-population registry, e-pensions, and e-divisional secretariat project, and the Birth Marriage and Death (BMD) certificate project, which include digitization of over 20 million birth, marriage and death, certificates. The LGN infrastructure provides over 30 transactional and informational e-services through the country portal and over 135 interactive e-Services through websites. It hosts over 400 government websites inclusive of the popular Government Information Center covering over 3000 services.

The LGN was initially implemented with financial support from the government of South Korea and was managed my Samsung Networks under the same contract. In order to sustain its development and operation beyond the initial contract period the ICTA established a separate fully own subsidiary named the “Lanka Government Information Infrastructure (LGII) Pvt Ltd” through a proposal submitted to the Cabinet of Ministers by His Excellency the President. The new company is now fully operational and is responsible for the developments, operations and maintenance of the LGN infrastructure.

As many government organizations became digitally enabled investing in infrastructure such as hardware and software resources the question of their overall productive and the return on investment started to be of concern. Similar to many other countries many of these infrastructure were not fully utilized and were running well under their capacity. This raised the need for a reliable, secure, and scalable infrastructure that can be cross shared among many organizations. The ICTA responded to this need by creating a shared cloud based infrastructure referred to as the “Lanka Government Cloud (LGC)”. The new infrastructure offered hardware and software as a service to many government organizations that were not mandated to have their own infrastructure. At present this infrastructure provids nearly 200 virtual server spaces to about 40 different projects.

1.3.3 Accessibility to e-Government Services

One of the major achievements in the LankaGate initiative towards making e-Government more accessible to the citizens is the country portal hosted at http://www.srilanka.lk This truly trilingual website provides a convenient single point access to all government services and information. Users need, only a single registration and a single sign-on at this gateway to access and obtain any of the required services in a seamless and unified manner. As at

present there are over 30 transactional and information services including payment services (offered through the Government Payment Gateway) that are accessible through the Lanka Gate country portal. In additional to these there are also a large number of e-Services and m-Services offered by various government institutions through their websites that are supported by ICTA. These services are indexed and listed in the government web portal (www.gov.lk) providing an easy access point to all available services. As at present there are over 135 e-Services[4] provided by a number of government organizations ranging from ministries, departments, to statutory boards. Apart from the web based e-Services some organizations also offer m-Services that are available through mobile platforms. The ICTA has provided the necessary infrastructure for these services through its government SMS gateway (GovSMS) and through Apps that run on the Android platform.

The websites of the Agriculture Department provide Agriculture Information Management System (AgMIS), http://www.agridept.gov.lk/index.php/en/farmer-database, which is a farmer database consisting of the information on commercially cultivated food crops, their extents, production or yield forecast, including the contact details of the farmers and officers involved. It is expected that this mechanism may help farmers and entrepreneurs to minimize marketing problems and also this database may assist government officers and policy makers to get correct decisions in food crop sector especially for planning cultivations and exports and imports of food crops and related items. In addition, the website of the Agriculture Department provides information on daily and weekly wholesale prices on rice, subsidiary food crops and vegetables through Hector Kobbekaduwa Agrarian Research Training Institute.

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Another achievement in the public service initiatives taken by ICTA is the Visa Online which runs on ICTA IPG and our IS assurance that has more than one million users per year.

The government Information Centre (GIC) is another mechanism implemented by the ICTA to make government services and information more accessible to the general public. These services provide multi-modal interface that include voice (telephone), web, email, and SMS. At present there over 3000 information services available through the GIC on a 24x7 basis.

Statistics[5] shows that the e-Services and m-Services offered through the above initiatives are becoming popular among the general public at an exponential rate. By April 2013 total cumulative usage of government websites was over 800,000 while the usage of GIC information services had reached the 3,000,000 mark. In addition these, the GIC call centre has serviced nearly 5,000,000 requests from the general public, approximately 5,000 callers were serviced in a day. The number of user registrations at Lanka Gate country portal was more than 20,000 by April 2013. On the mobile domain there were over 105,000 SMS based transactions and over 33,000 downloads on the Android Apps.

1.3.4 Ensuring Safety in Cyberspace

Common to any system that is online in cyberspace the online e-government services and their users are also vulnerable to risks, threats and attacked on the cyber space. These risks become even more significant as the society in general moves more towards cyberspace, with increasing Internet usage or number of applications that are not necessarily limited to trusted services offered by the government organizations. In responding to these threats ICTA took the initiative to setup a separate entity dedicated for

[4]Source: List of e-Services available at ICTA website http://www.icta.lk/en/eservices.html
[5]Source: web and service usage statistics provided by ICTA

ensuring cyber security under its umbrella. Referred to as the Sri Lanka Computer Emergency Readiness Team (SLCERT) this organization provides a range of services to both the government institutions as well as the general public. These services include, conducting vulnerability assessment in government websites and related infrastructure, investigating and assisting organizations and general public in cyber security related incidents, and conducting awareness programmes and workshops on cyber security. Achievements of SLCERT over the past few years have earned them the reputation and designation as the "National CERT" of the country.

1.3.5 Social benefits and capacity development

In order to receive the true benefits of e-Government, the public must be empowered with necessary access facilities to public services and necessary ICT skills in using them. Under the e-Sri Lanka project this aspect was covered through the establishment of a network of "Nenasala" tele-centres throughout the island. The initial plan was to establish 200 centres but by 2013 this target was surpassed by more than 350% reaching a target of 741 centres. Of these centres nearly about 75%% remained actively operational and 66% financially self-sustaining.

The Nenasala initiative has been the main catalyst for ICT empowerment, especially in the rural areas. The national ICT literacy rate has seen a sharp increase from merely 8% in 2005 to over 40% in 2012. At present Nenasala user communities consist mostly of the youth population and have become the breeding grounds for ICT enabled entrepreneurship in the rural sector. The programme has also established partnerships with Multinational companies such as Microsoft, National companies such as MAS holdings, and NGO/IGOs such as Sanasa, Sarvodhaya, IDRC and UNDP, for the development of ICT skills in the rural and less privileged sectors. The programme has been recognized by several global forums such as the e-India, e-Asia, World Bank Institute Innovation Fair, FutureGov, and Global Knowledge Partnership.

Another component of the e-Sri Lanka programme, the eSociety Programme combines a competitive transparent grant-making programme with local content development. It provides multi-channel assistance ranging from community assistance to community based organizations to partnership assistance to organizations with higher capacity in the execution of innovative and replicable projects. The programme also provides replication assistance for successful innovations and products to reach new geographies and communities.

The programme has also received number of international awards and recognitions including three World Summit Awards, several FutureGov awards, and the World Bank Innovation Award. Recently a Nenasala Tele-Centre operator, Mr Sooriyawewa, received the "Best Tele-Centre Manager" award at the global Tele-centre Award ceremony in Spain conducted by the Telecentre.Org.

ICTA has initiated eParticipation, a platform to discuss the e Government policies for effective and efficient implementation of the eSri Lanka Programme. This forum consists of stakeholders representing both public and private sector and IT experts.

The initiatives taken through the above programmes have been a significant success in improving not only the general ICT skills of the society but also in improving its ICT development index in the global perspective. The Networked Readiness Index (NRI) of Sri Lanka improved from 72 percentile ranking in 2005 to 47 percentile ranking in 2013 with the 2011 report identifying the country as "among the ten most dynamic countries that have progressed the most since 2005".

1.3.6 Economic benefits

During the past few years ICTA has made significant progress in its work to enable Sri Lanka to project itself as a preferred destination in the IT-BPO sector. As of 2013 the export

revenue from this sector is estimated to be over US$ 500 million at growth rate of almost 22% per annum. Combined with the domestic market the total revenue is projected to be over US$ 1 billion. The sector has also generated over 60,000 direct high-paying employment opportunities with related indirect employment being well over 180,000. These developments in the recent past have made Sri Lanka to be awarded the prestigious "outsourcing destination of the Year" award by the National Outsourcing Association (NOA), UK for the current year. Furthermore, the country is ranked in the top 10 most improved countries for doing business in 2013, and has also been ranked among the top 25 global outsourcing destinations by AT Kearney, and among top 30 outsourcing destinations by Gartner.

1.4 Conceptual Model of the Study: Sri Lanka e-Government Benchmarking Model

Towards arriving at a conceptual model for the study, a review of literature on e-government was undertaken in the previous GOVS survey in 2011 . Among the models reviewed are;

I. Richard Heeks' Full Model of e-Government Systems (Onion Ring Model)[6]
II. Design—Reality Gaps in e-Governance Projects[7]
III. Wackwella Gamage & Shahani Weerawarana's Conceptual Framework[8]
IV. Richard Heeks' illustrates the e-government value chain[9]
V. Jeremy Millard's Generic Impact Analysis and Measurement Reference System[10]

As a result of the study of the conceptual models the GOVS – 2011 has evolved the Sri Lanka e-Government Benchmarking Model. **Appendix 1**

In addition, the Results Chain for Results-Based Management[11] was also reviewed. It was also observed that the OECD had developed the model, as shown in **Appendix 2,** which identifies direct and indirect benefits to government and non-government stakeholders (citizens and businesses) from e-government.

As an extension of the Sri Lanka e-Government Benchmarking Model / Results Chain, the identification of indicators for the study was made in the **Logical Framework Matrix for Re-engineering Government Programme**, as indicated in **Appendix 3**, by the ICTA M&E Division.

1.5 Findings of Previous Surveys

1.5.1 Results of the GOVS in 2011

The following are some of the main findings of the Government Organizations Visitors Survey conducted in 2011.

[6] Richard Heeks, *Understanding e-Governance for Development*. The *i*Government working paper series, No. 11, Development Informatics Group, Institute for Development Policy and Management, University of Manchester (2001).
[7] Richard Heeks (2003) "Causes of eGovernment Success and Failure: Design Design-Reality Gap Model" www.e-development.org/eGov/causegap.htm
[8] Wackwella Gamage C.D.N and Shahani Weerawarana. "A Critical Evaluation of e-Government Model Implementation in Sri Lanka. ICTA. Fourth International Conference on e-Government (ICEG), RMIT University, Melbourne, Australia (2008)
[9] Richard Heeks, "*Benchmarking E-government: Improving the National and International Measurement, Evaluation and Comparison of E-government*", The iGovernment working paper series, No. 18, 2006, Development Informatics Group, Institute for Development Policy and Management, University of Manchester.
[10] Jeremy Millard, eGovernment measurement for policy makers, *European Journal of e-Practice.* www.epracticejournal.eu. Nº 4 (August 2008).
[11] UNDP, *Handbook on Planning, Monitoring and Evaluating for Development Results*. New York. (2009). p. 55. Available at http://www.undp.org/eo/handbook

- The visitors have spent more time to obtain public services prior to introduction of the e-services. In 2011 the visitors have spent an average time of 88 minutes (waiting time in the queue + service processing time) and prior to 2011 it was 100 minutes.

- The visitors have reduced costs in obtaining public services on introduction of e-services. In 2011, the visitors have spent Rs. 1,023 to obtain a public service as against Rs. 1,553 prior to 2011.

- 25% of visitors were aware of the websites of the government organizations and most of them were having positive perceptions toward these web sites.

- 29% visitors were aware of the online services such as Train Scheduling, Crop Prices, BMD certificates and 1919 Information Services; but overall usage was 7%.

- Among the visitors who used the online services, all most all the visitors were satisfied with the services in terms of efficiency of the delivery of services, time and cost saving, reduced corruption and increased transparency, continuous improvement of services, and improved quality of life.

1.5.2 Results of the GOES in 2011

The following are some of the main findings of the Government Organizations Employees Survey conducted in 2011.

- Relatively high ICT literacy rate prevails among both the executives and nonexecutives. However, relatively low proportion among those surveyed, had the opportunity to attend the training programs organized by ICT.

- An assessment of the outcomes of training revealed that benefit of training had been felt by all participants; relatively more by the non-executives than the executives.

- ICT usage in offices among government employees is widespread; only 5% among the employees were not engaged in using ICT facilities for office work. ICT usage at home among government employees is also relatively high. However, availability of internet connectivity as well as e-mail facility is low at home.

- Access to internet was available (mostly in office) to majority of employees irrespective of rank and gender; close to half of them surf the internet daily.

- Awareness of e-Sri Lanka Development Project, the role of ICTA in e-Sri Lanka Development Project, and the LGN help desk, were at satisfactory levels among the employees.

- The familiarity of the government employees with the e-services provided by the government organizations is limited to slightly more than half of them.

- Usage of internet by the government employees for obtaining services from the government organizations is also at a low level.

- The government employees demonstrate positive attitudes with regard to the areas in which ICT can make the highest contributions in the government sector.

1.5.3 Results of the ICT Usage in 2011

The following are some of the main findings of the ICT Usage in Government Organizations conducted in 2011.

- Noteworthy achievements have so far been realized from the implementation of the Re-engineering Government Programme and contributing to Sri Lanka's march towards an information economy and knowledge society.

- Synergistic positive effects of other components of e-Sri Lanka Development Project, particularly, ICT Policy, Leadership and Institutional Development Programme, ICT Human Resources Development Programme, and e-Society Development Programme were evident. Momentum has been generated and set in motion by the Re-engineering Government Programme with dedication of ICTA and participating organizations, and this needs to be continued with an even greater commitment and acceleration.

- There is a demand for expansion of the implementation of the re-engineering government programme; both in geographical coverage as well as in the inclusion of government services to be upgraded to citizens.

- It is of paramount importance to create awareness among the stakeholders on government citizen services to enhance service delivery; G2C, G2B and G2E. Insufficiency of the present awareness campaigns in reaching a wider audience, and need for a more penetrating campaign was evident.

- Importance of disseminating know-how among citizens, particularly, those in rural areas and disadvantaged / differently able groups, on different methods available online, of citizen services in a time-cost-saving manner, for example, usage of Nenasala, internet-cafe, etc.

Chapter 2: Methodology

This section provides the study design, sampling framework, methods of data collection, methods of data analysis and interpretation of data.

2.1: Field survey method

This study mainly used a survey design to collect the information on time spent by the citizens, cost incurred and the level of satisfaction of the public services obtained from the governmental organizations. This is a **follow-up survey** and is built, to a certain extent, upon the design of the previous survey conducted in 2011[12] and also this survey can be treated as a **rolling baseline survey** because visitors to government organizations which could not be comprehensively surveyed during the previous survey such as those in Northern and Eastern Provinces, have been fully covered in this survey.

The study collected primary as well as secondary data. The interviewers administered questionnaires and Key Informant Interviews (KIIs) which were mainly used as instruments to collect primary data under survey design. The field work was carried out from October to November. Secondary data was also gathered from ICTA and other Agencies, documents, websites, internet and policy documents.

Eight interviewers, who are passed out university students, and three supervisors, who are competent in handling surveys, were selected for the survey. The key requirements included in the selection criteria of the interviewers were, the interviewer's interpersonal skills, previous research experience, good educational background, and recommendation of the research team. A two day training workshop was conducted, utilizing the data collection instruments, to train the interviewers on the survey techniques and to familiarize them with the tools to obtain reliable primary data and also to discuss various strategies to deal with the respondents. Further, the training included, interviewing strategies, rapport building skills, conducting KIIs, demonstration of the research instruments (mock practices), ethical processes in research, as well as trouble shooting in the field.

The team developed the sampling frame in consultation with the client and it includes visitors of the 7 ICTA government organizations at central government level, Land Registry (LR) at district level (4 Land registries: LR1-LR4), Divisional level Agrarian Service Centers (DAS) at district level, four divisional agrarian services: DSA 1-DSA 4;Local Authorities (LA) in 4 districts (4 local authorizes: LA1-LA4) and 21 Divisional Secretariats. Twelve (12) visitors each, who visited the central government organization 1 to 7 were determined on the basis of **Convenient Sample** due to the non-availability of a sampling frame. However, various stratification of the visitors (e.g. Age, sex, residence etc) were considered when selecting visitors who visited the governmental organization, in order to obtain a representation of the visitor population. Ten (10) visitors of each, who visited the LR1-4, DAS 1 - 4 and LA 1 - 4 were determined on the basis of **Convenient Sample** as well as **Purposive Sample in order to** cover the important Government Organization; Land Registries, Divisional Agrarian Services Centers and Local Authorities respectively, 21 Divisional Secretariats were selected **randomly** on the basis of the main District Office of each province. Thus altogether 409 sample size was chosen for the study, and it is justifiable as the scope of the study in the TOR indicates the sample size should be around 300 – 400 visitors covering all relevant Government organizations. (Detailed sample design is given in Table 1 in **Appendix 4)**.

[12] Government Organizations Visitors Surveys - 2011

Filled questionnaires were initially edited and coded and data analysis was carried out using a Software Package for the Social Sciences (SPSS). The frequency tables and graphs were used to explore the respondents' awareness, use and satisfaction of e-government services in Sri Lanka. Some cross tabulation was adopted (bivariate analysis) to explore the information by demographic and socio-economic characteristics. Thus these univariate and bivariate analysis is sufficient to interpret the data and make policy recommendations as well.

2.2 Web content analysis Method

The user survey included 39 government sector organizations that came under the e-Government programme. Of these 11 organizations / service units (28%) did not have direct web presence in terms of their own websites. Among the different categories of organizations, all central government agencies and divisional secretariats considered for the survey had an operating website. However among the four local authorities selected for the sample only one organization had its presence on the web. With respect to the Land Registries and Agrarian Service Centres none had websites under their own domain names but were simply listed with contact number on the divisional secretariats of the relevant regions (see **Table 2 in Appendix 4)**

The government web portal hosted at http://www.gov.lk has a directory of all government websites. All the websites under the Government Originations category selected for this survey were listed in this portal. However among the 20 sites selected under the Divisional Secretariat category only 11 (55%) were listed in the web portal under their respective districts. The other 9 sites were not included in the directory in spite of having an operational website under the specified domain name of ds.gov.lk.

Data collection and assessment

The initial framework for the website assessment was developed using the guidelines provided in the "W3C Web Accessibility Guidelines", the "COI Usability Toolkit" and the "Web Developer Standards" of the Information and Communication Agency of Sri Lanka. The parameters relating to ICTA guidelines for websites inclusive of the language requirements, information requirements and update requirements were also included. The final framework used for the evaluation consisted of 24 parameter measurements that spread over 5 major dimensions. A description of these dimensions and measurements is illustrated in Table 1.

Table 1: Major dimensions and measurement parameters used in assessment framework

	Primary Dimension		Measurement and Description
A.1	**Layout and appearance**	**A.1.a**	**Layout consistency** *Measurement of overall consistency in page layout across multiple pages including the presence of important components (navigation bars, home page links, help links etc.) within the page layout.*
		A.1.b	**Page utilization** *Measurement on the extent of space utilization within the page layout for presentation of informative content.*
		A.1.c	**Layout optimization** *Optimal use of page space within the bounds of the display resolution.*
		A.1.d	**Non-interfering decorative elements** *Measurement of the extent of interference caused by decorative elements (such as backgrounds, borders, banners etc.) in the effective presentation of content elements.*
A.2	**Site Navigation**	**A.2.a**	**Navigation bars**

	Primary Dimension		Measurement and Description
			Measurement in the effectiveness, appropriateness and consistency in the use of navigational components (such as menu bars, navigation icon / image maps, breadcrumb bars, popup menus etc.) within the website.
		A.2.b	**Home page link** Availability of direct navigation to the root page from different locations / pages with the website.
		A.2.c	**Current page position** *Display of current page position within the navigation structure of the website relative to the root page, allowing the user to determine where he is and where he needs to go.*
		A.2.d	**Vertical and lateral navigation** *Measurement of the extent of easiness to the user in navigating vertically (to a different page / topic) and horizontally (different topic / section on the same page) within the website.*
		A.2.e	**Active link visibility** *Measurement of the display prominence given and to active hyperlinks and their display differentiation from content and inactive links.*
A.3	**Content**	**A.3.a**	**Content availability** *Measurement of the availability in appropriate content within the specified content areas of the web page across the site*
		A.3.b	**Relevance** *Measurement of the relevance of the content to the title and expectations of the web site / page.*
		A.3.c	**Non textual elements** *Extent in the use of appropriate non-textual elements such as graphs, images, animations etc to present page content.*
A.4	**Content Elements**	**A.4.a**	**Use of content elements** *Measurement of the appropriate use of layout element (tables, tab sheets, bulleted lists etc) and media content (video, audio and animations) and portable formatted documents (PDF files) within the website for presentation of data and information.*
		A.4.b	**Page performance** *Measurement on the negative effect of content elements (compared to HTML /TEXT) on the loading and transition time of the web page.*
A.5	**ICTA guidelines**	**A.5.a**	**Email addresses** *Availability of contact email addresses within the web site and the use of official domain names in the email addresses.*
		A.5.b	**External links** *Whether a link to government web portal is available.*
		A.5.c	**Localization** *Extent of the availability of page content, navigational components and other structural elements in all three languages, English, Sinhala and Tamil.*
		A.5.d	**Last update date** *Display of the last update date of the website.*
		A.5.e	**Information update requirements** *Whether evidence shows that relevant information items such as staff contents and news have been updated*

	Primary Dimension		Measurement and Description
			within a period of one month.
		A.5.f	**eServices List, Directory of Services and applicable fees** *Whether the site includes information of the directory of services offered by the organization, list of eServices available and the fees/charges applicable for such services*
		A.5.g	**Scrolling news line** *Whether the site has a scrolling news line as per ICTA guidelines.*
		A.5.h	**Organization structure and objective** *Whether there is a page describing the organizational structure and objectives*
		A.5.i	**List of contacts** *Whether the site displays a list of key contacts at the organization*
		A.5.j	**FAQ and Search facility** *Whether the site provide a list of Frequently Asked Questions and information search facility within the site*

Measurement and assessment criteria

All measurements except for those listed under ICTA Guidelines (Dimension 5) in the above Table required a qualitative assessment criterion. Hence for these measurements a subjective assessment using a 5 point Likert scale will be used. For items listed under Dimension 5, an objective binary assessment will be used in order to maintain uniformity with the other parameters.

Five different individuals (including one Tamil language speaking) working independently to each other performed the evaluations on the selected websites based on the assessment guidelines given to them. Thereafter the measurements were grouped horizontally (i.e. on the basis of same parameter across all websites) to compute the assessment distribution and the related statistics across the entire sample. The sample was not further divided into categories for analysis due to the statically low number of websites surveyed. Additionally the measurements were also averaged vertically (i.e. different parameters of the same website) based on their major dimension in order to compute the Dimension score. Finally the results were grouped horizontally to compute the distribution and statistics across the websites within the sample. For vertical averaging only those measurement parameters assessed on a 5 point Likert scale were used.

Chapter 3: Global eGovernment Scenario

3.1 UN eGovernment Survey

3.1.1 Background

Since the mid -1990s governments around the world have been executing major initiatives in order to tap the vast potential of the internet for the distinct purpose of improving and perfecting the governing process. Like the personal computer, the internet has become an indispensable tool in the day-to-day administration of government. In an effort to gain an appreciation of the global e-government landscape in 2001, the American Society for Public Administration (ASPA) and the United Nations Division for Public Economics and Public Administration (UNDPEPA) undertook a research study analyzing the approach, progress and commitment on the part of the 190 UN Member States.

E-government includes virtually all information and communication technology (ICT) platforms and applications in use by the public sector. However, for the purposes of the UN Report, e-government has been defined as: *utilizing the internet and the world-wide-web for delivering government information and services to citizens,* and an e-Government Index was established as an annual benchmark for all UN member states.

3.1.2 United Nations' eGovernment Development Index

The e-Government Development Index (EGDI) is a composite indicator measuring the willingness and capacity of national administrations to use information and communication technology to deliver public services. It is based on a comprehensive survey of the online presence of all 193 Member States, which assesses the technical features of national websites as well as e-government policies and strategies applied in general and by specific sectors for delivery of essential services. It attempts to establish a "reference point" for which a country can measure future progress. The e-government Index presents a more inclusive and less subjective measure of a country's e-government environment. It measures a country's, *scope and quality of online services, development status of telecommunication infrastructure, and inherent human capital. e-participation is a supplementary index* as explained later in this chapter.

The United Nations E-Government Survey 2012 explored the inter-linkages between e-government and sustainable development efforts and analyses how governments of the world are employing e-government policies and programmes to support efficiency, effectiveness, and inclusiveness as the parameters of sustainable development efforts worldwide. According to the Survey rankings, the Republic of Korea is the world leader (0.9283) followed by the Netherlands (0.9125), the United Kingdom (0.8960) and Denmark (0.8889), with the United States, Canada, France, Norway, Singapore and Sweden close behind. Sri Lanka is ranked 115 with 0.4357 points.

3.1.3. Best Practices Identified in the Survey

- Many Member States are moving from a decentralized single-purpose organization model, to an integrated unified whole-of-government model contributing to efficiency and effectiveness. The concept of integrated services exploits inter linkages among different public services on a functionally and/or thematically similar one-stop-shop portal, thereby improving and facilitating citizen experience, allowing for back-office integration across governmental departments and strengthening institutional arrangements. The model aims at centralizing the entry point of service delivery to a single portal where citizens can access all government-supplied services, regardless of which government authority provides them. In some countries, the whole-of-government approach helps build a transparent government system with interconnected departments and divisions feeding

into the funnel of greater government efficiency and effectiveness.

- www.usa.gov is perhaps the best example of a highly integrated portal. It is carefully organized, starting from a sufficient level of abstraction for the citizen who does not need to know, say, exactly for which form he/she is looking. Yet by drilling down through increasing levels of specificity, the citizen ultimately and with remarkably little effort arrives at a very specific item or service. This process is aided on virtually every page by "Popular Topics," "In Focus," and other helpful boxes that bubble up content that is likely to be relevant. In the event that the citizen cannot find what he/she needs by browsing, a comprehensive, detailed and searchable FAQ is available. Failing that, the citizen can use the general advanced search feature, which indexes dozens of federal and even state and municipal web sites. Finally, the site provides myriad ways for the citizen to communicate with the government on any topic, ranging from technical support for the site to substantive policy issues.

- Multichannel service delivery. The 2012 Survey shows that 71 Member States partner with third party organizations such as those in the civil society or the private sector. They provide services through various channels such as traditional ones supported by intermediaries, free access to public services through kiosks or WiFi, and mobile-based channels such as mobile web or applications. 27 out of 193 Member States had initiated the service of sending messages and alerts via SMS to citizens' mobile phones, 25 countries have developed separate m-government websites, 24 countries provide the option of making payments via mobile phone, and 14 include specific sections on their national websites for vulnerable groups such as the poor, illiterate, blind, old, young, and women.
  Multichannel methods are being used for online public consultation in Australia and

  New Zealand, through the government providing draft regulations in a downloadable format for users to read. Citizens can then submit their comments and suggestions via email to the respective ministry that is responsible for the consultation.

  Malta provides timely notifications and alerts citizens to government services of interest through multiple delivery channels. Malta 'My Alerts' provides citizens with a one-stop-shop for all notifications by email and SMS, allowing citizens to be notified about various government services instantly. These services are updated continuously to provide the latest information on governmental notifications, while My Alerts also provides citizens with news regarding ongoing and new e-government initiatives. In Malta mobile penetration is high, as mobile cellular subscriptions per 100 inhabitants were 109.34 while internet users per 100 inhabitants totaled 63 in 2010 according to ITU. Hence, using mobile channels makes sense in Malta. And public agencies can reach the majority of the population by using mobile-based services.

- Expansion of information and services to vulnerable groups. The Survey assessed how governments of the world fared in facilitating digital access for the illiterate and low-educated, persons with disabilities, the poor, women, children, the elderly, and communities vulnerable populations, and tackled the challenges they face in accessing and using ICTs and e-services in the public sector. The challenges were presented along four lines of analysis:

  - Language and Literacy. Many countries have moved towards digital multilingualism, including local content production. Asia is the leader with 40 countries offering their national websites in more than one language. Asia is followed closely by Europe.

  - Abilities and capacities. The Survey findings demonstrate that seven countries offer video of sign language on their national government websites, and except for

Canada, they are all situated in Europe. The trend-setters in digital ability are Austria, Finland, France, Portugal, Sweden and the United Kingdom. The Survey also shows that only 13 countries offer services to read their national government web pages aloud via a speaker or headphones. 32 per cent of governments across the globe (61 Member States out of a total of 193) have already incorporated features that allow for the configuration of font size, font type, font colour and background colour into the design of their national websites. These advances facilitate the digital access, not only of those with different visual abilities, but also of the elderly.

- Gender and Income. The rising social media and networking tools show some promising gender trends. Women demonstrate higher levels of engagement with social networking sites than men. Most active women in social media are in Latin America, followed by North America and Europe. Women in Asia are relatively less interested in social media. In all regions, women are engaged more fully in social media than men.

- Location and Age. Survey findings show that e/m-health and e/m education are being used to access remote areas and distant markets with low population densities. They can be effective tools in promoting sustainable development through increased access and community-oriented services that actively involve all segments of society in the formulation, design and provision of needed e-services.

  The elderly can also benefit from Internet training and access programmes. In their case, fighting computer anxiety and raising awareness of the benefits of usage are important. In general, medical information, tips on stretching a limited income, expansion of social support networks, and staying in touch with family are among the advantages that senior citizens can seize to improve their well-being and help close the digital divide.

  Hungary has an initiative called 'Click on it Grandma' in which computer classes are offered to senior and retired citizens at nominal fee (EUR 4) in nationwide community centers.

- Environment- related services.

1. Dissemination of information looks particularly at four policy areas related to environmental degradation and natural resources management: clean air, clean water, energy, and resource conservation.

2. Institutional integration with respect to environmental matters. Given the importance placed on empowering citizens – particularly marginalized groups – with respect to environmental policy making, it also assessed how e-participation tools are deployed in the environmental domain, at the same time, focusing on the importance of institutional integration at all levels for sustainable development. Opportunities for citizen engagement on environmental issues focused on how e-government offerings support both sub-national and international integration.

Trinidad and Tobago's Environmental Management Authority's website offers a wealth of information on environmental policy, laws and regulations, as well as technical reports detailing how the government manages natural resources. In addition, the site includes links to the Authority's Facebook page and YouTube channel. The latter features nearly 30 videos on a variety of environmental topics.

The website of Brazil's Environment Ministry includes a tag cloud of most frequent

searches and a calendar of public consultations on the environment. There is also a special section of the site dedicated to Rio +20, including an electronic questionnaire soliciting citizen feedback in formulating Brazil's position.

- Horizontal and vertical e-government linkages among various institutions and nodal points have created opportunities for greater participation and social inclusiveness. By bringing technology to the people instead of making the people come to technology hubs, and by creating opportunities for online service delivery, e-government has contributed to coordinated efforts for increased e-government among public sector officials, public institutions and citizens.

- Republic of Korea was ranked No.1 in the Survey. The Government's main website has developed into an integrated portal where citizens can find almost every service they want, on both national and local level. The main government portal is a gateway to services through multiple channels, by theme and subjects; citizens can also have a customized channel by inputting their own age, gender and services of interest. Back-office integration across many departments brings together a powerful search engine offering advanced categorizing function, which can list results by websites, services, and news, including at the local level.

  A key reason for continued leadership in world e-government progress is the significant development and provision of downloadable mobile applications that are available from its national portal. The cross sector mobile apps for citizens are both iPhone and Android compatible including for e-Learning, which allows students to learn on their mobile phone in areas such as social studies, math and English. For employment opportunities, Job cast provides information on availability of jobs in the Republic of Korea along with the relevant legislation governing labour.

- Pakistan - The Ministry of Interior and the National Database and Registration Authority (NADRA) have introduced a chip-based e-passport that would help further secure the identity of the citizens, making Pakistan one of the first countries in the world to issue the Multibiometric e-Passport compliant with ICAO standards. The e-Passport solution uses security features on the data page supported by sophisticated technology and business logic, which makes it one of the most modern passports of this era. NADRA has already issued the passports to millions of Pakistani citizens.

- Singapore is among the leaders in the use of private cloud computing for leveraging ICT infrastructure and services. In September 2009, it became the first government in Asia to equip all its teachers with Web 2.0 communication and collaboration tools under an open standard cloud platform. Singapore's citizen's portal provides an extensive range of online payment services that lists by agency as well as bill type. Payments range from taxes, fees, fines and licenses that can be made through multi channels such as credit card, direct debit as well as internet banking and even by phone.

- Australia's national portal provides numerous features enabling citizens to engage with government in the policy-making process. The government provides a 'Have Your Say' section that is located on the homepage of the portal. This section links to a public consultations section where citizens can send their comments and suggestions on draft regulations to the respective ministry, mainly by email. The government also provides the outcomes of previous consultations online. Also located in this section is a 'blogs' page that provides links to various government blogs as well as a Twitter page that shows a table of all government Twitter pages that users can access and respond to with their comments and suggestions.
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3.1.4 Sri Lanka Compared

Table 2: e-Government Development Index 2012

Rank	Country	Index value	Online Service Component	Telecomm. Infrastructure Component	Human Capital Component
World Top Ten					
1	Republic of Korea	0.9283	1.0000	0.8356	0.9494
2	Netherlands	0.9125	0.9608	0.8342	0.9425
3	United Kingdom	0.8960	0.9739	0.8135	0.9007
4	Denmark	0.8889	0.8562	0.8615	0.9489
5	United States	0.8687	1.0000	0.6860	0.9202
6	France	0.8635	0.8758	0.7902	0.9244
7	Sweden	0.8599	0.8431	0.8225	0.9141
8	Norway	0.8593	0.8562	0.7870	0.9347
9	Finland	0.8505	0.8824	0.7225	0.9467
10	Singapore	0.8474	1.0000	0.6923	0.8500
South Asia					
95	Maldives	0.4994	0.3268	0.3599	0.8114
100	Iran	0.4876	0.4902	0.2638	0.7089
115	**Sri Lanka**	**0.4357**	**0.3791**	**0.1922**	**0.7357**
125	India	0.3829	0.5359	0.1102	0.5025
150	Bangladesh	0.2991	0.4444	0.0641	0.3889
152	Bhutan	0.2942	0.3529	0.1143	0.4153
156	Pakistan	0.2823	0.3660	0.1239	0.3572
164	Nepal	0.2664	0.2876	0.0597	0.4521
184	Afghanistan	0.1701	0.2353	0.0573	0.2178
Regional and Economic Groupings					
	Africa	0.2780	0.2567	0.1094	0.5034
	Americas	0.5403	0.4648	0.3602	0.7958
	Asia	0.4992	0.4880	0.2818	0.7278
	Europe	0.7188	0.6189	0.6460	0.8916
	Oceania	0.4240	0.2754	0.2211	0.7754
	World	0.4882	0.4328	0.3245	0.7173
	Developed countries	0.7329	0.6503	0.6509	0.8974
	Developing countries other than LDCs	0.4865	0.4311	0.2860	0.7553
	Least developed countries	0.2420	0.2143	0.0685	0.4575
	Small island developing States	0.4328	0.2821	0.2758	0.7406

3.1.5 Overall Assessment of South Asian Region

All countries of Southern Asia fall in the lower half of the e-ready countries with approximately an equal number of them above and below the regional average. Sri Lanka falls below the regional average of 0.4992 in 2012.

A low GDP per capita, a still evolving infrastructure and lower levels of functional literacy translate into low service provision and user uptake for the majority of the populations of India, Bangladesh, Bhutan, Pakistan and Nepal, with e-government development levels ranging from 0.2664 to 0.3829. Maldives (0.4994) leads in the sub-region followed by the Islamic Republic of Iran (0.4876) and then Sri Lanka (0.4357). Service provision in Maldives builds on providing easy access to information to citizens and businesses. Through an 'I Want To' section organized by theme and life cycle, users can find information on service

procedures, including how to obtain driver licenses, obtain ID cards and register vehicles. The national site of the Islamic Republic of Iran is available in two languages: Persian and English. Transactional service offerings in the Islamic Republic of Iran are joint public-private partnerships with some available online but also though banks and other local and national institutions.

3.1.5.1 Online Service Ranking

The online service index is a measure of 'how much' the governments are putting online. Of all the online services assessed of the United Nations Member States, the Republic of Korea, Singapore and the United States provide the most. Among the top 20 in 2012 are several developing countries, which are at the same level as some high-income economies, such as Bahrain and the United Arab Emirates. two countries that devoted especial attention to expanding and consolidating online services in the last few years and now offer online services close to those of global leaders such as Norway and Denmark.

Bahrain's e-government strategy is based upon "delivering customer value through collaborative government." The government sees citizens as customers who have different needs and demand different services and at the same time demand value for money. Thus the aim of e-government is to provide all services, integrated, to all citizens and upon their choice of channel. The Kingdom provide delivery of services through the following channels: e-government portal, mobile portal, national contact centre (a 24-7 call centre) and e-services centres and kiosks. Bahrain has introduced the "Listen" feature, which enables people with visual disabilities to hear any text available on the website with the click of a button. Another very innovative feature is the e-government toolbar, which can be downloaded permanently to your browser. This allows direct access to e-services and RSS feeds without having to go to the main portal.

Table 3: The online Service Index

Country	Online Service Index Value	Stage I Merging Presence %	Stage II Interactive Presence %	Stage III Transactional Presence %	Stage IV Networked Presence %	Total %
India	0.5359	100%	64%	33%	38%	47%
Iran	0.4902	67%	40%	46%	38%	43%
Bangladesh	0.4444	100%	60%	21%	29%	39%
Sri Lanka	**0.3791**	**92%**	**48%**	**13%**	**29%**	**33%**
Pakistan	0.3660	83%	45%	6%	35%	32%
Bhutan	0.3529	92%	50%	10%	25%	31%
Maldives	0.3268	75%	55%	8%	20%	29%
Nepal	0.2876	67%	43%	2%	25%	25%
Afghanistan	0.2353	50%	33%	19%	9%	21%
Regional and economic groupings						
Africa	0.2567	66%	31%	7%	21%	22%
Americas	0.4648	86%	53%	27%	36%	41%
Asia	0.4880	85%	51%	32%	38%	43%
Europe	0.6189	96%	66%	45%	46%	54%
Oceania	0.2754	61%	34%	14%	20%	24%
World	0.4328	81%	48%	26%	33%	38%
Developed countries	0.6503	96%	68%	49%	49%	57%
Developing countries other than LDCs	0.4311	83%	48%	24%	34%	38%
Least developed countries	0.2143	60%	27%	5%	17%	19%
Small island developing States	0.2821	67%	37%	11%	20%	25%

The Four Stages comprise:

Stage 1 - Emerging information services: Assessment is based on whether Government websites provide information on public policy, governance, laws, regulations, relevant documentation and types of government services provided. Do they have links to ministries, departments and other branches of government. Are Citizens easily able to obtain information on what is new in the national government and ministries and can follow links to archived information.

Stage 2- Enhanced information services: Here the assessment is based on delivery. Whether Government websites deliver enhanced one-way or simple two-way e-communication between government and citizen, such as downloadable forms for government services and applications. Do the sites have audio and video capabilities and are multi-lingual, among others.

Stage 3 - Transactional services assessment is on whether Government websites engage in two-way communication with their citizens, including requesting and receiving inputs on government policies, programmes, regulations, etc. Do the websites require some form of electronic authentication of the citizen's identity to successfully complete the exchange. Do Government websites process non-financial transactions, e.g. e-voting, downloading and uploading forms, fi ling taxes online or applying for certificates, licenses and permits. Do they also handle financial transactions, i.e. where money is transferred on a secure network to government.

Stage 4- Connected services is concerned with whether Government websites have changed the way governments communicate with their citizens. Are they are proactive in requesting information and opinions from the citizens using Web 2.0 and other interactive tools. Are information, data and knowledge, transferred from government agencies through integrated applications. Have Governments have moved from a government- centric to a citizen-centric approach, where eservices are targeted to citizens through life cycle events and segmented groups to provide tailor-made services. Do Governments create an environment that empowers citizens to be more involved with government activities so as to have a voice in decision-making.

3.1.5.2 Telecommunication Infrastructure Ranking

Table 4: Telecommunication Infrastructure Index and its Components:

Country	Index value	Estimated Internet users per 100 inhabs.	Main fi xed phone lines per 100 inhabs.	Mobile subscribers per 100 inhabs.	Fixed Internet subscriptions per 100 inhabs.	Fixed broadband per 100 inhabs.
Maldives	0.3599	28.30	15.20	156.50	6.44	4.92
Iran	0.2638	13.00	36.30	91.25	1.21	0.68
Sri Lanka	0.1922	12.00	17.15	83.22	1.21	1.02
Pakistan	0.1239	16.78	1.97	59.21	2.17	0.31
Bhutan	0.1143	13.60	3.62	54.32	0.93	1.20
India	0.1102	7.50	2.87	61.42	1.53	0.90
Bangladesh	0.0641	3.70	0.61	46.17	0.11	0.04
Nepal	0.0597	6.78	2.81	30.69	0.28	0.38
Afghanistan	0.0573	4.00	0.45	41.39	0.01	0.00
Regional and Economic Groupings						
Africa	0.1094	0.1094	9.85	3.93	56.45	0.66
Americas	0.3602	36.63	21.26	107.53	8.06	9.08

Country	Index value	Estimated Internet users per 100 inhabs.	Main fixed phone lines per 100 inhabs.	Mobile subscribers per 100 inhabs.	Fixed Internet subscriptions per 100 inhabs.	Fixed broadband per 100 inhabs.
Asia	0.2818	29.33	15.06	91.64	6.98	5.41
Europe	0.6460	66.01	40.40	119.52	24.06	23.63
Oceania	0.2211	21.26	17.22	59.06	6.25	4.41
World	0.3245	32.79	18.87	88.53	9.33	8.73
Developed countries	0.6509	67.45	40.69	117.24	24.60	23.92
Developing countries other than	0.2860	28.62	16.11	98.11	5.90	5.24

The index is an arithmetic average composite of five indicators: estimated internet users per 100 inhabitants, number of main fixed telephone lines per 100 inhabitants, number of mobile subscribers per 100 inhabitants, number of fixed internet subscriptions per 100 inhabitants, and number of fixed broadband facilities per 100inhabitants. The International Telecommunication Union is the primary source of data in each case.

3.1.5.3. Human Capital Ranking

Table 5: Human Capital Index ranking

Country	Human capital Index	Adult Literacy (%)	Enrollment (%)
Maldives	0.8114	98.40	69.26
Sri Lanka	0.7353	90.56	65.99
Iran	0.7089	85.02	69.89
India	0.5025	62.75	62.61
Nepal	0.4521	59.14	57.48
Bhutan	0.4153	52.81	60.51
Bangladesh	0.3889	55.90	48.70
Pakistan	0.3572	55.53	42.01
Afghanistan	0.2178	28.00	59.97

The human capital index is a weighted average composite of two indicators: adult literacy rate and the combined primary, secondary, and tertiary gross enrolment ratio, with two thirds weights assigned to adult literacy rate and one third weight assigned to the gross enrolment ratio. The United Nations Educational, Scientific and Cultural Organization is the main source of data for both indicators.

3.1.5.4. Supplementary e-Participation Index

The e-participation supplementary questions, as part of the e-government questionnaire, extend the dimension of the Survey by emphasizing quality in the connected presence stage of e-government. These questions focus on the use of the Internet to facilitate provision of information by governments to citizens (“e -information sharing”), interaction with stakeholders (“e-consultation”), and engagement in decision-making processes (“e-decision making”). A country’s e-participation index value reflects how useful these features are and how well they have been deployed by the government compared to all other countries. The purpose of this measure is not to prescribe any particular practice, but rather to offer insight into how different countries are using online tools to promote interaction between citizen and government, as well as among citizens, for the benefit of all.

Table 6: eParticipation Index

Rank	Country	Index Value
8	Baharain	0.6579
25	India	0.1842
25	Iran	0.1842
27	Afghanistan	0.1316
27	Pakistan	0.1316
29	Sri Lanka	0.0789
29	Bangladesh	0.0789
31	Bhutan	0.0263
31	Maldives	0.0263
31	Nepal	0.0263
Regional and Economic Grouping		
Africa		0.0828
Americas		0.2579
Asia		0.2738
Europe		0.3482
Oceania		0.1147
World		0.2225
Developing Countries		0.3990
Developing Countries		0.2223

3.1.5.5. Environment Index

Keeping with institutional development identified as one of the two main themes for Rio+20, a special focus of the 2012 Survey was on environment- related services. It assessed the provision of environment and resource conservation information and services to the citizen and presented the first data set on United Nations e-environment indicators.
The Survey assessed Member States' online offerings in three areas cited in the Secretary-General's Report to the Preparatory Committee for the United Nations Conference on Sustainable Development.

Table 7: Environment Index

Country	Index Value
Pakistan	0.7647
Bangladesh	0.7059
India	0.6471
Iran	0.6471
Maldives	0.5882
Bhutan	0.2941
Sri Lanka	0.2941
Nepal	0.2941
Bahrain	0.2353
Afghanistan	0.0000

3.2 Global Information Technology Report (GITR) 2013

3.2.1 Background

The GITR series has been published by the World Economic Forum in partnership with INSEAD since 2002. The *Report* has accompanied and monitored ICT advances over the last decade as well as raising awareness of the importance of ICT diffusion and usage for long-term competitiveness and societal well-being. Through the lens of the Networked Readiness Index (NRI), the driving factors and impacts of networked readiness and ICT leveraging have been identified, highlighting the joint responsibility of all social actors – individuals, businesses, and governments. This year's coverage of the NRI includes a record number of 144 economies, accounting to over 98 percent of global GDP and the top 5

countries in chronological order are: Sweden, Singapore, Finland, Denmark, and Switzerland. Sri Lanka is ranked 71 second to India ranked 69, among the South Asian countries.

3.2.2 The Index

The NRI comprises of four sub indexes that measure;

- the environment for ICTs;
- the readiness of a society to use ICTs;
- the actual usage of all main stakeholders; and finally,
- the impacts that ICTs generate in the economy and in society

The three first sub indexes can be regarded as the drivers that establish the conditions for the results of the fourth sub index, ICT impacts. These four sub indexes are divided into 10 pillars composed of 54 individual indicators in total (of which 27 are quantitative and 27 are qualitative), according to the following structure.

A. Environment subindex
   1. Political and regulatory environment
   2. Business and innovation environment

B. Readiness subindex
   3. Infrastructure and digital content
   4. Affordability
   5. Skills

C. Usage subindex
   6. Individual usage
   7. Business usage
   8. Government usage

D. Impact sub index
   9. Economic impacts
   10. Social impacts

The final NRI score is a simple average of the four composing sub index scores, while each sub index's score is a simple average of those of the composing pillars. In doing so it is assume that all NRI sub indexes make a similar contribution to networked readiness.

The environment sub index gauges the friendliness of a country's market and regulatory framework in supporting high levels of ICT uptake and the emergence of entrepreneurship and innovation-prone conditions.

The ***political and regulatory environment pillar*** (composed of nine variables) assesses the extent to which the national legal framework facilitates ICT penetration and the safe development of business activities, taking into account general features of the regulatory environment (including the protection afforded to property rights, the independence of the judiciary, and the efficiency of the law-making process) as well as more ICT-specific dimensions (the passing of laws related to ICTs and software piracy rates).

The ***business and innovation environment pillar*** (nine variables) gauges the quality of the business framework conditions to boost entrepreneurship, taking into account dimensions related to the ease of doing business (including the presence of red tape and excessive fiscal charges) and also measures the presence of conditions that allow innovation to

flourish.

The readiness sub index with a total of 12 variables, measures the degree to which a society is prepared to make good use of an affordable ICT infrastructure and digital content.

The ***infrastructure and digital content pillar*** (five variables) captures the development of ICT infrastructure (including mobile network coverage, international Internet bandwidth, secure Internet servers, and electricity production) as well as the accessibility of digital content.

The ***affordability pillar*** (three variables) assesses the cost of accessing ICTs, either via mobile telephony or fixed broadband Internet, as well as the level of competition in the Internet and telephony sectors that determine this cost.

The ***skills pillar*** (four variables) gauges the ability of a society to make effective use of ICTs thanks to the existence of basic educational skills captured by the quality of the educational system, the level of adult literacy, and the rate of secondary education enrollment.

The usage sub index assesses the individual efforts of the main social agents—that is, individuals, business, and government—to increase their capacity to use ICTs as well as their actual use in their day-to-day activities with other agents. It includes 16 variables.

The ***individual usage pillar*** (seven variables) measures ICT penetration and diffusion at the individual level, using indicators such as the number of mobile phone subscriptions, individuals using the Internet, households with a personal computer (PC), households with Internet access, both fixed and mobile broadband subscriptions, and the use of social networks.

The ***business usage pillar*** (six variables) captures the extent of business Internet use as well as the efforts of the firms in an economy to integrate ICTs into an internal, technology-savvy, innovation-conducive environment that generates productivity gains. Consequently, this pillar measures the firm's technology absorption capacity as well as its overall capacity to innovate and the production of technology novelties measured by the number of Patent Cooperation Treaty (PCT) patent applications and the extent of staff training available.

The ***government usage pillar*** (three variables) provides insights into the importance that governments place on carrying out ICT policies for competitiveness and to enhance the well-being of their citizens, the efforts they make to implement their visions for ICT development, and the number of government services they provide online.

The impact sub index gauges the broad economic and social impacts accruing from ICTs to boost competitiveness and well-being and that reflect the transformations toward an ICT- and technology-savvy economy and society. It includes a total of eight variables.

The ***economic impacts pillar*** (four variables) measures the effect of ICTs on competitiveness thanks to the generation of technological and non-technological innovations in the shape of patents, new products or processes, and organizational practices, as well as the overall shift of an economy toward more knowledge-intensive activities.

The ***social impacts pillar*** (four variables) aims at assessing the ICT-driven improvements in well-being thanks to their impacts on the environment, education, energy consumption, health progress, or more-active civil participation.

3.2.3 Insights from NRI 2013

- ✓ Of the 10 pillars, *infrastructure and digital content* and *individual usage* are the two where the score differentials between the 35 advanced economies and the 109 economies that comprise 'rest of the world', are the biggest. Although mobile telephony is becoming ubiquitous almost everywhere, with mobile penetration of 111 per 100 population in the advanced economies and not too far behind with 81 mobile telephony subscriptions per 100 population in the developing economies (in 2011), figures for Internet usage and broadband access, let alone mobile broadband access and PC ownership, remain low in most parts of the world. Mobile telephony alone is considered insufficient for developing countries to bridge the digital divide. The same degree of innovation, competition, and attention that contributed to making mobile telephony affordable, useful, and ubiquitous need to be applied to other technologies.

- ✓ A larger gap is seen between the advanced economies and rest of the world in relation to ICT impacts. This is arguably the result of biggest concern, as impact is ultimately what really matters. Narrowing this *new* digital divide will take even more effort than narrowing the gap in ICT access.

- ✓ Finland has set in motion a virtuous digital circle offering exceptionally conducive institutional and business environments, world class infrastructure, and arguably one of the best educational systems in the world. As a result, ICTs are ubiquitous and penetration rates are among the highest globally. Ninety percent of households are equipped with a computer and 90 percent of the population use the Internet, mostly at broadband speeds. Further, it is an innovation hub, boasting the world's highest number of PCT applications per capita in the domain of ICTs, and the third highest when considering all domains. But the impact of ICTs extends well beyond innovation, permeating the entire economy and society. For instance, Finland ranks 1st on the indicator capturing the extent to which ICTs create new services and products.

- ✓ Singapore remains 2nd overall. The extreme efficiency and business friendliness of its institutional framework, strong intellectual property protection, intense competition, and high university enrollment rate are contributing factors to this outcome. Singapore's readiness is also world class, due to its excellent digital infrastructure and skill base. Among other things, Singapore has the world's largest number of mobile broadband subscriptions per capita, above 100 percent.

- ✓ Netherlands ranks 2nd in the impact subindex. The high share of knowledge-intensive jobs in the economy—almost 50 percent, the 3rd highest in the world—and the country's capacity for innovation are factors contributing to this position.

- ✓ The Polish government introduced its Strategy for the Development of the Information Society in Poland until 2013 in 2008 and its long-term strategy, Poland 2030, in November 2011. This Plan assumes that geographical areas of intervention will be determined on the basis of a nationwide coverage and infrastructure inventory exercise, under the Information System of Broadband Infrastructure (known by its Polish acronym SIIS) database. The Plan sets out clear and measurable broadband targets:

    - o universal access to the Internet by 2013,
    - o universal access to broadband of the speed of at least 30 Mb/s by 2020, and
    - o at least 50 percent of households with an Internet access of at least 100 Mb/s by 2020.

The SIIS has become a tool to determine which areas are in need of funding, to detect and eliminate gaps in the coverage of high-speed network bandwidth and improve offers aimed at the less developed areas, and to determine in what locations and in what technology investment is justified.

- ✓ Use of Big Data to match skills to jobs. Singapore's Ministry of Manpower has developed an SAS analytics solution that draws information from a variety of departmental sources to support its operations planning, case management, and the early detection of potential workplace and employment issues. This has enabled it to put resources in place in a timely manner to give employers greater visibility into skills availability, to identify and close skills gaps, and to offer a more targeted service to both employees and employers.

3.3 ICT Development Index (IDI)

3.3.1 Background

This report is prepared annually by the International Telecommunication Union (ITU). It identifies key ICT developments and tracks the cost and affordability of ICT services, in accordance with internationally agreed methodologies. Its core feature is the *ICT Development Index* (IDI), which ranks countries' performance with regard to ICT infrastructure and uptake.

The Republic of Korea, followed by Sweden, continues to lead the world in terms of ICT developments. The other Nordic countries Iceland, Denmark, Finland and Norway follow closely. The Netherlands, the United Kingdom, Luxembourg and Hong Kong (China) make up the top ten.

3.3.2 The Index

The IDI is a composite index combining 11 indicators into one benchmark measure (presented on a scale from 0 to 10) that monitors and compares developments in information and communication technology (ICT) across countries.

The IDI is divided into three sub-indices: the *access sub index*, the *use sub-index* and the *skills sub-index*, each capturing different aspects and components of the ICT development process.

The ICT development process, and a country's transformation to becoming an information society, can be depicted using the following three-stages.

- ✓ Stage 1: ICT readiness (reflecting the level of networked infrastructure and access to ICTs)
- ✓ Stage 2: ICT intensity (reflecting the level of use of ICTs in the society)
- ✓ Stage 3: ICT impact (reflecting the result/outcome of efficient and effective ICT use).

Advancing through these stages depends on a combination of three factors: the availability of ICT infrastructure and access, a high level of ICT usage and the capability to use ICTs effectively. Accordingly, the first two stages listed above correspond to two major components of the IDI: ICT access and ICT use. The third stage, and maximizing the impact of ICTs, crucially depends on the third component of the IDI: ICT skills.

- ***Access sub-index*** : This sub-index captures ICT readiness, and includes five infrastructure and access indicators (fixed-telephone subscriptions, mobile cellular

- Telephone subscriptions, international Internet bandwidth per Internet user, percentage of households with a computer, and percentage of households with Internet access).

- ***Use sub-index:*** This sub-index captures ICT intensity, and includes three ICT intensity and usage indicators (individuals using the Internet, fixed (wired)-broadband subscriptions, and wireless-broadband subscriptions).

- ***Skills sub-index:*** This sub-index captures ICT capability or skills as indispensable input indicators. In the absence of data on ICT skills, it includes three proxy indicators (adult literacy, gross secondary enrolment and gross tertiary enrolment), and is therefore given less weight in the computation of the IDI compared with the other two sub-indices.2

3.3.3 Achievements of Top Ten Economies – Overall IDI

- The top ten economies achieved top scores on all IDI indicators, including in the area of wireless: the number of mobile-cellular subscriptions has surpassed the number of inhabitants in all top ten economies, and mobile-broadband penetration levels are high, and growing steadily. High-speed mobile wireless-broadband penetration stood at over 50 per cent in all top ten economies in 2012. The Republic of Korea, together with Finland and Sweden, are leaders in terms of mobile-broadband uptake, and all three have passed the 100 per cent penetration rate for active mobile-broadband subscriptions.

- All top performers benefit from abundant international Internet bandwidth, a highly developed backbone, and solid fixed-broadband infrastructure. Fixed broadband penetration exceeds 30 per cent in every one of the top ten economies.

- A very large majority of households in the top ten economies have a computer and Internet access.

- Another shared characteristic of these economies is their high level of Internet penetration: with the exception of Hong Kong (China), where Internet penetration in 2012 stood at 73 per cent, more than four out of five people in the top ten economies are online. In Iceland, Norway and Sweden, between 94 and 96 per cent of the population are using the Internet. In the Republic of Korea, over 97 per cent of households have access to the Internet, and the figure is over 90 per cent in the Netherlands (94 per cent), Luxembourg and Norway (93 per cent) and Denmark and Sweden (92 per cent).

- The Republic of Korea, where ICT continues to be a key priority area, nearly all households had high-speed Internet access and the country enjoyed one of the highest average advertised broadband speeds in the world. ICTs have helped the Republic of Korea to become a robust economy, and overcome the 2008 financial crisis. They have driven growth and innovation, increased transparency and made the country one of the key ICT exporters in the world. A large majority of households in Europe's Nordic countries also have high-speed Internet access. Sweden (87 per cent) registered the highest penetration of broadband connections, followed by Denmark and Finland (both 85 per cent). In the Netherlands and the United Kingdom, 83 per cent and 80 per cent, respectively, of all households had a broadband connection to the Internet in 2012.

- Most of the top performers in the IDI were also early adopters of Long Term Evolution (LTE) wireless technology. By early 2012, about half of the population of

Sweden lived in a place that had coverage by one of the 4G networks. In the Republic of Korea, where LTE services were launched in 2011, nationwide coverage was achieved by April 2012. In June 2012, the largest operators in the Republic of Korea and in Hong Kong (China) announced that they were offering users the benefits of the first LTE international roaming agreement.

- Another feature shared by top performers in the IDI is an independent and active regulatory authority that analyses and supervises the telecommunication markets in order to provide impartial and transparent information, protect consumer interests and guarantee an open and competitive market environment. Only recently, both the Swedish Post and Telecom Authority (PTS) and the Icelandic Post and Telecom Administration (PTA) laid down new rules for dominant operators identified as having significant market power, in order to ensure long term competition.

- Regulators are also increasingly monitoring the speed and quality of fixed- and mobile-broadband subscriptions, and looking into regulatory measures to ensure that their country's backbone infrastructure is able to cope with increasing demand for bandwidth. In the United Kingdom, Ofcom recently published a report "to encourage competition in the business connectivity market, and identify how best to sustain critical fiber networks between businesses – which also support a growing number of consumer services". In Hong Kong (China), the Office of the Communications Authority offers users an online broadband performance test system to test both actual fixed-broadband and mobile-broadband speeds.

- The access sub index list is topped by Hong Kong (China), which displays a very high value of 9 and also ranked first in last year's access sub-index. Hong Kong (China)'s telecommunication regulator has ensured that, as one of the world's key financial hubs, Hong Kong has an abundant amount of bandwidth. Its international Internet bandwidth per Internet user is the second highest in the world (after Luxembourg). In December 2012, the eighth high-speed undersea cable system, the Asia Submarine-cable Express (ASE), landed in Hong Kong (China), and more cables are planned. ACE "offers both unparalleled ultra-low latency performance to the region as well as high resiliency on natural disasters and supports enterprises' growth in particular financial institutions for which every millisecond counts in the highly competitive market". By end 2012, Hong Kong (China) had 185 licensed broadband Internet service providers and about 2.27 million registered customers (from a population of just over 7 million) enjoying broadband services with speeds up to 1'000 Mbit/s. Some 87 per cent of households had fixed broadband at home, and Hong Kong is also one of the world leaders in the deployment of FTTH/B technologies. In addition to a highly competitive 3G market, all five mobile network operators have deployed LTE technology. ITU price data also show that Hong Kong's fixed- and mobile broadband services are very affordable, in particular when compared internationally.

3.3.4 Sri Lanka Compared within the Region

Table 2.15: IDI – Asia and the Pacific

Economy	Regional rank 2012	Global rank 2012	IDI 2012	Global rank 2011	IDI 2011	Global rank change 2011-2012
Korea (Rep.)	1	1	8.57	1	8.51	0
Hong Kong, China	2	10	7.92	10	7.66	0
Australia	3	11	7.90	15	7.54	4
Japan	4	12	7.82	8	7.77	-4
Macao, China	5	14	7.65	13	7.57	-1
Singapore	6	15	7.65	14	7.55	-1
New Zealand	7	16	7.64	18	7.31	2
Brunei Darussalam	8	58	5.06	56	4.93	-2
Malaysia	9	59	5.04	57	4.81	-2
Maldives	10	73	4.53	71	4.31	-2
China	11	78	4.18	79	3.86	1
Fiji	12	82	3.99	81	3.79	-1
Mongolia	13	85	3.92	90	3.59	5
Viet Nam	14	88	3.80	86	3.65	-2
Iran (I.R.)	15	90	3.79	88	3.61	-2
Thailand	16	95	3.54	94	3.42	-1
Indonesia	17	97	3.43	97	3.14	0
Philippines	18	98	3.34	98	3.14	0
Tonga	19	101	3.23	101	3.09	0
Sri Lanka	20	107	3.06	107	2.92	0
Bhutan	21	118	2.40	117	2.19	-1
Cambodia	22	120	2.30	121	2.05	1
India	23	121	2.21	120	2.13	-1
Lao P.D.R.	24	123	2.10	122	1.99	-1
Solomon Islands	25	125	1.97	124	1.91	-1
Pakistan	26	129	1.83	128	1.78	-1
Myanmar	27	134	1.74	132	1.70	-2
Bangladesh	28	135	1.73	139	1.62	4
Average*			**4.37**		**4.20**	

Note: *Simple average.
Source: ITU.

The regional digital divide is very pronounced in the Asia and the Pacific region. The region is home to some of the IDI's front runners, including the global number one, the Republic of Korea. Other economies with high IDI values, above the global (4.35) and the developed-country (6.78) averages, include Hong Kong (China), Australia, Japan, Macao (China), Singapore and New Zealand. This group of economies clearly stands apart from the rest of the Asia and the Pacific region, and the gap between the regional number seven (New Zealand, with an IDI of 7.64) and number eight (Brunei Darussalam with an IDI of 5.06) is striking. While Brunei Darussalam, Malaysia and the Maldives still have IDI values above the global average, the remaining Asia and the Pacific countries do not. The gap in IDI values becomes even more severe at the bottom of the regional ranking: 12 countries have IDI values below the developing-country average of 3.44. Solomon Islands, Pakistan, Myanmar and Bangladesh have the lowest IDI values in the region, and rank very low globally.

Three countries from the Asia and the Pacific region – Australia, Bangladesh and Mongolia – are among the most dynamic in the 2012 IDI. Australia's IDI value increased thanks mostly to advances in the use sub-index, in particular in regard to wireless-broadband penetration, and the country was able to overtake Japan in the IDI ranking. Bangladesh made most progress in the access sub-index, in particular with regard to mobile-cellular penetration and international Internet connectivity.

Nonetheless, Bangladesh still remains at the bottom of the regional ranking and in 135th position globally. Mongolia, on the other hand, moved up five places in the global IDI between 2011 and 2012, overtaking both Viet Nam and the Islamic Republic of Iran. A comparison of the global rankings in 2011 and 2012 shows that the majority of Asia and the Pacific countries are falling behind in international comparison (i.e. losing at least one place in comparison with the previous year).

The region's developing countries improved mostly in the access sub-index, while the high-income developed countries generally progressed most on the indicators included in the use sub-index. This reflects the three stages of the conceptual framework upon which the IDI has been built. Cambodia is the country registering the highest increase in the access sub-index

regionally and indeed improved well above the global average (0.18). An increase in mobile cellular penetration, the second highest in the region, is mostly responsible for this improvement. Penetration increased by 37 per cent, reaching 132 per cent by end 2012. On the other hand, some of the countries with the lowest penetration, most notably India and the Islamic Republic of Iran, added very few new mobile-cellular subscriptions in 2012. The proportion of households with Internet access is highest globally in the Republic of Korea (97 per cent), followed by New Zealand (87 per cent) and Japan (86 per cent). A number of developing countries saw significant increases in household Internet connectivity, and hence average growth in the access sub-index. The proportion of households with Internet access improved by more than 21 per cent in China. With this increase, China reached the global average of 37.4 per cent.

Wireless broadband is the most dynamic indicator in the use sub-index, but there are large disparities in terms of penetration and growth rates throughout the region. A number of countries from the Asia and the Pacific region still do not have a commercially available 3G network by end 2012, including Bangladesh, Islamic Republic of Iran, Pakistan, Tonga and Thailand. In those countries, satellite broadband and fixed (wireless)-broadband subscriptions, in particular WiMAX, were the main wireless-broadband technologies available. The highest increase took place in countries with a well-developed mobile-broadband market and high penetration rates, such as Macao (China), Australia and Hong Kong (China). Indonesia attained a wireless-broadband penetration of 32 per cent, above the global average of 22 per cent: 3G was launched in Indonesia as early as 2006 and services there are among the most affordable in the region. Asia and the Pacific countries with a well developed ICT infrastructure display high levels of fixed (wired)-broadband penetration. These include, for instance, Hong Kong (China) (31.5 per cent), New Zealand (28 per cent), the Republic of Korea (38 per cent) and Singapore (26 per cent). Fixed (wired)-broadband penetration is generally low in the region's developing countries. China is an exception, with a fixed (wired)-broadband penetration of 13 per cent. This represents a total of close to 176 million number of subscriptions at end 2012, over 20 million more than in 2011. China also has a large number of fibre connections, and ranks relatively high globally in terms of its fibre-to-the-home/building penetration (close to 5 per cent in mid-2012). Apart from China, only Malaysia (8 per cent), Maldives (5.5 per cent) and Thailand (6 per cent) have a fixed-broadband penetration above the developing-country average of 5 per cent by end 2012.

3.4 Waseda University International e-Government Ranking

3.4.1 Background

The Waseda University Institute of e-Government, Japan, has been continuously monitoring and researching on the development of e-Government strategies of Asia Pacific Economic Coorporation (APEC) member economies since 2004. The Institute is also in charge of the APEC e-Government Research Centre.

The research is being carried out by Waseda University in cooperation with International Academy of CIO with partner universities.

3.4.2 Ranking 2013

According to the ranking, the top 5 countries are, Singapore is No.1 with 94 points, Finland in 2nd position with 93.18 points, USA with 93.12 points, Korea with 92.29 points, and UK with 88.76 points. Followed by Japan, Sweden, Denmark, Taiwan, and Netherlands.

There are seven main indicators used to rank the e-Government development of countries in the world. The indicators are, Network Preparedness, Required Interface-functioning

application, Management Optimization, National portal, CIO in Government, e-Government Promotion, and e-Participation (Digital Inclusion).

3.4.3 New Trends found from the Survey

3.4.3.1 Cloud Computing

Cloud computing is the delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service over a network. Related to e-government, public sector can take advantage of those improved conditions for development and deployment of e-government solutions. This can be achieved through the adoption of new architectures such as cloud computing and service-oriented architecture, in the public sector. Cloud computing permits to uniformly cover the whole country with e-government solutions, independently of divergence of local administrative units that may be better or worse prepared to provide e-services. Service-oriented architecture facilitates provision of compound services covering whole customer processes, E-Governance with cloud computing offers integration management with automated problem resolution, manages security end to end, and helps budgeting based on actual usage of data. At the global level, cloud architectures can help government reduce duplicate effort and increase effective utilization of resources. This in turn helps the government to reduce pollution and manage waste effectively. Through cloud computing, e-Government can rapidly deploy applications where the underlying technology components can expand and contract with the natural ebb and flow of the business life cycle**.**

3.4.3.2 Mobile government and Social Media

m-Government, is the extension of e-Government to mobile platforms, as well as the strategic use of government services and applications which are only possible using cellular/mobile telephones, laptop computers, personal digital assistants (PDAs) and wireless internet infrastructure.

Mobility is no longer a technological revolution. It is more about how businesses and governments can provide a better social infrastructure through mobile applications and services. Adoption of mobility, therefore, is an indispensable asset for the public sector in meeting the demands of citizens. While e-Government is an important step taken by many governments, the provisions of services through mobile technologies is now becoming compulsory. m-Government emerges as the next big wave in the process of ICT use in the public sector even if supplemented activities to e-Government. Mobile Government is primarily concerned with the study of these major social and technological changes in the public sector.

The main trends in e-Government in all developed governments are integrated social media with privacy protection issues. Government can use social media to connect with citizens or businesses to exchange information interactively. Social media has substantially changed the way that organizations, communities, and individuals communicate. Social media provides a powerful platform to help government communicate directly with citizens and be more visible on the Web.

3.4.3.3 Open Government

The open government can be defined as, the transparency of government actions, the accessibility of government services and information and the responsiveness of government to new ideas, demands and needs. Together, these three building blocks are seen to support a number of benefits for government and societies: improving the evidence base for

policy making, strengthening integrity, discouraging corruption and building public trust in government. The open government agenda is transforming how governments around the world conduct their business. Characteristics: are as follows: 1. Agile and friendly access of public service. 2. Real-time government information /services 3. Applications of Social Networking to enhance interactions of both government and the public. 4. Utilization of Open data. 5. Transparency of e-Government. 6 Need of Global standard.

3.4.3.4 BCP for disaster management

A Business Continuity Plan (BCP) / Disaster Recovery Plan aim to ensure that an organization's critical business functions can continue to be executed in the event of a major disruption or disaster. The organization is more resilient, survives the event and is able to minimize the impacts/damages on its business operations.

In the aftermath of terrorism and recent natural disasters such as the earthquake in Japan on 11th March, 2011 and flooding in Bangkok in October, 2011, the government and businesses have recognized more than ever the need of preparedness for disasters and cyber terrorism. Companies are striving to meet the demand for continuous services. With the growth of e-Commerce, e-Government and other factors, system availability expectations are driven toward 24Hx365D. To recover all the activities and databases, it is necessary for e-Government to prepare BCP for disaster management.

3.4.3.5 Digital Inclusion in Ageing Society

Digital inclusion, like accessibility, is a term that is rarely explicitly defined. Digital Inclusion is concerned with addressing inequalities, where those unable to access technologies are disadvantaged and marginalized in society and therefore digitally excluded. The term is related to activities such as Access and Digital Inclusion, Use and Digital Inclusion, Participation and Digital Inclusion, and Empowerment and Digital Inclusion.

Regarding the e-Government concept, Digital Inclusion means both inclusive ICT and the use of ICT to achieve wider inclusion objectives. It focuses on the participation of all individuals and communities in all aspects of the information society. One of the problems that many countries are facing today is the ageing population i.e. increase in the proportion of older people (Japan is a typical example) which requires bigger funds for social welfare and the support of government. In this regard, ICT can be applied to solve the issues caused by a rapidly ageing population even in the global context. For instance, ICT can help in providing new and flexible tele-conference and e-learning opportunities, which connect senior people to each other and to younger generations.

Through the research carried out by Waseda University, it was found that the ICT application for Ageing Society is becoming extremely important. Furthermore, it is an opportunity which should be taken by government in order to have comprehensive and speedy solution to fully apply ICT on this issue.

3.4.3.6 Cyber Security and National ID card

Cyber-attacks are seriously concerned with e-Government security in any countries. Cyber security can simply be defined as security measures being applied to computers to provide a desired level of protection. E-Government operations are increasing with citizen demand for timely and cost effective services. Security associated with individual systems is similar to many e-Commerce solutions. The span of control of e-Government and its impact across a community defines a system that is more than a sum of individual systems. E-Government faces the same challenges that faced e-Business in private sector.

In fact, in most countries, each citizen has a number of different types of identification issued by different authorities. It is difficult for other agencies to retrieve information from one another when they need it, therefore the new trend is, integrated personal information into a centralized database -one ID card for one stop service.

3.5 e-Government Best Practices in Republic of Korea

3.5.1 Electronic Customs Clearance System

- Declarations are handled electronically through a network of institutions related to e-customs including exporters, importers, air-carriers and bonded transporters. Users can benefit from all major features through the Internet under the best security conditions.
- Air-carriers and shipping companies transfer the list of passengers and goods to the customs authority, which then manages following procedures regarding port entry, cargo release or shipping for export.
- Selecting imported goods for inspection, distributing declaration forms, export/import statistics, banking notification to authority, payment receipt confirmation by authority and other procedures are handled online.
- Information on passengers and goods is received prior to their arrival, which helps analyze or even block any possible threats by using advanced monitoring devices.

3.5.2 Digital Budget and Accounting System

- Based on the program budget framework, the entire process of budget-related affairs regarding mid-term project plans, budget compilation for each year and budget allocation is managed altogether.
- Transactions that occur simultaneously with the execution of national funds are automatically classified on a real-time basis and used in performance management after cost accounting for each program. National funds, assets, bonds and debt are also managed through the system.
- Through a connection with outer systems, dBrain provides electronic money transfer and electronic bill payment services.
- The data on financial transactions accumulated within the system are provided in forms of customized reports and graphs.

3.5.3 National Disaster Management System (NDMS)

- NDMS shares and delivers in real-time 223 types of disaster management information, which before had been individually maintained and managed by 43 institutions.
- It also provides via smart phones the Cell Broadcasting Service (CBS), response manual for citizens and information on facilities like fire stations and hospitals.
- It provides immediate response and rescue services, where emergency119 calls are received promptly and accurately (via fixed-line or wireless telephone, Internet and text messages), caller locations are automatically identified, and moving orders are given real-time to the most suited fire squads.
- Emergency 119 services are also provided to socially vulnerable groups and disadvantaged groups including the senior citizens and foreigners by applying new technologies such as the mobile phones that are specially designed for the elderly (called Anshim-Phone) and ‘ Help-me 119’ .

3.5.4 Immigration Control System

- Passenger information is delivered to the immigration authority from air carriers before their entry. The analytic results are displayed on the monitors of immigration counters for officers to use, facilitating faster immigration.
- By applying e-passport IC chip reading technology to the existing passport reading system, forged passports can be detected immediately and accurately through the process of chip certification.
- By applying bio-information (facial images) and biometrics technology (fingerprints) to immigration control, automatic immigration is possible without having to pass through the checkpoint counters.
- Comparing the information of passengers moving toward transit zones to the information of passengers actually on board allows the detection of illegal transit.
- Fingerprint data of entering foreigners entering Korea aged 17 or older and of unregistered foreigner staying in Korea for 91 days or longer are collected and utilized for accurate identification of disaster or accident victims and crime investigations.

3.5.5 On-line e Procurement System

- The entire process of procurement, such as supplier registration, bidding, contracting, inspection, payment and others, is undertaken electronically through KONEPS.
- KONEPS serves as the single window, through which bidding information of all public institutions is announced. All public organizations can participate in bidding with a one-time registration process through KONEPS.
- By connecting itself to more than 120 external systems of government institutions, KONEPS provides one-stop procurement services.
- KONEPS provides its mobile service, enabling bid submission via mobile phone.
- Goods management is conducted by using the latest RFID-based management system.

3.5.6 Comprehensive Tax System

- Taxpayers who visit tax offices can go through the entire process of application services using electronic pens.
- Certificates of tax payment: a total of 39 types of online certificates are issued.
- documents certifying business license or registration, temporary closing, tax payment and amount of incomes
- Tax returns are filed through the Internet.
- A total of 14 tax types including income tax, corporate tax, VAT, withholding tax, individual consumption tax, liquor tax, stamp tax, an education tax
- Tax payments are made through HomeTax.

3.5.7 Postal Logistic Information System

- Integrated processing of postal information; Affairs regarding delivery and arrival of received mail, transportation schedule, performance and settlement are managed. Mail is delivered using real-time mobile devices (PDAs) and customers receive expected delivery time and result by text message to their mobile phone. 24 mail sorting centers, 6 logistics centers and 3,600 post offices throughout the country are all connected and the postal delivery network is managed in real-time by the central monitoring & control center.

- Internet and mobile postal service; Individual customers can access e-Post on the

Internet to use parcel door to door delivery service, EMS, hybrid mail service and registered mail tracking services. Smart phone users can enjoy postal services such as parcel delivery/EMS, tracking, and purchasing products in the e-Post shopping mall anytime and anywhere.

- Postal business support using IT; The amount of mail being received, transported and delivered, locations of transportation vehicle as well as their load quantities, and the entire postal delivery network can be followed and understood at a glance, providing better control over vehicles and mails to respond promptly and accurately to unexpected situations. The system also supports sales marketing activities including usage analysis of major customers and management of their anniversaries, which contribute to enhancing customer values.

- Customers can access postal call centers to enjoy one-stop services.

3.5.8 SOS Public Relief Service

- The service consists of three sub-level services, available for each type of users communication devices. One-touch SOS (for feature phones and smart phones), 112 App (for smart phones), and UAnshim (for terminals specifically designed for the service).
- One-touch SOS service: A feature/smart phone holder presses (or touches) the shortcut button on the phone to call the police in case of emergency. The location and identity of the caller is displayed in the main center upon the caller' s report, which allows fast dispatch of the police and immediate actions to be taken.
- 112 App service: A smart phone holder touches the pre-downloaded 112 Emergency Call application to call the police. The location and identity of the caller is displayed in the main center upon the caller's report, and text messages for emergencies are also accepted.
- U-Anshim service: A service subscriber without any feature or smart phone presses the button on the terminal that is specifically designed for the service and inform his/her guardian of their in urgent situation.

3.6 The Way Forward

The UN e-Government Survey Report identifies and prioritizes the under mentioned requirements.

First, is the role of national governments in tapping into the transformative nature of e-government for sustainable development as it relates to whole-of government approaches and multichannel service delivery. In this regard countries should, at a minimum, establish a persistent online presence with at least basic services in order to build trust in government.

Second, is the shift from a structurally disintegrated government to one that is a more interconnected single-purpose whole-of-government. This will require collaboration and streamlining not only along the whole spectrum of governance but also with private sector and civil societies. Prerequisites for achieving this shift include long-term vision and leadership commitment, a strategic framework, an IT management programme aligned with the overall strategy, and technical integration of IT systems. Whole-of-government practices will not only boost efficiency of government agencies but also utilization of public services if properly administered in accordance with a clear strategy and motivated leadership.

Thirdly, since the digital divide is still an obstacle, mainly due to non-availability of infrastructure such as broadband and differences in skills and lack of means to access information, it is vital for governments to learn from global best practices and collaborate

internationally to develop a harmonized framework with indigenous ICT content. An effective approach must address both accesses to infrastructure as well as well as barriers to using online services that may persist even when such access is available.
Fourth, is the need to reach out to all citizens, particularly the disadvantaged and vulnerable groups, in order to bridge the gap and maximize the utilization of online service delivery. However, governance processes for the effectiveness and benefit of all cannot be realized without a well-established coordination framework encompassing the involvement of all national and international stakeholders, including third party organizations, which can play a pivotal role in the process. This is particularly important in the context of multichannel service delivery, where it is important to follow an evolutionary rather than a revolutionary approach to developing new channels. In other words, service delivery via new channels should not come at the expense of service delivery via established channels.

Fifth is, the low usage and user uptake. This indicates that e-services up-take has untapped potential for the improvement of service delivery in line with citizen demand.

Chapter 4: Profiles of the Survey Organizations and Respondents

According to the Terms of Reference, the consultant in consultation with the client selected the following sample of government organizations and 404 respondents for the e-Government Survey,

1. Foreign employment Bureau
2. Department of Motor Traffic
3. Department of Pensions
4. Registrar of Companies
5. Land Registry in 4 Districts
6. Department of Import & Export Control
7. Divisional Agrarian Service in 4 Districts
8. Local Authorities in 4 Districts
9. Department of Inland Revenue
10. Department of Labour
11. Divisional Secretariat (20 DVS in 9 provinces)

4.1 Profiles of the Survey Organizations

4.1.1. Sri Lanka Bureau of Foreign Employment

The Sri Lanka Bureau of Foreign Employment (SLBFE), the foremost organization looking after the welfare aspects of Sri Lanka's migrant workers and their families was established in 1985 under Act No. 21 and amended by Act No. 4 of 1994 and Act No.56 of 2009, which is the primary legislation that deals with foreign employment.

From the outset, the SLBFE operated under the supervision of the Ministry of Labour and in the year 2007 it was transferred to the newly created Ministry of Foreign Employment Promotion & Welfare (MFEPW), and was given tasks that include the formulation and implementation of foreign employment policies & promotion programs. Today, the SLBFE is a public corporation with over 800 employees in nine major departments and is governed by a Board of Directors. The Bureau also has 07 Regional Centers throughout the country and receives its power, duties, and obligations from the above mentioned legislation. The mandate of the SLBFE encompasses promotion and protection of migrants by setting standards and approving or rejecting the contracts provided by foreign employers to Sri Lankan migrants, licensing recruiting agents, and operating programs to protect Sri Lankan migrants and their families. Over the past two decades, the SLBFE has given the highest priority to promoting foreign employment. Hence, the SLBFE maintains a database that lists jobs available by country and by local recruiting agent.

ICTA in collaboration with the Sri Lanka Bureau of Foreign Employment (SLBFE) has launched the e-Foreign Employment project as one of the pilot e-services considering its high impact, and visibility required to attract both, citizens and businesses. Presently, the foreign employment is the largest net foreign exchange earner, main source of employment for the citizen, and is a critical sector in the Sri Lanka economy which is growing rapidly. ICTA and SLBFE mutually agreed to implement the e-Foreign Employment project as a priority project under the e-Sri Lanka Development initiative to make the services of SLBFE more efficient and effective by using Information and Communication Technologies.

The objective of the project is to increase efficiency and effectiveness of the entire process of foreign employment registration and placement through an ICT driven system of management. The system will provide a web based solution for the management of foreign

employment registration, faster and more efficient method for job order approval, and easier access to the Bureau.

The project will facilitate the management of workflows, documents, databases and other related information electronically in relation to the following processors.

a) Agency Licensing - This module allows an employment agency to submit its application to start a new employment agency, both in Sri Lanka and in other countries. The module also allows a current agency to register new branches and submit the relevant document to SLBFE.

b) Job Order Approval - The Job Order Module is to allow both local and foreign employment agencies to create job orders, which then creates alerts to inform the relevant Foreign Missions that new job order are ready for inspection.

c) Lodging of Complaint - The purpose of this module is to allow SLBFE to capture information on complaints lodged with the Bureau. The module also allows for recording of, the actions taken to resolve the complaints, and both interim and final results from the investigation.

d) Public Information - The purpose of this module is to allow SLBFE to publish information related to employment details of Sri Lankans overseas

e) Welfare - The purpose of this module is to allow SLBFE to publish information related to welfare of migrants during different phases of migration process. i.e before departure, during overseas employment and upon return to Sri Lanka.

f) Training Information - The purpose of this module is to allow SLBFE to publish information related to the training requirements for employment overseas, of Sri Lankans.

4.1.2 Department of Motor Traffic

Department of Motor Traffic (DMT) is responsible for the administration of, registrations of vehicles, Licensing of Drivers, Regulating vehicle omissions, and other vehicle related issues, under the Motor Traffic Act No. 14 of 1951, amended by Act No. 9 of 2009.

The DMT computerized its major activities in 1980 by using a legacy system, later it was converted to a client-server system. The e-Motoring project aims at developing, implementing and deploying a comprehensive ICT solution to provide effective and efficient delivery of selected citizen services of DMT and the Provincial Department of Motor Traffic (PDMT). The activities which are related to providing citizen services with regard to motor vehicles by DMT, PDMT, District Secretariats and Divisional Secretariats are re-engineered, where-ever necessary, and automated. The manual files were replaced with digital records. The ICT capacity of the staff of all client organizations was upgraded to meet the HR requirements of the project.

The project is to create and populate the database which would be referred to as the Vehicle Registry and it will be owned by the DMT. This would be the major output of the project and the Vehicle Registry would be accessible by other relevant agencies such as the Police Department. The office of the PDMT was also equipped with an ICT based system to perform its functions relating to motor vehicles.

The software systems were introduced related to the functions of the DMT as well as the PDMT.

- Issuance of revenue License
- Issuance of fitness Certificate
- Registration of Motor Vehicle Traders
- Issuances of Omnibus Certificate

4.1.3 Department of Pensions

The Department of Pensions is solely responsible for the payment of retiring benefits to the retired public officers monthly, policy formulation with regard to pensions of public officers, and by executing it efficiently and productively assures well being and future protection to public officers, their spouses, and dependents.

Initially, Civil Pensions Scheme was functioning since 1901. Early stages of this pension scheme was directed by the Additional Controller of Establishment of the General Treasury. Subsequently, the Department of Pensions was established in 1970 under the purview of the Ministry of Public Administration & Home Affairs. The annual payment of pensions by this department is around Rs. 103 billions.

Objectives & Functions of the department:

- Formulate pension policies with regard to officers in state, provincial councils, and armed forces, subject to provisions of “minutes on pensions” and “payment of various allowances”.
- Functioning widows’, widowers’, and orphans’, pensions scheme for widows’, widowers’, and orphans’, of public officers.
- Implement public service provident fund for officers who draw non pensionable monthly salary.
- Functioning local government widows’, widowers’, and orphans’, pensions scheme for local government service officers widows’, widowers’, and orphans’.
- Coordinate and administrate payment of pensions at national, district and divisional level.
- Maintain a proper relationship with "civil society" led by pensioners’ associations.

Approximately 600,000 pensioners and roughly Rs. 300 millions of funds are disbursed monthly as pension payments. Although pension grants are computed at the Department of Pensions, the monthly pension payments are made at Divisional Secretariats.

Although an attempt was made to create a central database at the Department of Pensions, the central database was never updated with relevant information from Divisional Secretariats since its creation due to the absence of a mode of connectivity and functional imperfections. It is also observed that a fully functional IT solution has also not been produced and supplied to Divisional Secretariats. Later a Local Area Network (LAN) was established at the Department of Pensions to monitor progress of processing applications. However due to the absence of an integrated information management system which can expedite application processing, computation of pensions grants, and file tracking, the Department of Pensions experienced long delays in application processing and attending to pensioners’ grievances. The irregularities in various pension schemes have gone unattended as the complaints have piled up and its too much for the limited number of staff to attend. This has made it necessary for the pensioners to visit the Department of Pensions several times to attend to their pension issues.

Therefore, ICTA had prioritized the implementation of the e-Pensions Project to overcome these issues.

In particular e-Pensions is aiming at achieving the following goals to serve the citizens better.

- **Registration of Applications** - To reduce the return of applications due to errors to 5% of the total applications received and to reduce the time taken to issue a Registration Number to 2 days.
- **Collection & Management of Contributor funds** – To ensure all deductions from salaries are received within 2 months at the Department of Pensions and recorded and to generate annual statements to contributors within 2 months after year end.
- **Processing of OAFA Payments** - To ensure Retiring Gratuity is paid and Award Letter is issued to 95% of Pensioners on the date of their retirement and the other Gratuity payments to be paid within a week of receiving the claim at the Payment Unit.
- **Processing of Regular Payments & Revisions -** To ensure all pensioners receive their monthly pension during the month following their retirement and to ensure W&OP Pension is paid to the dependents during the month following the death of the Pensioner.
- **Handling of Queries -** To ensure all non-complicated queries are sorted out immediately and the others within a period of one week (7 days) by a special group of trained officers using information on the system and to ensure all other queries are resolved within one week from the date of the Policy Committee Meeting.
- **Managing Records -** conduct checks on 1% of records once a quarter to ensure all documents checked are in the Record Room and to ensure any file/document could be retrieved within 30 minutes of making request.

4.1.4 Registrar of Companies

The Department of Registrar of Companies was established in 1938, and the affairs relating to the registration of companies was assigned to it. This was introduced in order to put into operation the provision under the Companies Act No. 51 of 1938.

In fact, the registration of companies had been inaugurated long before that. It is observed that the work with regard to registration of companies had been in operation since the introduction of the Joint Stock Companies Ordinance in the year 1861. During this time, Sri Lanka was under British colonial rule, the work relating to registration of companies had been assigned to the Registrar General's Department, under the ordinance of 1861. One of the subjects assigned to the Registrar General's Department, which was under the Secretary General of the British Colonies was, the registration of companies.

In introducing the new ordinance, the necessity of a separate institution under one individual to fulfill the needs of the companies that would be incorporated, and to effect the provisions and other enactments of this ordinance, has been mentioned. Accordingly the Department of Registrar of Companies was established in the year 1938. Thereafter, incorporation of companies, and other activities, performed by the Registrar General's Dept. were transferred to this Department of Registrar of Companies.

On the request of the Ministry of Trade and Department of Company Registrar, ICTA agreed to provide Project Management support and Procurement Support to this e-ROC project under the e-Sri Lanka Initiative.

Currently 1276 companies registered under the Joint Stock Companies Act (456 companies incorporated and registered in Sri Lanka and 820 Joint Stock Companies) and 10,460 companies (8784 Private Companies, 1160 Public Companies, 50 Guarantee Companies, 85 Associations, and 381 Foreign Companies) under the Companies Act No. 51 of 1938 have been registered with the Registrar of Companies.

4.1.5 Land Registry

The Land Registry comes under the purview of the Department of Registrar General. The Department of Registrar General was formed for registration of, Births, Marriages and

Deaths of the populace Sri Lankan, and legal documents pertaining to properties, with a view to safeguarding their fundamental rights.

This Department was initially established in 1864 for the purpose of registering land, and civil registration; registration of births, marriages and deaths. In 1867 Civil registration activities were decentralized to the Divisional Secretariat level and accordingly a District Registrar's Division was operating in all 332 Divisional Secretariats. Land registration process was carried out in district level and 42 Land Registries were established in the Island for the purpose.

The Registrar General's Department is operating under the Ministry of Public Administration and Home Affairs.

Objectives of the Land Registry

- Registration of legal documents relating to movable & immovable properties
- Preservation of records pertaining to such registration
- Issue of certified copies from such records

4.1.6 Department of Import and Export Control

The Department of Import and Export Control established under Act No. 1 of 1969 with a view to control import of goods into the country and export of goods from the country. This Department plays a major role in the economy of the country as almost all the imports and exports are being subjected to the license requirement. There were many restrictions on imports and exports and therefore, the volume of work performed by the Department was very heavy prior to 1977.

In the Open Economic Policy of the country, which commenced in the year 1977, most of the restrictions on imports and exports were liberalized. Since then, license requirement for import / export of goods was liberalized in respect of all items other than Drugs, Chemicals, Telecommunication Equipments, Firearms, etc. These restrictions were imposed with a view to avoiding undesirable imports to the country which could adversely affect, public health, Environment, Economy, and Security, of the country.

Objectives of the department;

- To Implement the government policy on import and export
- To avoid importation of goods undesirable for public life
- To protect local products and industries
- To protect national identity of export items
- To maintain the standards of imported goods
- To avoid misuse of foreign exchange in importation of goods

Functions of the department;

1. Issuance of license for restricted items
2. Collections of license fees.
3. Publishing regulations to implement government policy on Import & Exports.
4. Advice & assist the director General of Customs & the Controller of Exchange on matters pertaining to Import & export Control Regulations.

4.1.7 Divisional Agrarian Services

The Divisional Agrarian Services comes under the purview of the Department of Agrarian Development. The Department of Agrarian Development (DAD) was established in 1957 with the purpose of providing supply services that are initially for Agriculture schemes empowered by the Paddy Land Act No. 1 in 1958 and presently governed by the Agrarian Development Act No.46 of 2000.

The objectives of the Department of Agrarian Development are;

- Formulation and implementation of Agrarian Law to safeguard tenancy as well as land owner rights under the Paddy Lands Act..
- Strengthening and development of Farmer's Institutions.
- Agriculture Land Management.
- Water Resource Management

Services of the Divisional Agrarian Service Centers;

- Providing Agriculture loans and Marketing of agricultural produce
- Supply of Agriculture inputs.
- Undertake minor Irrigation improvements and rehabilitation.
- Apply Price Control for agriculture inputs.
- Supply Agriculture Instrument.
- Conduct Agriculture Land Management.
- Empower the Paddy Land Act No.01 in 1958 as presently governed by the Agrarian Development Act No. 46 of 2000.
- Develop a special database for paddy lands using high resolution satellite images.
- Introduce a soil health cards system in Sri Lanka to evaluate soil characters and Soil fertility

It was revealed from the KIIs conducted, that the District Level Agrarian Services centers hardly use ICT for day to day activities; ICT literacy of the staff is poor; all work is handled manually. Farmers who are the clients of these centers also have no ICT Literacy or ICT facilities.

4.1.8. Local Authorities

Local authority is the third and lowest level of government in Sri Lanka – after the central government and provincial councils. The local government bodies are collectively known as local authorities. They are responsible for providing a variety of local public services including roads, sanitation, drains, housing, libraries, public parks, and recreational facilities. Local authorities are divided into three different groups: Municipal Councils, Urban Councils, and Pradeshiya Sabha. As of now, there are 335 local authorities (23 Municipal Councils, 41 Urban Councils and 271 Pradeshiya Sabha). All local authority members are elected using the open list proportional representation system.

Local authorities do not derive their powers from an individual source but from numerous Acts and Ordinances. The main Acts relating to local government are the *Municipal Council Ordinance No. 29 of 1947*, the *Urban Councils Ordinance No. 61 of 1939*and the *Pradeshiya Sabha Act No. 15 of 1987*. As a consequence the three different types of local authorities have slightly different powers. Municipal Councils have more powers than Urban Councils and Pradeshiya Sabha.

Local authorities have the power to instigate legal action, enter into contracts, acquire land and employ staff. However, these powers are somewhat curtailed by the fact that they are

subordinate to the Central Government and Provincial Councils, and by the fact that other state institutions (such as the District Secretary) enjoy similar powers as the local authority.

Basic Responsibilities of Local Authorities;

As far as the functions are concerned, Local Authorities are expected to provide basic services for the comfort, convenience and well-being of the Community of their area of jurisdiction. Under this, the Local Authorities are expected to provide mainly the following types of services to the Community. These are;

1. Public Utility Services
2. Primary Healthcare
3. Public welfare
4. Community Development
5. Preservation and Development of Environment
6. Revenue Management

It was revealed from the KIIs conducted, the Local Government Authorities except Colombo Municipal Council, use minimal ICT related activities for day to day work; ICT literacy of the staff is poor; almost all the work is handled manually.

4.1.9 Department of Inland Revenue

Income tax was first introduced in Sri Lanka in 1932 and the First year of Assessment was 1931/1932. The Income Tax Department was established in the same year to administer this tax. Estate Duty and Stamps offices which operated separately were amalgamated with the Income Tax Department in 1933 and named as “Department of Income Tax, Estate Duty and Stamps”.

Later on the Department of Income Tax became a closed service with the establishment of the Department of Inland Revenue. The Department of Inland Revenue is solely responsible for policy making in the Inland Revenue in respect of direct and indirect taxes and collection of tax from tax payers according to the rule of law. The Department of Inland Revenue administers a number of taxes including Income Tax, Value Added Tax, Stamp Duty, PAYEE Tax, With Holding Tax, Betting & Gaming Levy, Nation Building Tax, Economic Service Charge, Share Transaction Levy, Social Responsibility Levy, etc.

The Inland Revenue Department makes a lot of effort to be a taxpayer friendly tax administrator, delivering excellent service to the taxpaying public, with well trained and dedicated staff to collect taxes in-terms of relevant tax and other related laws, by encouraging voluntary compliance while deterring tax evasion and tax avoidance, and enhancing public confidence in the tax system administered by the Department of Inland Revenue in a fair, friendly and expeditious manner and thereby facilitating a beneficial tax culture.

The main objectives of the Inland Revenue Department;

- To improve voluntary compliance by taxpayers with the tax laws through programs which encourage and assist that and detect those who do not comply and, where necessary, take appropriate corrective action.
- To improve the effectiveness of the department by the application of efficient work methods, technology, and better utilization of available resources.

- To enhance the productivity and professionalism of the staff through management and technical training, work experience, and thereby to enable them to contribute more effectively towards the fulfillment of its mission.

4.1.10 Department of Labour

The Department of Labour was established under the Indian Immigrant Labour Ordinance No.1 of 1923, with the objective of providing welfare for migrant Indian estate labourers. With the gradual realization of the Importance of the Local Labour Force, activities pertaining to the security and welfare of Labour Force were entrusted on the Labour Controller. Later, the Post of Labour Controller was changed to the Commissioner of Labour, and in 1994, the Post of Commissioner General of Labour was created with comprehensive powers. The legislature has taken steps to pass about 50 basic legislations during the past 87 year period towards the welfare and protection of the Labour Force. The fundamental function of the Department of Labour is to implement these legislations. For this purpose, these functions are implemented Under 13 Principal Divisions of the Department, and in addition, 11 Zonal Labour Offices, 39 District Labour Offices, 17 Sub-Labour offices, and 10 District Factory Inspecting Engineer's Offices, are functioning.

Services provided by the Department of Labour include the following;

- Support guidance and assistance to Trade Unions Granting Housing Loans from Employees Provident Fund
- Provide guarantee for Employees Provident Fund contribution, on closure of business/ acquisition by Government
- Facilitate withdrawal of Employees Provident Fund contribution
- New Registration and Re-registration of Employees to the Employee Provident Fund
- Release of benefits on appointment to a permanent and pensionable post
- Retirement from Service due to permanent disability
- Obtaining Employees Provident Fund contribution on retirement due to marriage
- Registration of Factories under Factories Ordinance
- Termination of employment according to the prevalent laws
- Obtaining Employees Provident Fund contribution on death of a member
- Re-making of complaints for which no solutions have been received from the District Offices
- Referring Complaints/ Petitions on Children and Women, Under the Labour Laws

4.1.11 Divisional Secretariats

Divisional Secretaries are the Central Government Representatives at divisional level. All state activities are represented by the Divisional Secretariats providing administrative functions by providing public services.

This is the third level of the public services provided by the government; Central Government, District Secretariat, and Divisional Secretariat. Divisional Secretariat carries out its functions under the purview of the District Secretariats.

The following are the basic services provided by the Divisional Secretariats.

1. Civil Registrations

- Birth/Marriage/Death Certificates
- Approximate Age Certificates
- National Identity Cards (Pre-Processing)
- Passports (Pre-Processing)

2. Issuance of Permits / Licenses

- Issue of Licenses/Recommendations
- Land Development Licenses
- Long Term Lease Land Licenses
- Temple Inaugural Rate Licenses
- Annual Land Permits
- Tree Felling Licenses
- Timber transportation licenses
- Furniture transportation licenses
- Animal Transportation Licenses
- Elephant Parading Licenses
- Business Name Registration Permits
- Permit to Close Businesses
- Liquor Permits (New Issuances/Renewals)
- Pawning Permits (New Issuances/Renewals)
- Mining Permits (New Issuances/Renewals)
- Gun Powder Permits
- Vehicle Revenue License Renewal

3. Issuing of Certificates

- National Identity Cards (Pre-Processing)
- Passports (Pre-Processing)
- Birth/Marriage/Death Certificates
- Income Certificates
- Valuation Reports
- Valuation Certificates
- Proof of Residency Certificates
- Leaving of Residence Certificates
- Certificates to Obtain Water Facilities
- Certificates to Obtain Electricity Facilities

3. Payment of Pensions

- Payment of Pensions

4. Land Administration

- Obtaining the Ownership of Lands
- Distribution of Lands
- Changing the Ownership of Lands
- Naming/Changing the Successor
- Transferring Deeds to a new Successor
- Annual Rentals
- Harvest Rentals
- Long-term Rentals
- Allocation of Lands for Religious Places

5. Samurdhi Program

- Issuance of Samurdhi Cards
- Co-Administration of Samurdhi Stamps
- Co-Administration of Samurdhi Insurance Scheme
- Co-Administration of Samurdhi Lottery
- Co-Administration of Samurdhi Projects

6. Social Welfare and Benefits

- Providing Casual Relief
- Providing Low Income Relief
- Providing Relief for Illnesses

7. Development Program

- Programs of De-Centralized Budget
- Programs of Provincial Councils
- Programs of the Line Ministry
- Special Programs of the Government
- Preparation of Consolidated Development Plan
- Preparation of Resource Profile of the Area

4.2 Profiles of the survey respondents

The composition of the Gender, Age Groups, Ethnicity and ICT literacy levels of the citizens is presented in this section. The computer usage, internet usage, availability of ICT facilities and literacy level of different provinces is highlighted. This section will analyse the visitors' readiness, awareness, and exposure towards ICT.

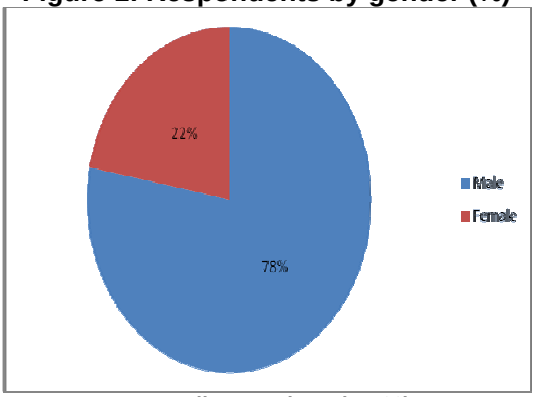
As agreed with the Information Communications Technology Agency (ICTA), the sampling frame, in this instant would be the 7 government organizations in central government, 4 Land Registries, 4 Agrarian Service Centers, 4 Local Authorities and 20 Divisional Secretariats (DVS) as identified by the consultant and approved by the client.

12 visitors each, who visited the 7 Central Government Organizations and 10 each of the other organizations including 20 Divisional Secretariats, were determined on the basis of **Convenient Sampling** due to non-availability of a sampling frame. Therefore the total sample of 404 versus the actual of **410** is represented in the survey. This sample had been stratified according to gender, age, ethnicity, and service provided.

4.2.1 Survey characteristics

The sample consists of 78% males and 22% females as against the national level gender ratio of 49.6% and 50.4%[13], respectively. The sample indicates a significant gender bias in visitors to government organizations. This situation is due to the prevailing socio-cultural factors in society, where it is perhaps accepted that the males take the lead role in a family.

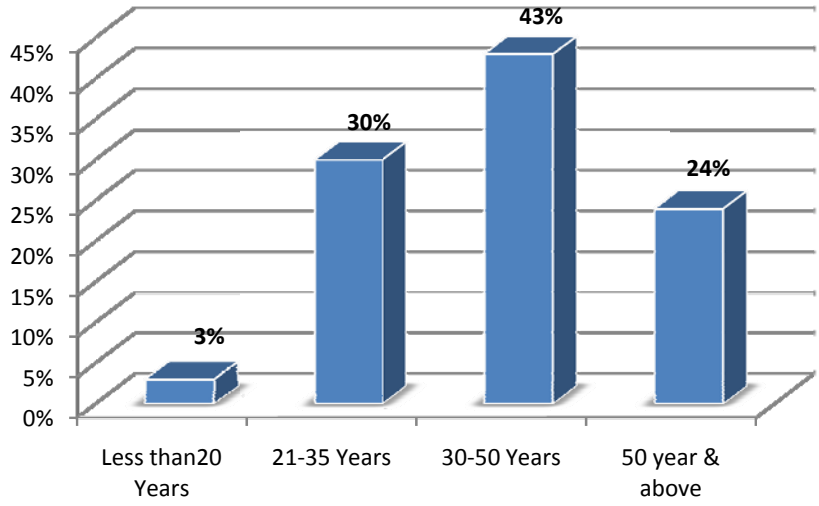
Figure 1: Respondents by gender (%)



Base: All respondents (n=409)

[13] Department of Census & Statistics, Sri Lanka

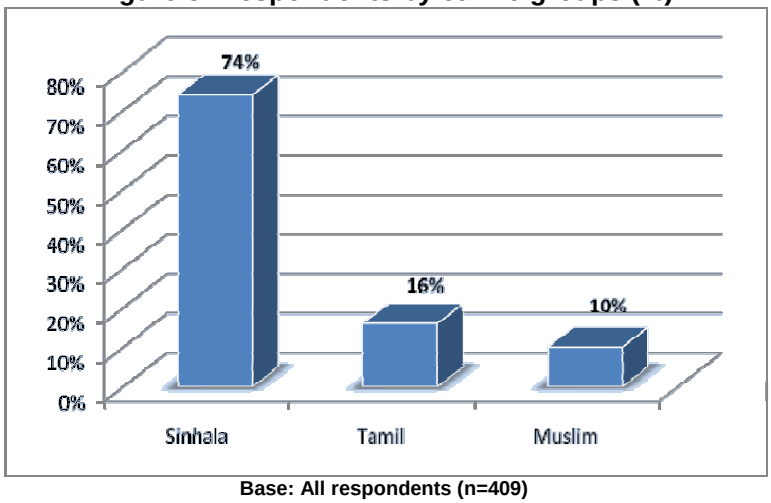
Figure 2: Respondents by age group (%)



Base: All respondents (n=409)

Age groups of 21-35 and 30-50 years are the majority to visit government organizations to obtain public services whilst age group <20 is negligible and age group 50 years or more is relatively less. The age group 21-35 obtained most services from Sri Lanka Foreign Employment Bureau (92%) and Department of Motor Traffic (67%), whilst almost all the age groups except the age group of 1-20 have obtained equally, the public services from Divisional Secretariats.

Figure 3: Respondents by ethnic groups (%)



Base: All respondents (n=409)

National level ratio of ethnic grouping is 74.9%, 11.2% and 9.2%, Sinhala, Tamil and Muslim[14] respectively, and the survey covered 74% Sinhala, 16% Tamils and 10% Muslims. Hence the survey coverage can be considered as satisfactory.

Respondents by government services

409 visitors were represented at the survey covering 60 Public Services. Largest quantum of public were represented in obtaining Birth, Marriage and Death Certificates (12%), Revenue Licence (9%), Purchase of fertilizer for Agrarian Services and the balance public services

[14] Department of Census & Statistics, Sri Lanka

were almost equally distributed. The List of Public Services obtained and surveyed is in Appendix 5.

4.2.2 Computer literacy

The International Telecommunication Union (ITU) reported that the world best ICT usage rate is 89%.[15] Computer Literacy Survey – 2009[16], reported that Computer literacy of population age 5-69 years was 20.3%, whilst the GOVS Survey 2011[17] reported that 56% citizens were Computer literate. The Computer Literacy Survey - 2009 used a different samples and definitions at national level; hence the results were differed from GOVS.

The following definitions were used for "Computer Awareness" and "Computer Literacy".

Computer Awareness:
"*Computers are used in a wide range of applications from playing games to complicated aeronautic applications. If a person has heard at least of one of these uses, then he/she is considered as a person with computer awareness".*

Computer Literacy:
"A person is considered as computer literate if he/she could use computers on his/her own. For example, even if a 5 year old child can play a computer game then the child is considered as computer literate".

GOVS Computer Usage:
"The ability of a person to use a computer, who visits the government organizations selected from different ethnic groups, age groups, occupations and by gender"

Table 8: Computer literacy by provinces

	Province	2009
1	Western	87.1
2	Central	40.0
3	Southern	13.3
4	Eastern	30.0
5	North western	20.0
6	North central	42.5
7	Uva	37.9
8	Sabaragamuwa	33.3
9	Northern	26.7

(Source: Computer Literacy survey – 2009, Census & Statistics Department, Sri Lanka)

It is somewhat extremely important to highlight the computer literacy status in the provinces compared with that of the entire country. Highest percentage of 87% is recorded in the western province, and surprisingly the lowest percentages of 13% and 20% were recorded from Southern Province and North Western Provinces respectively. Usage of computers in the North and East provinces were comparatively satisfactory, when compared with other provinces. Since the western province is the most developed province in the country, it confirms the high usage.

4.2.3 Availability of ICT facilities

A survey[18] conducted by the United Nations reported that Sri Lanka has 3.76 Personal Computers per 100 inhabitants and 0.50 Fixed Broadband users per 100 inhabitants whereas Asian Index is 14.99 and 5.15 respectively. The Developing Country Index for the

[15] Measuring the information society – The ICT Development Index 2009
[16] Computer literacy survey - 2009 conducted by the Department of Census & Statistics, Sri Lanka
[17] Government Organizations Visitors Survey 2011
[18] United Nations – E-Government survey - 2010

same is 12.8 and 4.29 respectively. According to the computer Literacy survey 2009 72% of households acquired the first computer during 2005-2009[19]. In this regard the United Nations used a different sample at international level and hence, it is not prudent to compare it with the Sri Lankan Computer Literacy Survey results.

4.2.4 Use of internet

The GOVS -2011 has revealed that 46.6% of visitors have used internet. The ITU reported that the World Index on the use of internet is 26.8%[20].

The Computer Literacy survey – 2009 reported that 13% of the population used internet at least once during the last 12 months of the survey. The pattern of using internet among provinces is similar to the pattern of e-mail use and it is important to note that the higher the use of internet higher will be the use of e-mail. The urban sector where the facilities are commonly available shows a higher usage of both e-mail and internet, than non-urban sectors.

There is a strong correlation between the usage of internet and e-mails at provincial level. The following table depicts the usage of internet and e-mail at provincial level.

Table 9: Internet and e-mail using household by provinces

	Province	Internet	E-Mail
1	Western	19.8%	18.5%
2	Central	13.2%	12.3%
3	Southern	10.6%	8.5%
4	Eastern	11.4%	10.5%
5	North western	6.3%	5%
6	North central	10.4%	7.9%
7	Uva	9.4%	7.2%
8	Sabaragamuwa	8.2%	7.1%
9	**Overall**	**13.1**	**12%**

(Source: Computer Literacy survey – 2009, Census & Statistics Department, Sri Lanka)

Communication technologies offer many options for government to communicate with internet users. E-Sri Lanka Programme has made opportunities to interact with the government through internet, mainly 'information search' with regard to public sector organizations and interaction with them on matters pertaining to citizens. The citizens mainly use internet for "information search", "e-mails" and "communication" and least used are "shopping" and "banking". "Education", "Entertainment", "News & Current Affairs" were relatively important to the visitors.

Table 10: Methods of Australian citizens contacting government[21]

	Method	2005	2006	2007	2008	2009	2011
1	**Internet**	19	25	29	38	38	35
2	**Telephone**	28	28	32	30	30	38
3	**In-person**	46	43	37	34	32	38
4	**Mail**	13	10	10	09	09	11

(Note: Percentages add up to more than 100% because some respondents reported that their last contact with government involved more than one service delivery channel)

Accordingly, the ultimate aim of the e-Sri Lanka Program should be to emphasize the use of internet for government services and discourage the use of other means of obtaining them

[19] Computer Literacy Survey - 2009
[20] Measuring the Information society - 2009
[21] Australians' use and satisfaction with e-government services – December 2010

The main factors that would encourage the people to increase the use of internet to contact government are;

- **Website usability** improvements such as lay out, navigation, search tools, making it easy to find government web sites quickly, and to have a better search facilities
- **Web site content** improvement such as concise information and detailed information
- **Infrastructure** improvements such as faster loading of web sites
- **Better access** would encourage greater use of the internet
- **Increased awareness** about what can be done online would encourage usage
- **Skill level** to use the internet or computers in general would encourage greater use
- **Cost** of internet connections would encourage to use internet

Most common reasons for making contact with the government through internet;[32]

- Convenience
- Requires shorter time
- Can do it at a time suitable to the user
- Do not have to wait in a queue
- Process is easy/convenient
- Do not have to depend on others

Chapter 5: Study Findings and Analysis

This chapter presents the key findings in the areas of; questionnaire survey findings with regard to the time spent by the citizens to obtain public services and related satisfaction, status of ICT Policy compliance, questionnaire survey findings of the e-Government, as well as Website Usability Analysis and the level of usage of e-services.

5.1 Time Spent to Obtain Public Services and Level of Satisfaction

The summary of comparison of the time spent to obtain public services and its level of satisfaction is depicted in the following table.

Table 11: Summary of time spent and level of satisfaction of the public services

Time spent						
	2010		2011		2013	
	Minutes	Change	Minutes	Change	Minutes	Change
Travel time	N/A	N/A	115	N/A	83	**28%**
Waiting time in the queue	N/A	N/A	26	N/A	12	**54%**
Service processing time	N/A	N/A	33	N/A	16	**52%**
Total time spent	371	N/A	175	52%	124	**29%**
Level of satisfaction						
	As a Percentage	% Change	As a Percentage	% Change	As a Percentage	% Change
High satisfaction	25%	N/A	28%	12%	33%	**18%**
Satisfaction	36%	N/A	40%	11%	55%	**38%**
Moderate satisfaction	16%	N/A	16%	0	10%	**(38%)**
Overall satisfaction	77%	N/A	84%	8%	98%	**17%**

(N/A=Not Available)

The reduction in time spent for obtaining public services in 2013 is 29% and the increase in the level of satisfaction is 17%, compared with 2011.

A details statement of time spent in 90 Public Services and the level of satisfaction in obtaining services in 2010, 2011 and 2013 is in Appendix 7.

5.2 Status of ICT Policy Compliance

The cabinet of ministers at its meeting held on 16 December 2009 approved the e-Government Policy and thereafter the Secretary to His Excellency the President issued a Circular No. SP/SB/03/10 dated 31 May 2010 to the Secretaries of the Ministries, Provincial Councils, Heads of Departments and statutory Boards informing all of the ICT Policy for implementation.

Although the eGovernment survey -2013, mainly focused on studying the visitors perspective on e Government services, the key informant interviews of the survey was used to understand the level of compliance of eGovernment policy of these organizations. The following basic elements of eGovernment policy were used for the analysis:

1. Government organizations with ICT units.
2. Appointment of CIOs
3. ICT annual plans for each organization
4. Allocation of funds for ICT
5. All government organization use trilingual websites under gov.lk

6. Standard of web sites according to the "Web Standards for Government"
7. Use of Sinhala and Tamil unicodes and use of local languages in ICT activities.
8. Provide service information to GIC- 1919
9. All government organization to connect to LGN
10. Government organization to conforms to the latest version of the Interoperability Framework
11. Government organizations to use Lanka gate and country portal[i]
12. Use SMS for delivering mobile phone based information[ii].
13. Government organizations to use only licensed software
14. ICT related training for government officers.

According to the above criteria the current status of the ICT policy compliance and achievement is reported to approximately 70%.

A detail statement of the ICT Policy compliance is in Appendix 8.

5.3 Survey Questionnaire Findings

The survey captured 60 Public Services represented by 409 citizens in the following organizations. The details of institutions covered under the following organizations can be found in Appendix 4.

- Foreign employment Bureau
- Department of Motor Traffic
- Department of Pensions
- Registrar of companies
- Department of Import & Export Control
- Department of Inland Revenue
- Department of Labour
- Divisional Secretariat
- Land Registry
- Divisional Agrarian Service
- Local Authorities

5.3.1 Purpose of visit

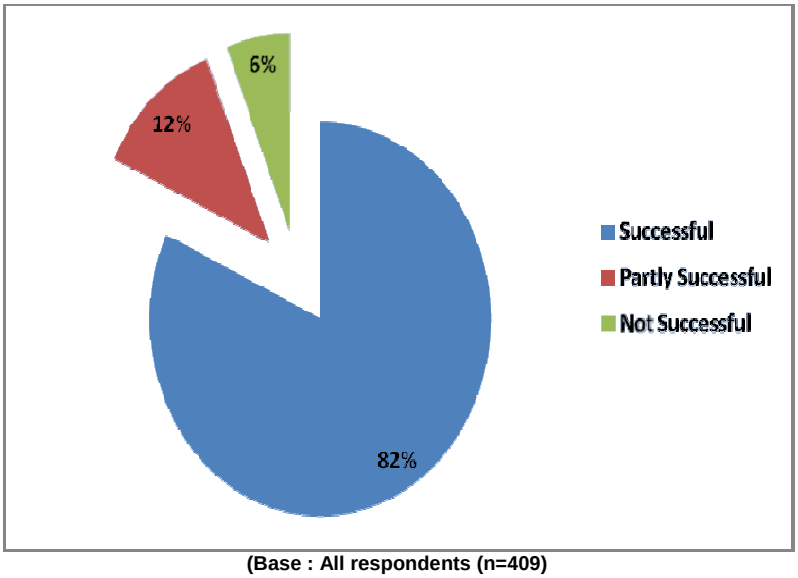
5.3.1.1 Nature of service obtained

Citizens have visited the above organizations to obtain public services which covered approximately 60 public services which includes the eServices, automated services and manually provided services.

5.3.1.2 Successfulness of the services obtained

It was revealed that the majority of visitors were able to obtain a "successful" service (82%) whilst 12% and 6% citizens were "partly successful" and "not successful", respectively.

Figure 4: Extent to which the service was successful

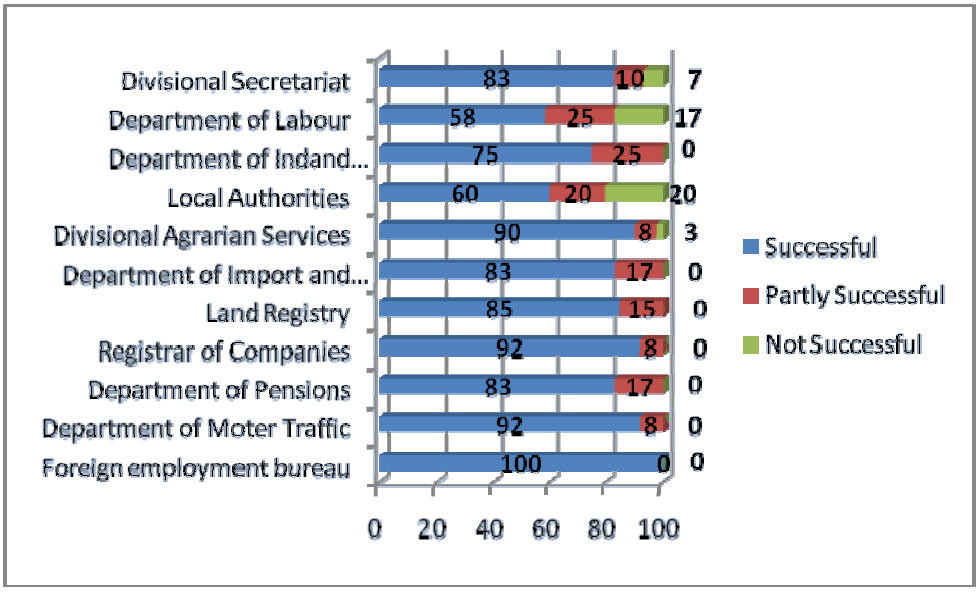


(Base : All respondents (n=409)

The 18% citizens who were either "partly successful" or "not successful" have independently given the following reasons.

- 23% said that the respective officer handling the subject was not available to provide the services.
- 15% of citizens were not successful due to the requirement of additional documentation.
- 31% claimed that they were asked to come on another day to complete the service.
- 15% citizens were referred to another organization as they had gone to the wrong place to obtain the service.

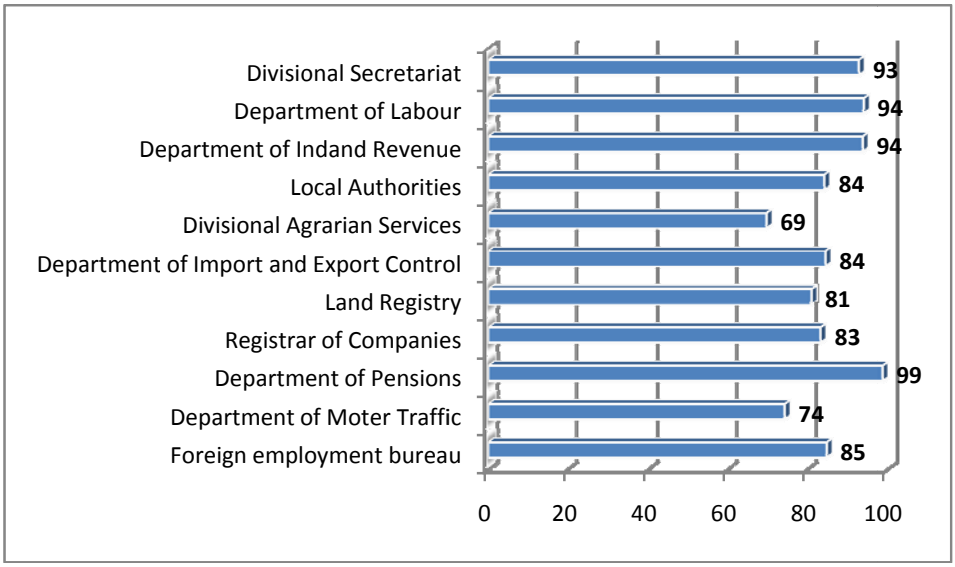
Figure 5: Extent to which the service was successful, partly successful or unsuccessful – Organization wise



Citizens who obtained services from Sri Lanka Foreign Employment Bureau were 100% successful. Most of the organizations were rated as over 90% successful, whilst the most unsuccessful services had been recorded from Department of Labour (17%) and Local Authorities (20%).

5.3.1.3 Level of satisfaction of the service obtained

Figure 6: Level of the satisfaction of the citizens who were successful in obtaining public services - organization wise



(Base : All respondents (n=409)

87% visitors were satisfied (High & Average) with the overall government services obtained, whilst 13% visitors were not satisfied with the government services obtained. The following is the level of satisfaction of the citizens.

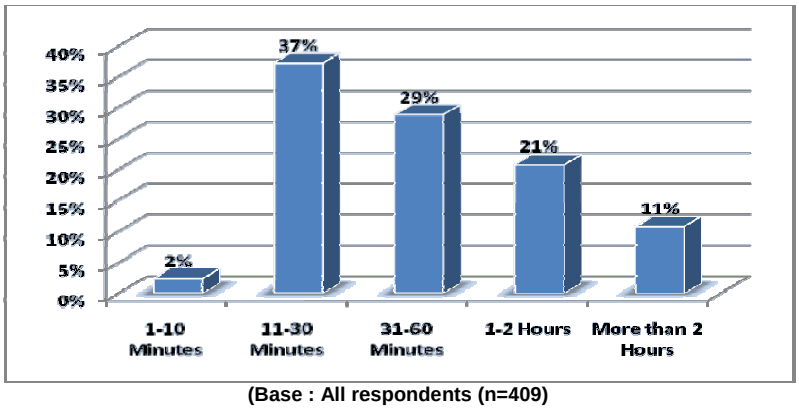
1. Overall service quality of the services provided (92%)
2. Ease of documentation required for services (88%)
3. Length of time spent to obtain the services (83%)
4. Commitment of the staff to provide the services (89%)
5. Courtesy/Politeness of staff who provided the service (88%)
6. Transparency of the process and fairness of the service (89%)
7. Waiting rooms/seating arrangements and other facilities (82%)

In terms of organizations 4% and 5% of citizens who obtained public services from Divisional Agrarian Services and the Land Registry were not satisfied with the services provided, which is negligible.

5.3.2 Time spent in obtaining services at the recent visit

5.3.2.1Travel time (Up and down)

Figure 7: Up and down travel time to obtain services



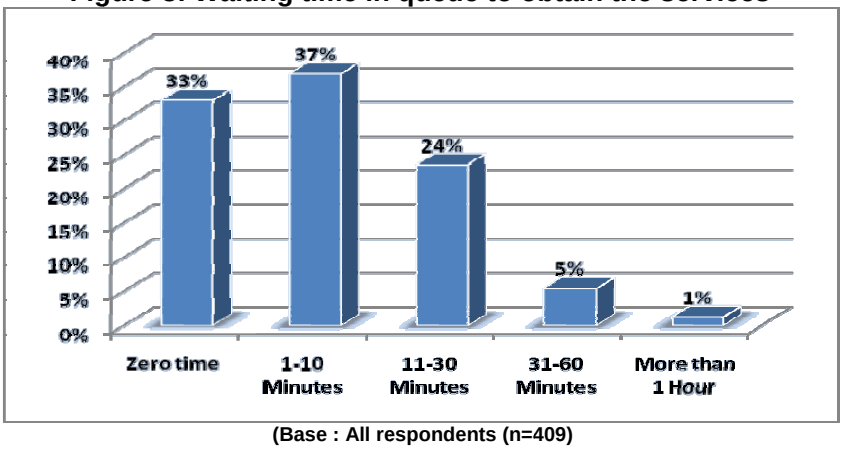
(Base : All respondents (n=409)

68% citizens have spent less than one hour to travel whilst 32% spent more than 1 hour to travel. It may be due to availability of services in close proximity to their residences. However, 11% visitors have taken more than 2 hours of time.

Currently, the Average Time spent by a visitor for travelling up and down is 94 Minutes.

5.3.2.2 Waiting time in queue

Figure 8: Waiting time in queue to obtain the services



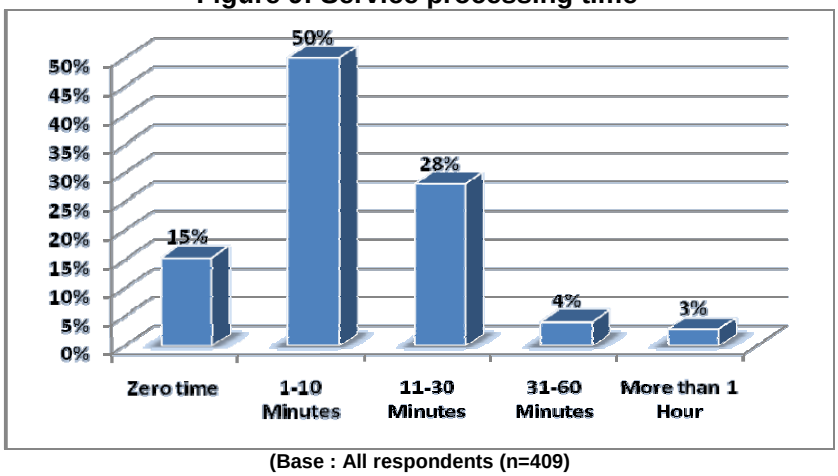
(Base : All respondents (n=409)

The majority 37% of citizen have spent 1-10 minutes in the queue and 33% spent zero time in the queue. However 1% visitors have spent more than 1 Hour in the queue.

Currently, the Average Time spent by a visitor in the queue is 15 minutes.

5.3.2.3 Service processing time

Figure 9: Service processing time



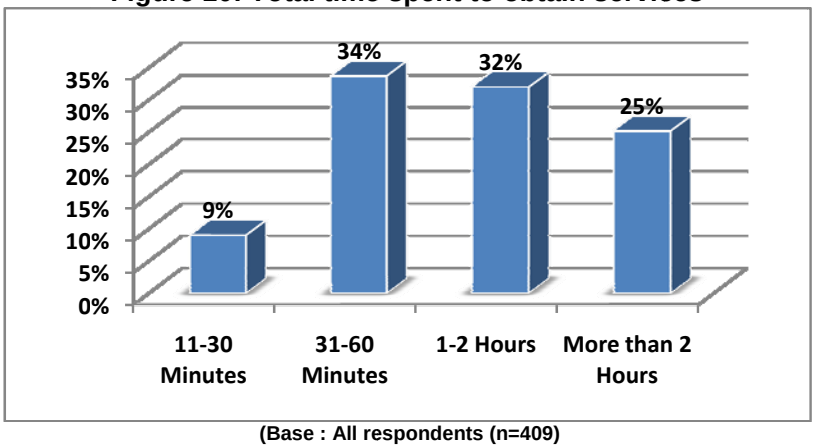
(Base : All respondents (n=409)

Majority of citizens (93%) have spent less than 30 minutes in processing the service obtained by them. However, 3% of the users have spent more than one hour.

Currently, the average time taken for processing of services is 15 minutes.

5.3.2.4 Total time spent to obtain services

Figure 10: Total time spent to obtain services



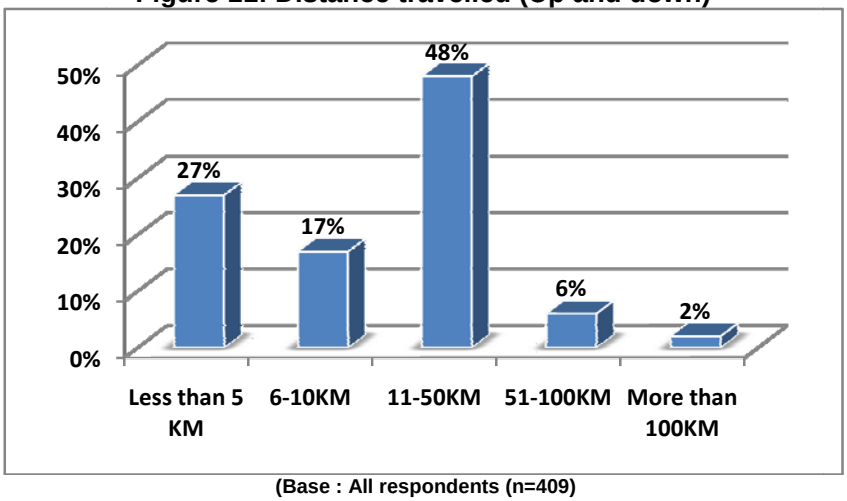
(Base : All respondents (n=409)

43% of the citizens have spent less than 60 minutes, 32% have spent 1-2 hours and 25% have spent more than 2 hours to obtain the service.

Currently, the average total time taken for processing of the services is 124 minutes.

5.3.2.5 Distance travelled

Figure 11: Distance travelled (Up and down)



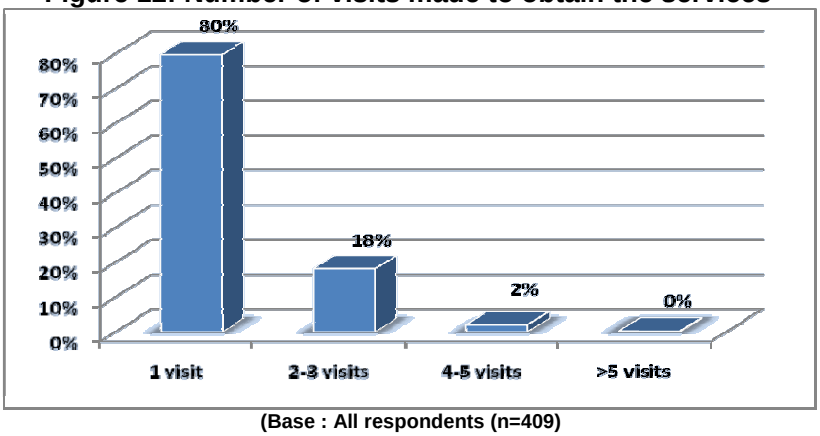
(Base : All respondents (n=409)

44% of citizens have travelled less than 10 Km and 48% have travelled 11-50 Km.

The average distance travelled to obtain government services was 22 Km.

5.3.2.6 Number of visits made to complete the service

Figure 12: Number of visits made to obtain the services



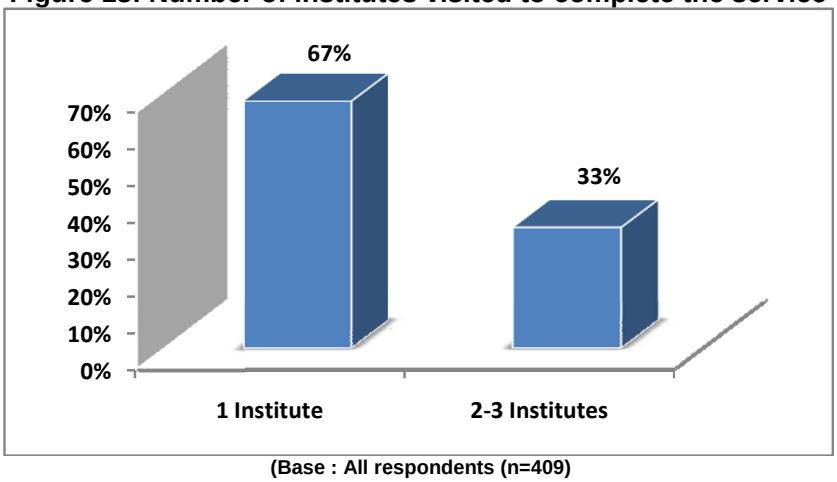
(Base : All respondents (n=409)

The majority of citizens (80%) have completed the service in one visit.

Currently, the Average Number of Visits made by visitors to obtain public services is 1.3 Visits.

5.3.2.7 Number of institutions visited to complete the service

Figure 13: Number of institutes visited to complete the service



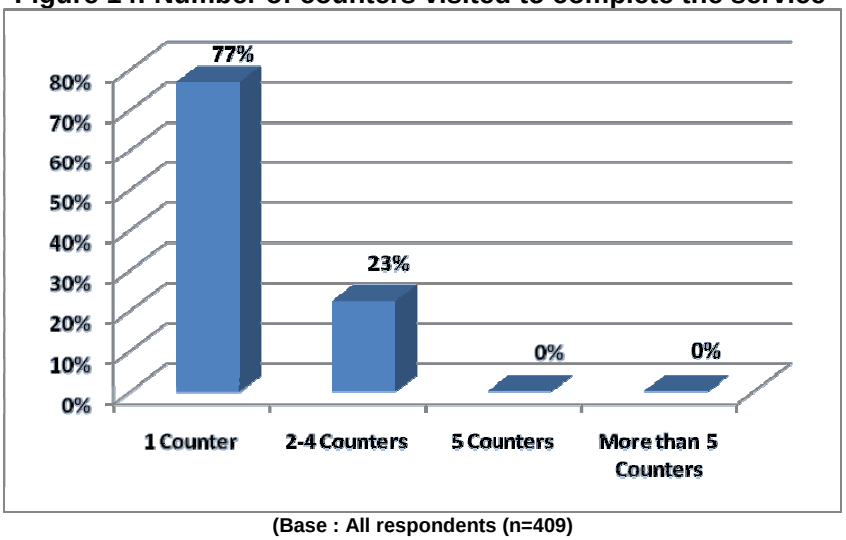
(Base : All respondents (n=409)

Number of institution visited class intervals were arrived at by looking at the frequency tables. Accordingly, 1 institute and 2-3 Institutions class intervals have been used. The majority of citizens (67%) have visited only one institution and the balance 33% have visited 2-3 institution.

Currently, the, average number of institutions visited to obtain a government services is 0.5 institutions with a maximum value of 2.3 institutions.

5.3.2.8 Number of counters visited to complete the service

Figure 14: Number of counters visited to complete the service



(Base : All respondents (n=409)

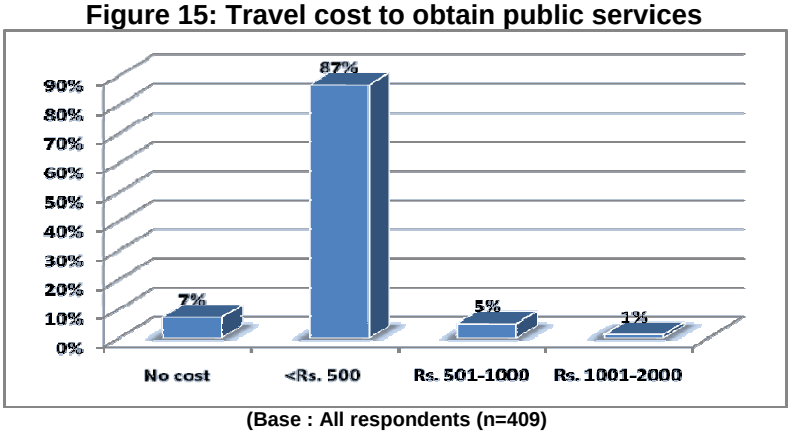
Number of counters visited class intervals were arrived at by looking at the frequency tables. Accordingly, 1 Counter, 2-4 Counters, 5 Counters and more than 5 counters, class intervals have been used. The majority of citizens (77%) have visited only one counter, 22% visitors have visited 2-4 counters.

Currently, the, average number of counters visited to obtain a government services is 1.3 counters.

5.3.3. Cost incurred in obtaining services at the recent visit

5.3.3.1 Travel cost

Figure 15: Travel cost to obtain public services



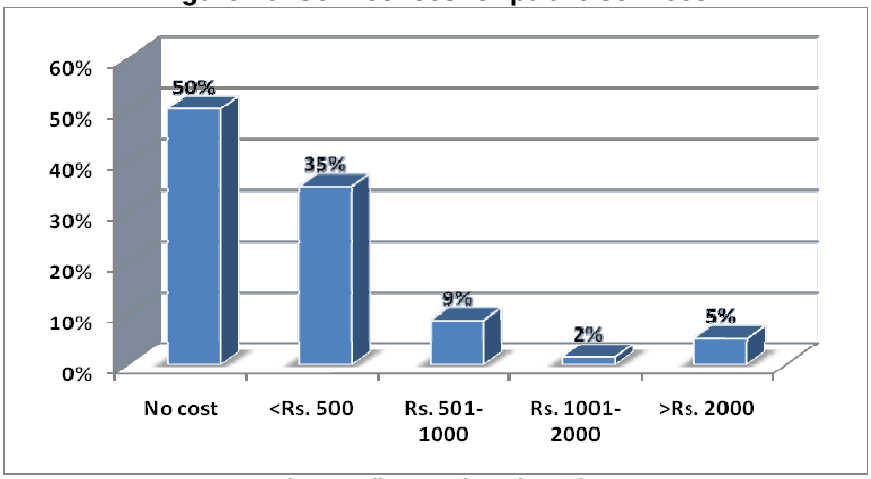
(Base : All respondents (n=409)

Majority of citizen (94%) spend less than Rs. 500 for travelling to government organizations to obtain services.

Currently, citizens have spent an average travelling cost of Rs. 141 to obtain a government services.

5.3.3.2 Service fees

Figure 16: Service fees for public services



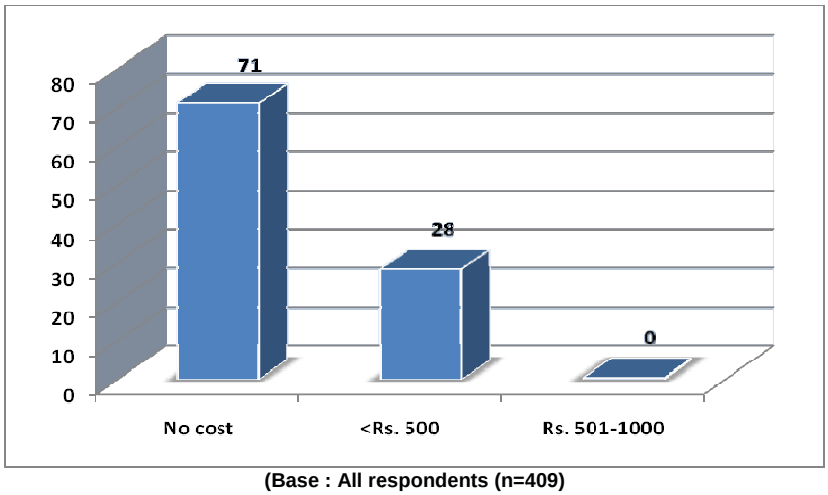
(Base : All respondents (n=409)

Most of the services obtained by the citizen involved no service fees (50%) and 35% citizens have incurred a service fee below Rs. 500. 5% citizens have incurred a Service Fee of over Rs.2000.

Currently, visitors have incurred an Average Service Fee of Rs. 554 to obtain a government services.

5.3.3.3 Cost of food

Figure 17: Cost of food



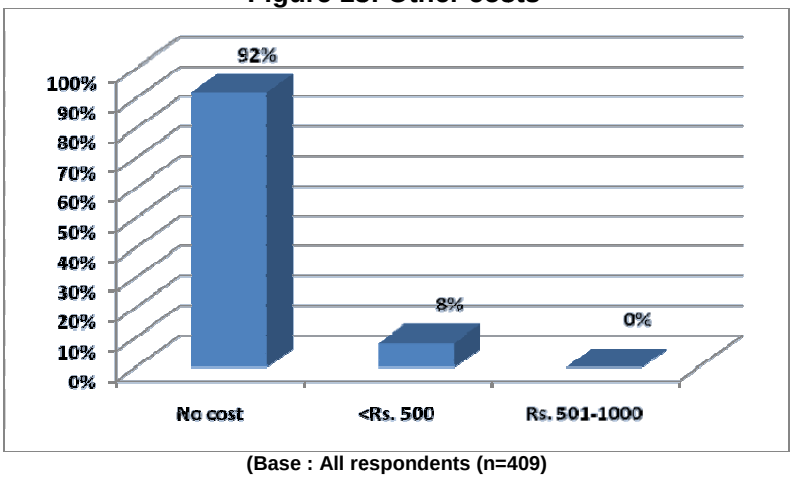
(Base : All respondents (n=409)

Over 71% visitors have not incurred a cost for food, whilst over 28% visitors incurred less that Rs. 500 for food. This may be due to visitors being able to find government services in the close proximity.

Currently, visitors have incurred an Average of Rs 45 on Food to obtain a government services.

5.3.3.4 Any other costs

Figure 18: Other costs



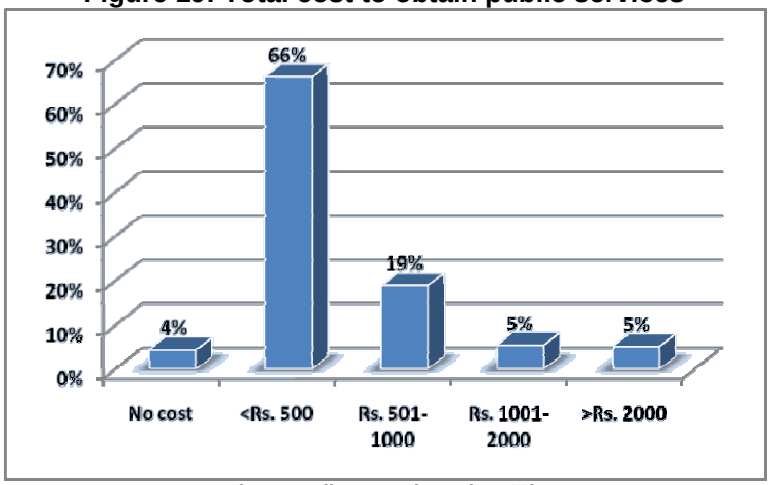
(Base : All respondents (n=409)

Approximately 92% citizen did not incur any expenditure on other costs. About 8% incurred less than Rs. 500.

Currently, citizens have incurred an Average Cost of Rs. 8 on other expenses to obtain a government services.

5.3.3.5 Total cost to obtain public services

Figure 19: Total cost to obtain public services



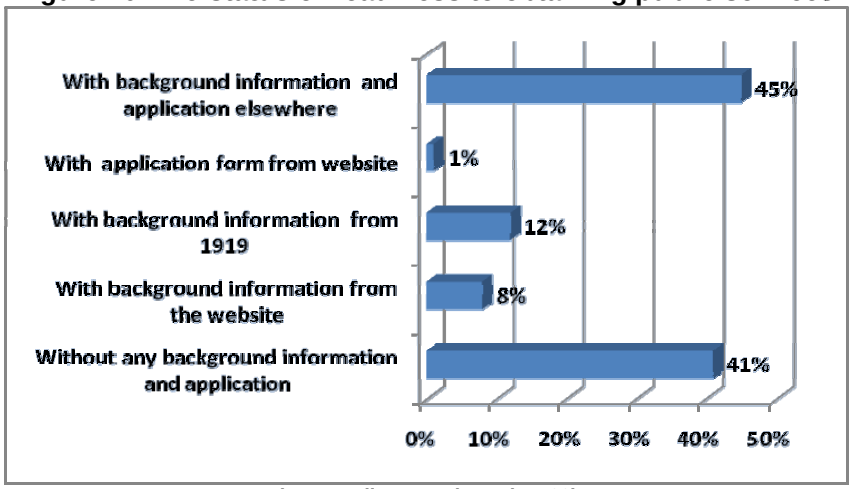
(Base : All respondents (n=409)

The Total Cost includes Up and down travelling cost, opportunity cost, service fees, cost of food, cost of accommodation and any other costs. A majority of 70% spend less than Rs. 500 to obtain a public service.

Currently, citizens have incurred an Average Total Cost of Rs. 747 to obtain a public service.

5.3.4. Pre-status (Readiness) of obtaining services

Figure 20: Pre-status or readiness to obtaining public services



(Base : All respondents (n=409)

The following is the status of citizens readiness prior to visiting public organizations to obtain services

- 45% of citizens had visited the respective organization without any background information & application forms to obtain services.
- 8% of citizens had visited the respective organization with background information from the web site regarding the service to be obtained.

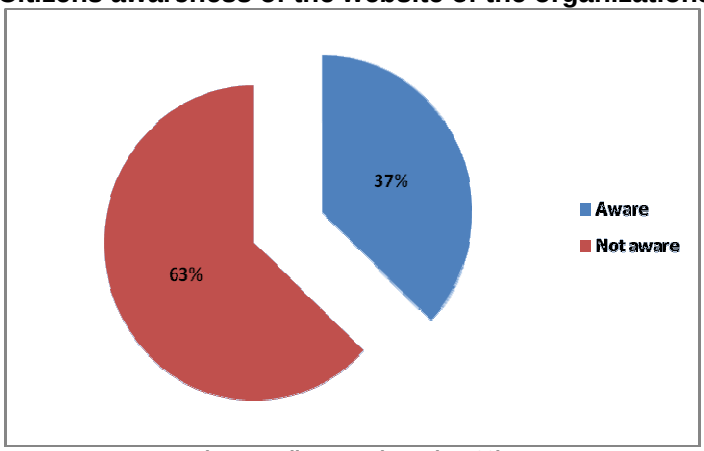
- 12% of citizens had visited the respective organization with background information obtained from Government Information Center – 1919.
- Only 1% of citizens had visited the respective organization with relevant application forms downloaded from web site, with regard to the service to be obtained.
- 45% of citizens had visited the respective organization with background information and application forms obtained from elsewhere, with regard to the service to be obtained.

Therefore, it reveals that over 20% citizens were ready to obtain public services with back ground information facilitated by the e-government initiatives.

5.3.5. Website of the Organization

5.3.5.1 Citizens awareness of the website of the organization surveyed

Figure 21: Citizens awareness of the website of the organizations surveyed

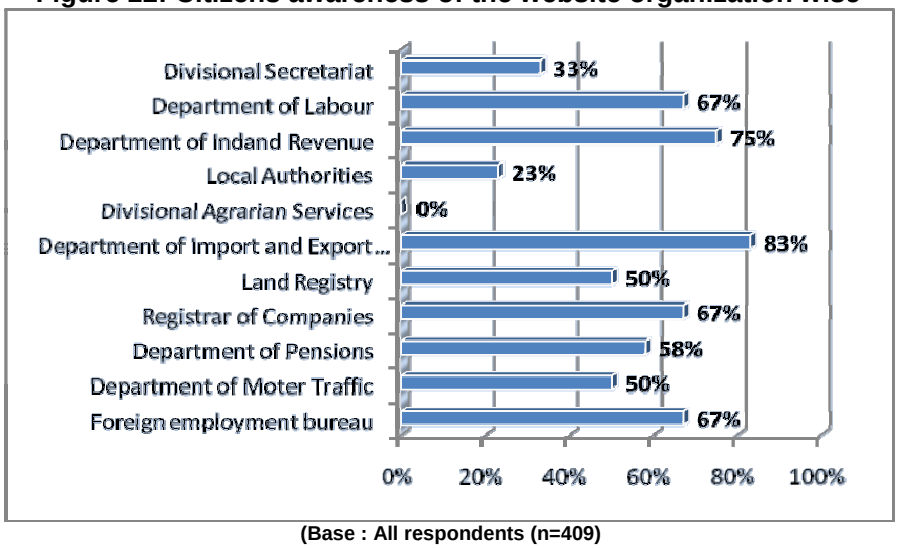


(Base : All respondents (n=409)

37% of the citizens were aware of the web sites of the surveyed organizations; whist 63% were not aware.

The organization web site where public awareness is high is depicted below.

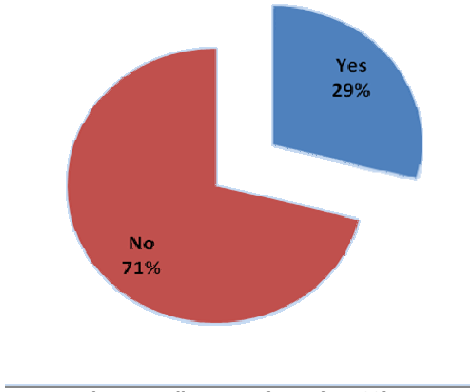
Figure 22: Citizens awareness of the website organization wise



(Base : All respondents (n=409)

5.3.5.2 Downloading applications/forms from the website

Figure 23: Applications downloaded from the websites



(Base : All respondents (n=409)

Of the 409 citizens in the sample, only 153 citizens (37%) were aware of the web site of the surveyed organizations and 29% or 45 citizens had downloaded applications/forms from the web sites; whilst 71% or 108 citizens had not downloaded. Highest percentage of downloads have been from the web sites of the Department of Pensions, Department of Motor Traffic, and Foreign Employment Bureau. The level of satisfaction of the downloading facility available in the above mentioned organizations websites is as follows.

- 20% visitors were fully satisfied
- 62% visitors were generally satisfied
- 17% visitors were moderately satisfied
- 1% visitors were unsatisfied

Therefore, 99% citizens were positively satisfied with the downloading facility of applications/forms.

Downloading of applications/forms was not possible mainly due to the following reasons.

- 39% citizens said that they do not have the facilities to download applications and forms.
- 7% citizens claimed that the applications available for downloading were accepted by some organizations hence not downloaded.
- 4% citizens did not have the knowledge to fill the applications.
- 9% citizens were not aware of the facilities to download.
- 14% citizens claim that there were no applications available for downloading.
- 2% citizens said that they were not aware of the web site.

5.3.6 Perception of the websites

Of the 409 citizens in the sample, 153 (37%) were aware of the web site of the government organizations they visited recently and were asked to rate their perception of the web sites in terms of the following criteria, and the rating is given below.

- 56% citizens said that the web sites are up to date.
- 61% said the web sites are easy to use.
- 59% said the web sites help to gather information required by the citizen.
- 57% are happy that web browsing is fast.
- 58% said the web sites are user friendly.
- 38% said documents/ forms are available for downloading.

The Citizens' overall positive perception is reported at 54%.

5.3.7 Visitors attitudes towards the website

The respondents were asked to express their attitudes towards the web sites they had most recently visited in terms of the following criteria, and the rating is given below.

- 99% citizen trust the government organization.
- 99% have built confidence in the government organization.
- 86% felt that the information provided in the web sites were adequate.
- 99% citizen expressed that they would recommend the web sites they visited to others.
- 87% are of the view that the government organizations web sites are comparable with business web sites in the Private sector.
- 97% said the quality of the government organizations web sites was good.
- 99% said that organizations web sites were easy to navigate and use
- 96% felt that the government organization web sites were easy to browse.

The Citizens' overall positive perception is reported at 95%. However, 20%, 14% and 20% citizens to Land Registry, Local authorities and divisional Secretariats were of the view that the information provided in the web sites was inadequate. 13%, 25%, 14% and 18% citizens to Foreign Employment Bureau, Land Registry, Local Authorities, and Divisional Secretariats respectively, have said that these web sites are not comparable to private sector web sites.

5.3.8 Efficiency and effectiveness of the public services

The respondents were asked to express their opinion towards the efficiency of public services in terms of the following criteria, and the rating is given below.

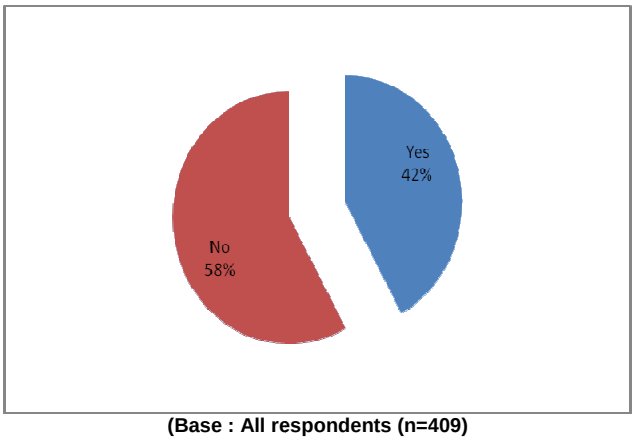
- 98% citizens are of the view that the government organizations staffs are able to undertake public services.
- 98% felt the public relations of the staff were good.
- 97% is of the view that the government staff has a customer oriented approach.
- 98% felt the system is flexible.
- 98% citizens are of the view that the government organizations have sufficient infrastructure.
- 96% citizens felt that the government process is efficient.

The Citizens' overall positive satisfaction towards the efficiency of government services is reported at 98%.

5.3.9 Government e-applications

5.3.9.1 Awareness of the Sri Lanka Government Country Portal

Figure 24: Citizens awareness of the Sri Lanka Country Portal

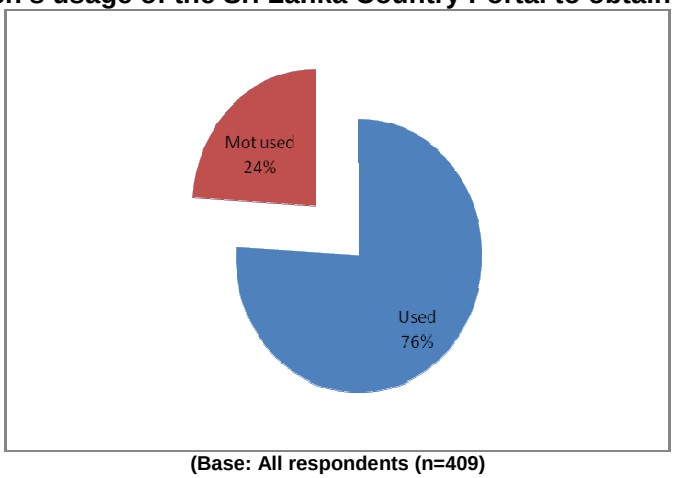


(Base : All respondents (n=409)

42% of the citizens were aware of the Sri Lanka government Country Portal; whilst 58% citizens were not aware.

5.3.9.2 Usage of the country portal to obtain public services

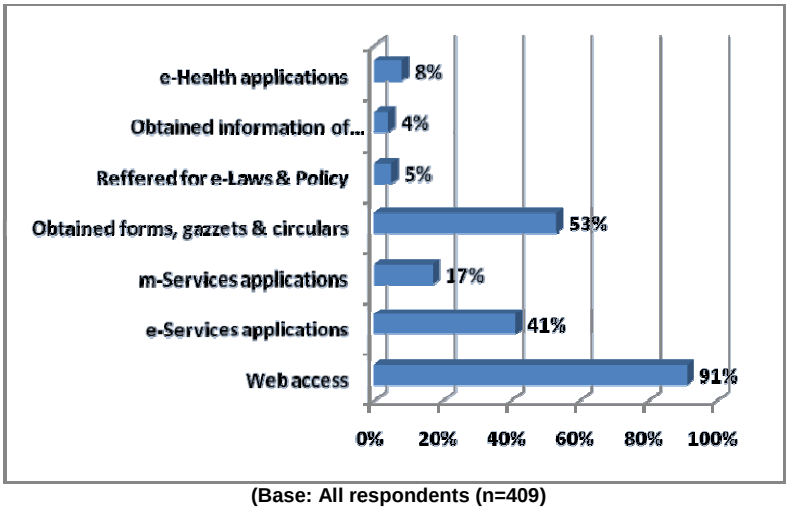
Figure 25: Citizen's usage of the Sri Lanka Country Portal to obtain public services



(Base: All respondents (n=409)

Out of 409 respondents in the survey 172 (42%) were aware of the Sri Lanka country Portal and of which 76% have used the country portal to obtain public services.

Figure 26: Citizen's usage of the Sri Lanka Country Portal to obtain public services



(Base: All respondents (n=409)

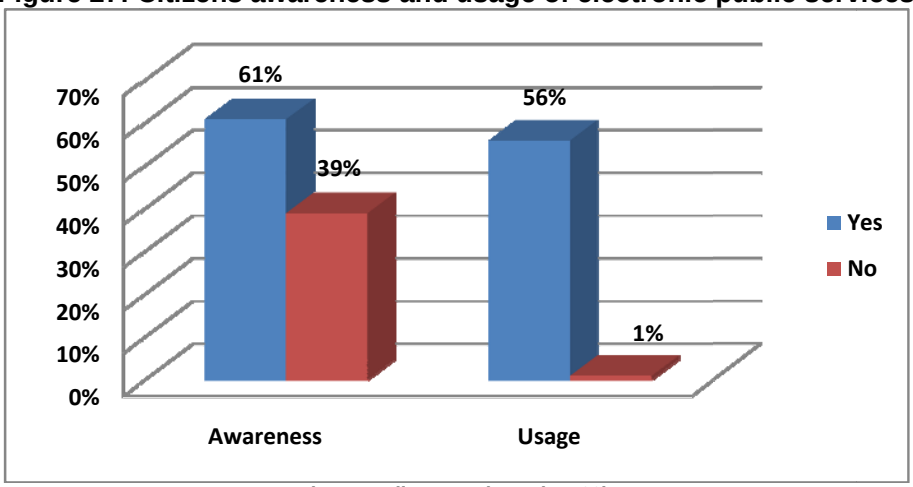
The level of usage and the satisfaction is illustrated in the following table 11.

Table 12: Level of usage and satisfaction of public services obtained through country portal

	Public service	Level of Usage	Level of satisfaction
1	Web access to government organizations	91%	100%
2	e-Services applications	41%	100%
3	m-services applications	17%	100%
4	Forms, gazettes and circulars	53%	100%
5	e-Laws and policies	5%	100%
6	Environmental and disaster management	4%	100%
7	e-Health applications	8%	100%

5.3.9.3 Electronic Public Services

Figure 27: Citizens awareness and usage of electronic public services



(Base : All respondents (n=409)

Out of 409 respondents 251 (61%) were aware of the electronic public services and 39% were not. Of the 251 respondents who were aware of the electronic public services, 231 or 56% had obtained the services. The level of usage of electronic public service and the citizens' level of satisfaction is depicted in the following Table 12.

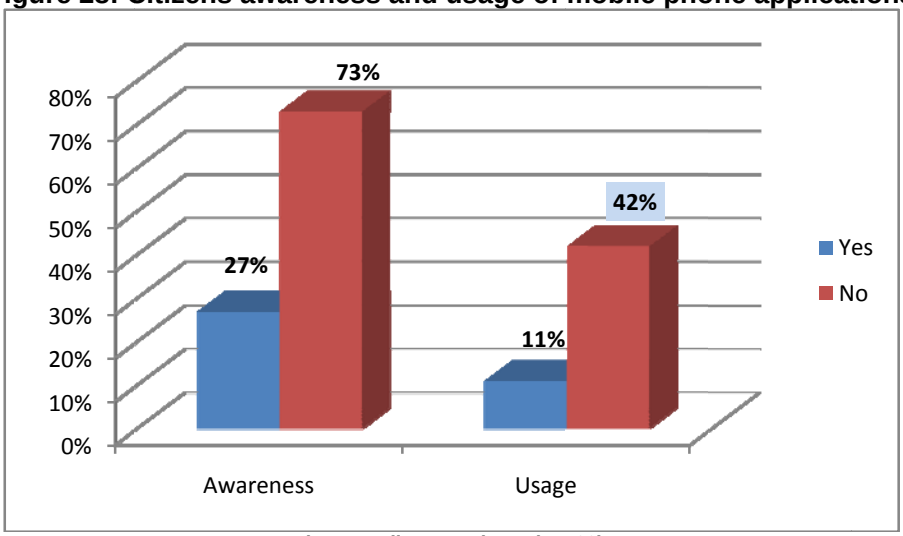
Table 13: Level of usage and satisfaction of the electronic public services

	e-Service Application	Level of usage (%)	Level of satisfaction (%)
1	e-Revenue License	54	100
2	Issuance of certificates & permits	40	100
3	Find GN details	12	100
4	Request for a government transfer/find transfer opportunity	12	100
5	Submit grievances to Ministry of Public Administration	8	100
6	View deed registration	21	94
7	Examination results	62	99
8	Register for technical courses	13	100
9	EPF account details	17	100
10	Disaster information	5	100
11	Disease information	1	100
12	Health content	5	100
13	Complaints about bribery and corruption	0	100
14	Tell IGP	0	100
15	NGO Directory	6	100
16	Latest weather information	9	100
17	Daily food prices	2	100
18	Rubber prices	1	100
19	National highway information	7	100

Accordingly, highest number of citizens had obtained electronic services to look at examination results from the Department of Examinations.

5.3.9.4 Mobile Phone Applications

Figure 28: Citizens awareness and usage of mobile phone applications



(Base : All respondents (n=409)

Out of 409 respondents 112 (27%) were aware of the electronic public services and 73% were not. Of the 112 respondents who were aware, 11% had obtained mobile phone services. The level of usage of mobile phone services and the citizens' level of satisfaction is depicted in the following table 13.

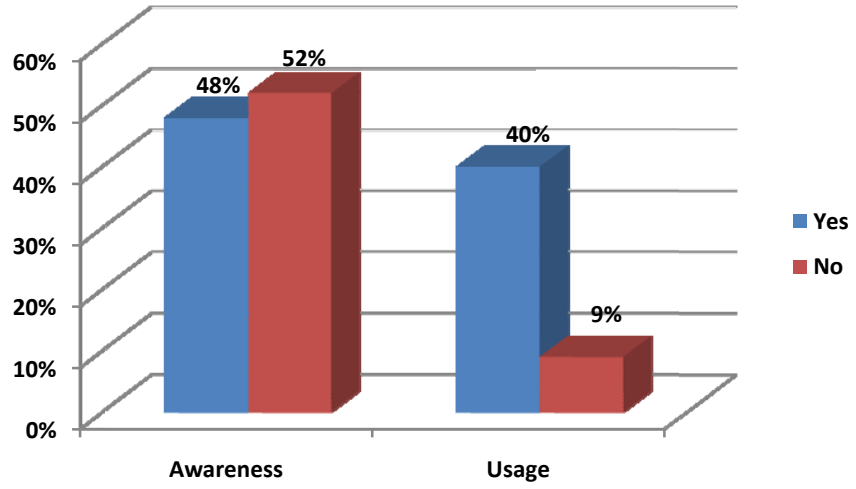
Table 14: Level of usage and satisfaction of the electronic public services

	e-Service Application	Level of usage (%)	Level of satisfaction (%)
1	Services of Tea Small Holding Development Authority	9	100
2	Train Schedule Information	79	93
3	Status of ID card applications	47	91
4	Status of police clearance applications	6	67
5	Tea Price Information	2	100
6	Water Level Information of Mahaweli Reservoirs	2	100
7	Daily fish prices	19	100

Accordingly, highest number of citizens had used mobile applications for train schedule information.

5.3.9.5 Web sites of government organization

Figure 29: Citizens' awareness of web sites of government organization



(Base : All respondents (n=409)

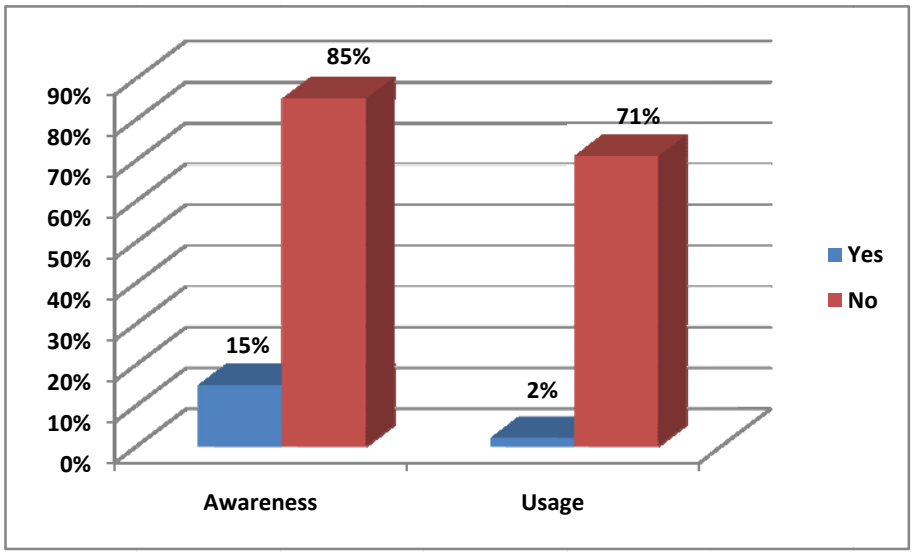
Out of 409 respondent 48% were aware of the Government Organizations' Websites and 52% were not. Of the 197 respondents who were aware, 40% had visited these websites. Most commonly used websites and the level of satisfaction is depicted in the following 14.

Table 15: Commonly used websites and the level of satisfaction

	e-Service Application	Level of usage (%)	Level of satisfaction (%)
1	Department of Examination	59	100
2	Ministry of Education	41	100
3	Sri Lanka Government Portal	38	100
4	Ministry of Public Administration	38	100
5	Sri Lanka Foreign Employment Bureau	37	100

5.3.9.6 Online Purchases/Payments through Lanka Gate

Figure 30: Citizens' awareness of online purchases/payments through Lanka Gate



(Base : All respondents (n=409)

Out of 409 respondent 15% were aware of the online purchases/payments through Lanka Gate and 85% were not. Of the 62 respondents who were aware, 2% had used this facility. Most commonly used online payments are depicted in 15.

Table 16: Common online Payments

	Type of payment	Usage (%)
1	Payment of Electricity Bills	7
2	Payment of Telephone Bills	1
3	Bank Transactions	85
4	Channeling doctors	6

5.3.3.10 Constraints in using government services online

The visitors were asked to explain the constraints in obtaining public services online. They expressed the following in order of seriousness.

- 52% citizens were not aware of the online services available.
- 42% citizens do not have ICT facilities to view the web sites of the government organizations or to obtain any e-services.
- 24% said that the websites of the government organization are not updated regularly and almost out dated,
- 11% citizens expressed that ICT infrastructure available to them is not reliable.
- 10% pointed out there has been computer crime and they are afraid to conduct online transactions.
- 6% is of the view that there is poor web interaction from the government organizations side.
- 7% said that the online services are too slow to use.
- 7% citizens said there are no online services relevant to them.
-

5. 4 Web Content Analysis

Over the past two decades the Internet and has transformed itself from a highly specialized scientific / research tool into a common household commodity. Recently it became popular

as a personal apparatus which many use in their day to day activities. Today Internet offers many tools that can be used to communicate, share information, interact with friends and society and share opinions among people irrespective of their age, gender, cultural, language and geographical barriers.

Among the several tools available on Internet, the World Wide Web (WEB) is undeniably the most popular as well as the most versatile tool. Apart from being a tool that can be used to disseminate information over the Internet, it also provides a platform to offer many other services such as interactive transactions, messaging and collaborative work. Consequently over the recent past there have been a number of web based application on the Internet that range from simple messaging services such as email, chatting, and social networking. to secure services such as e-banking, e-commerce, and e-trading. Moreover, from user's point of view WEB based services can be accessed from number of devices other than computers using the same unified interface. For instance the way that WEB can be accessed using a desktop computer with a high speed broadband Internet connection is very similar to the way the same can be accessed from a mobile device (such as a smart phone or tablet) having a mobile GPRS connection to the Internet. These features make the WEB to be highly accessible to the general public making it an ideal platform to offer public related services such as e-Government services.

Technical features available on the WEB platform enables a range of applications, ranging from those having simple user interfaces to those with complex features that are more suitable for IT savvy users. Developers often get carried away by these features making their applications to be less usable by the general audience. Hence, there are guidelines and frameworks that attempt to define web site usability from general users' perspective that is applicable to all types of users. The most generic and commonly used forms of such guidelines include the "Web Content Accessibility Guidelines (WCAG)" (Version 2.0, published on December 2008) of the World Wide Web Consortium (W3C). This framework describes guidelines to improve web accessibility based on the following four principles.

1 **Perceivable** - Information and user interface components must be presentable to users in ways they can be perceived irrespective of the differences and capabilities of the viewing platforms. These include provision of text alternatives to non text based content such as images, videos etc., Provisioning of time based alternatives such as closed captions and sign language interpretations for video and audio content, making the content layouts adaptable and displayed on different viewing platforms without losing their embedded information structure, and making it easier for users to separate the information content from other decorative elements such as the background and colour.

2 **Operable** - User interface components and navigation must be operable. The operable principles include guidelines to make information retrieval and navigation of the website independent of devices and capabilities of the users. In general this includes providing keyboard alternatives for navigation, allowing the users to retrieve information at their own pace and speed, and supporting graceful and seamless navigation throughout the website.

3 **Understandable** - Information and the operation of user interface must be understandable for all users. The understandable principle says that the web content, language and writing style must be understandable to all users irrespective of their education and cultural backgrounds and describes guidelines for provisioning of localized content, Making the web pages operate in a predictable manner and assisting users to correct mistakes in interactive web sites.

4 **Robust** - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies. The robustness of a website is described in terms of its capability in seamlessly operating across different types of user agents (both human and machine based) for retrieval of information, integration with other services including assistive technologies for users with different capabilities.

Compared to general web content, websites related to e-government services require a more streamlined and focused approach in defining their usability frameworks and guidelines. In general e-government websites are focused more on providing accurate and timely valid information to citizens, providing government services such as e-transactions to the citizens and getting the citizens involvement through e-feedback channels. These services must be accessible to all citizens irrespective of their capability, education levels and cultural / language background, and essentially must contribute towards bridging the digital divide rather than widening it. For developing countries technical aspects such as low speed of connectivity to Internet, lower capabilities and capacity of the access devices, and low IT literacy levels of the users, must also be taken into consideration.

A simplified and extended version of the W3C Web Accessibility Guidelines, more applicable for the e-government website has been defined and published by the Central Office of Information of the government of the United Kingdom (http://www.coi.gov.uk). Referred to as the "COI Usability Toolkit", this framework provides the necessary guidelines to determine the usability of an e-government website across the following dimensions.

1 **Page layouts and consistency**

An assessment on the design and layout structure of pages to determine how the content should appear in manner that it will be easy to read and act upon. This dimension also covers the degree of consistency in presentation of information throughout the website and typically is based on the use of a master template that defines the location and layout of the key components such as navigation bars, link to home page, help and assistance, use of proper styles for headings, sub headings and typefaces etc.

The guidelines state that the layout should be consistent within the site and if possible multiple sites. This makes the site use easier for a general user with relatively low exposure to technology.

2 Site navigation

It is not difficult for a novice user to get "lost" in cyber space, without being able to determine where he is and how to get to the information that he requires. A useable website must have a consistent and simple navigation structure that is easy to use and understand. The site navigation aspects of a website measures how the links stand out and are understood by the users. It should include assessment of basic design considerations in common navigational elements like "breadcrumb trails", tabs and "in-page contents lists".

3 Content writing and presentation

Assessment of the style used in writing content so that it becomes appropriate for the Web and can be read and understood quickly and easily by the audience. Additional concerns of this dimension are the accuracy and relevance of the content to the site, use of multi-lingual options and the use of non-text based content such as images, graphics and animation, for effective presentation of information.

4 Content elements and supportive tools

Asses the appropriate use of elements such as portable documents, images, audio, video and animations, in the correct format for viewing through different platforms / audiences and their ability to communicate for site's intended for messaging quickly, clearly and with good accessibility.

The developers must use different types of content elements considering number of factors. While the use of rich media content such as images, animation, video and audio would enhance the information delivery aspects of the site the same can also load the site with a heavy technical burden. For instance when accessing from a low bandwidth connection, which is often the case for developing countries these content elements can make the site to be extremely slow and non-responsive. It may also increase the "cost" to the user in accessing the site due to the longer access time and the larger data volumes involved.

5 Forms and interactive content

Asses the design and layout of basic forms (if used in the website) so that they are easy to understand and fill out. In addition the measures taken to minimize potential errors made by users in filling out such forms, and tools used to assist in fixing such errors as quick and easy as possible, should also be considered.

6 Information search facilities

Asses the way search facilities are provided within the site and the presentation of search results to the user.

Guidelines for Sri Lankan e-government websites are specified in the document titled "Web Standards for Developing Government Website of Sri Lanka" published by the Information and Communication Technology Agency (ICTA) of Sri Lanka. This document provides a series of broad based guidelines for web layout and content design that are parallel to the W3C Web Accessibility Guidelines. In addition the document also specifies the local standards for several other dimensions such as the proper use of domain names, contact information, multiple language support etc.

One of the common complaints received about government websites is the lack of attention in maintaining the site and its content. It is not uncommon to see government websites becoming abandoned shortly after being launched. These sites are rarely updated and often contain information that is obsolete and inaccurate. In order to address these issues, and several other issues, the ICTA guidelines have directives that govern the updating and maintenance of government websites.

Among the several broad based parameters in the ICTA framework and guidelines for government web sites and their services, the following were measured during this study:

Content Language

- All on-line content must be published in all three official languages (Sinhala, Tamil and English)
- All downloadable content (forms, reports etc) must be available in all three official languages
- Website must include a "language selection" page at the beginning
- All pages must have language selection option on the top-right hand corner of the web page.
- List of downloadable information with necessary links

Web site information requirements

The following pages / minimum information is recommended

- Link to Government Web Portal
- List of eServices available at the institution
- Directory of services available at the organization with charges and fees (if applicable)
- Fees and charges applicable for services offered by the organization
- A scrolling news line
- A page describing the organization, its structure and objectives (an 'About Us'

page)
- List of contacts and modes of contact (Contact Us page)
- Search facility for site content
- Frequently Asked Questions (FAQ) section
- Site map and navigation structure

Information update requirements

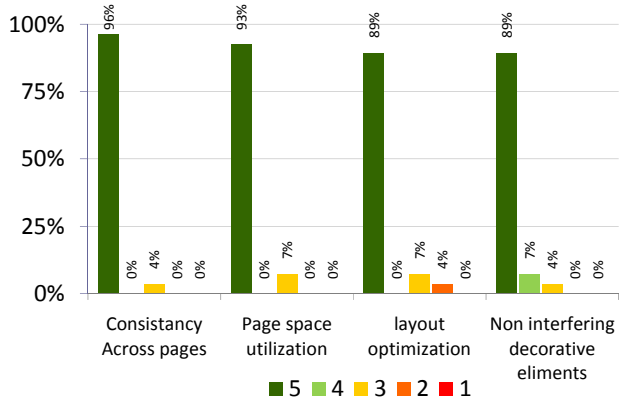
- The following information must be updated at least on a monthly cycle.
  - News
  - Staff details and contact information
  - Changes to services and related information
- The site must clearly indicate the date of the last information update.

5.4.2 Web Content Analysis

5.4.2.1 Layout and Appearance of the Website

Maintaining consistency and a uniform layout across multiple sections of a website makes it much easier for a user to navigate, read and extract information from different sections or pages within the site. Assessment of this usability dimension was made using four parameters that included an assessment on the consistency of the page layout, utilization of browsers page space, degree of optimization in the layout to show different types of content, and the proper use of decorative elements without interfering with content or the information contained. All these parameters were assessed using a five point Likert Scale based on the guidelines specified in Appendix 6.

Figure 31 : Results of layout and appearance



Category	Mean	Std. Div
Consistency Across pages	4.93	0.38
Page space utilization	4.86	0.52
layout optimization	4.75	0.75
Non interfering decorative elements	4.86	0.45

Majority of the websites surveyed were implemented using a content management system. This ensured that the pages within the site were designed and presented according to a common, selectable page template thereby ensuring a general consistency in the layout. This was highly significant in the websites of the Divisional Secretariats where the same content management system was deployed ensuring consistency not only within the site but also across websites of different DS units.

All websites examined maintained a general consistency in the layout and appearance except for few outliers. These were mostly due to the use of oversized graphics and documents / layout elements. In general the utilization of page space was good with majority of space devoted to the presentation of informative elements rather than decorative content. Layout in most cases was best viewed with screen resolution of 1024 x 768 pixels which is well supported in today's computer displays. Many of the sites had used decorative elements to enhance their visibility and aesthetic aspects in general but did not interfere with

the informative content of the site. Overall the layout and appearance of the surveyed websites were at a higher level in terms of their usability aspects.

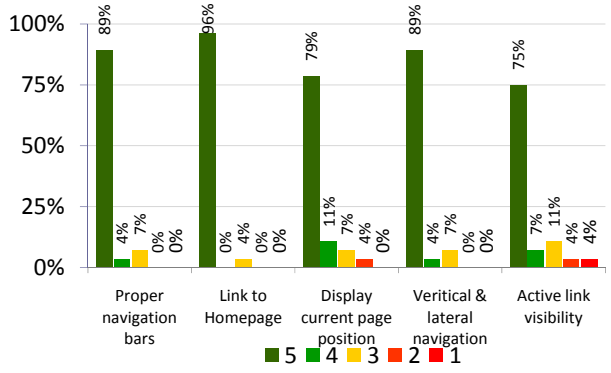
5.4.2.2 Site Navigation

A properly designed website is usually partitioned into number of sections and pages within each section. Such partitioning helps the sites to structure their information methodically allowing the user to find the required information with minimum effort. Usually these sections / pages are interlinked (i.e. hyperlinked) such that the user can move quickly from one page to another with relevant content at the click of a mouse button. However such complex organization of information also has drawbacks where the user could easily get himself lost among a number of interlinked information while navigating through the pages of the website. Therefore it is important to provide a good navigation structure and navigation tools that enable the user to find where he is, and to move to the required section/page for the information.

One key important factor in navigation structure is the proper use of navigation bars that provides direct links to various sections of the website. Standard types of navigation aids in the form of menu bars, navigation icon / image maps, breadcrumb bars, popup menus etc are usually structured to provide user navigation vertically (i.e. across different sections of the site) as well as horizontally (within a section) based on the information organization of the website. A good scheme should always display the current position of the user in the navigation structure and provide a direct link to the Home (root) page of the website allowing the user to return back to the start at any given time. Furthermore, when links are embedded in other content of the page using a highlighting scheme to prominently display the active links, these become useful for many users.

During this survey the navigation structure and capability of the website was measured using five parameters that included, the assessment of the use of proper navigation tools, availability of vertical and lateral navigation, highlighting of active links, display of current page position, and the availability of a direct link to the website's home page. All parameters were measured on a five point Likert scale based on the guidelines describes in Appendix 6.

Figure 32: Assessment website navigation structure and capabilities



Category	Mean	Std. Div
Proper navigation bars	4.82	0.55
Link to homepage	4.93	0.38
Show current page position	4.64	0.78
Vertical & lateral navigation	4.82	0.55
Active link visibility	4.46	1.07

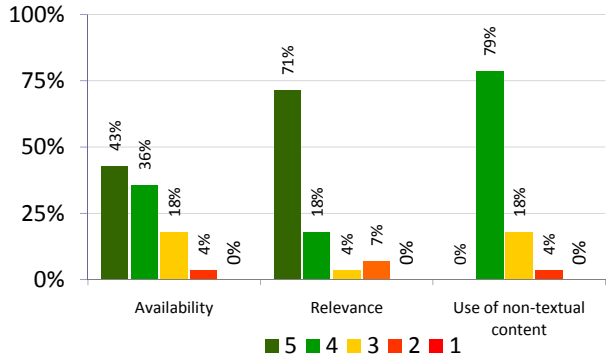
The overall navigation structure and capability of the websites surveyed during this study was at remarkably good levels except for few isolated cases. Due to use of a template based content management system in the website, almost all sites had a uniform and structured navigation scheme throughout all the pages and sections. However in some

websites the navigation links embedded in the main content areas were not properly highlighted and were given lower scores in the related assessments. Similarly, the website template used in most sites did not contain a layout element to display the current page position making such non visible in some of the content pages.

5.4.2.3 Assessment of Website content

The most important components in any web site undoubtedly are the information content included within the site. Measurements used in the survey included the general availability of content under hyperlinks, general relevance of the content to objectives of the web site, and the use of appropriate non-textual presentation tools to display information in a way the users can easily understand.

Figure 33: Assessment of website content



Parameter	Mean	Std. Div
Availability	4.18	0.86
Relevance	4.54	0.88
Use of non-textual content	3.75	0.52

Compared to the website layout, appearance, and the navigation structure dimensions, all the websites included in this survey performed poorly in terms of their content. All the websites had at least few pages where either the content was not available under the given links or the content included was not relevant to the context of the hyperlink or the website. For examples three of the Divisional secretariat websites that were outside the Colombo district displayed issues and needs relating to the Colombo district under the section titled “Development Needs”. Similarly content included under “News and Events” in the Kekirawa Divisional Secretariat website related to the Colombo Divisional Secretariat[22]. Another common observation made with respect to Divisional Secretariats was that the pages describing the services offered and their procedures were most of the time not available.

Use of non-textual elements in the display of information remained at moderate levels for most of the websites. In the Divisional Secretariat web sites this was limited to photographic images and line charts while some of the other government websites used graphical elements such as bar charts to display statistical information. In general in most websites the use of non-textual elements were for aesthetic purposes rather than for information display.

5.4.2.4 Use of content elements

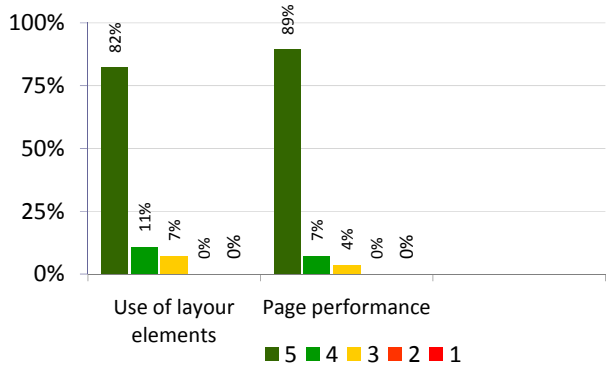
The web interface provides a number of tools and of presentation elements such as portable documents, images, audio, video and animations, etc., to support viewing information in the correct format through different devices / audiences and to improve their ability to communicate site’s intended messages quickly, clearly, and with good accessibility. However the site designers must use them appropriately because most of them require higher network bandwidth and page loading, and therefore extensive use may affect the

[22] Accessed on 25/11/2013

performance of the website, mostly in terms of the page loading time. Some of these elements may also cause compatibly issues across different web browsers and operating systems.

This survey included two measurements; the extent of use in different content elements and performance of the webpage. The former measured the appropriate application of different types of content tools in a web page while the later measured their effect on the page performance. The page performance was measured using a standard ADSL connection during the peak hours of the day. The general guidelines used for the Likert scale in these measurements are presented in Appendix 6.

Figure 34: Use of web content elements



Parameter	Mean	Std. Div
Use of layout elements	4.75	0.59
Page performance	4.86	0.45

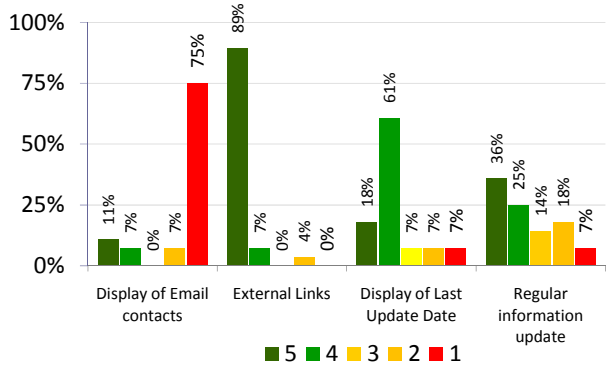
Almost all of the web sites surveyed had their downloadable information in Portable Document Format (PDF) enabling them to be viewed across different platforms. However other than this the general use of different content elements remained at a moderate levels. Use of formatted tables, graphics and charts was at minimum levels and in most cases information was presented in plain text layouts. In instances where photographic images were used, often they were not compressed appropriately to suit the document size. Some downloadable PDF files included large embedded document images imposing a heavy toll on the file size. In most cases these factors contributed to lower page performance.

5.4.2.5 ICTA Guidelines for government website

ICTA has published a comprehensive set of guidelines for government websites. The objective of these guidelines are to ensure that the website is usable to the general public and is maintained and updated regularly with accurate and time valid information. This survey included 10 different measurements to assess the adherence of websites in the sample to these guidelines. Some of the measurements were made using a Likert scale while the others were based on binary results.

Parameters measured on a Likert scale included the availability of correct email addresses (in the correct domain as per ICTA guidelines), presentation of external links, localization (tri-lingual language support) of content, display of last update date, and the information update requirements which states that key dynamic data such as News & Events, Staff Contact details to be updated at least once a month. Details of the Likert scale used for this assessment are presented in Appendix 6. Parameters related to availability of specified contents such as the directory of services, scrolling news line, organizational structure, and list of contacts. Frequently Asked Questions (FAQ) and search facility on the other hand were measured using a binary scale.

Figure 35: Assessment ICTA website guidelines



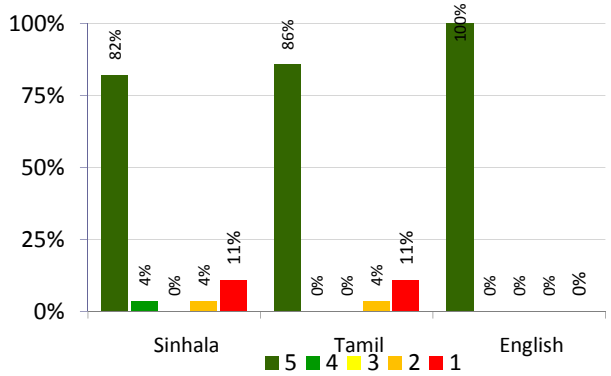
Category	Mean	Std. Div
Display of email contacts	1.71	1.41
External links	4.82	0.61
Display of last update date	3.75	1.08
Regular information updates	3.64	1.34

In spite of the ICTA guideline on displaying the official email addresses (with proper domain name) of key staff in the organization, all Divisional Secretariat websites except the "Hettipola Divisional Secretariat" were not displaying the email contact details. Available staff contacts were limited to their official and mobile phone numbers. Other organizations such as the departments however had their email contact details but some were not within the government domain (i.e. were displaying Gmail or Hotmail addresses).

For divisional secretariats the page template of the content management system included a field that displayed the date of the last update. However this was limited only to some of the pages and on the rest of pages the information was rarely available.

Overall compliance with information update guidelines of the ICTA was poor across the entire sample. As per the guidelines, key variable information such as "News & Events", staff contact details must be updated at least once a month. However in most of the websites surveyed this requirement was not complied with. In many of the websites it was evident that even the "News & Event" page has not been updated since the date the site was initially launched (i.e. the latest news item was about launch of the website). There were also instances where the "News & Events" section had details relating to areas outside the division, probably because the details may have been simply copied from a similar page of a different division. In some instances, the last updates date, ranged from few months ago to as far back as 2011.

Figure 36: Availability of tri-lingual content

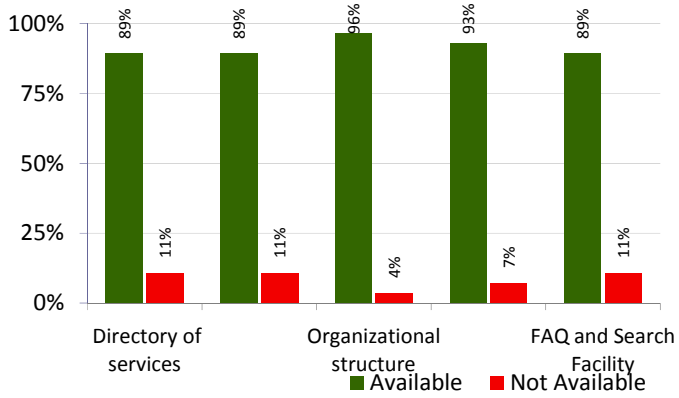


Language	Mean	Std. Div
Sinhala	4.43	1.35
Tamil	4.46	1.35
English	5.00	0.00

Compliance with the requirements relating to tri-lingual content was exceptionally good especially with respect to websites of the Divisional Secretariats. All these websites had 100 % of their content available in all three languages with support language switching, as per the ICTA guidelines. However with respect to departmental websites the situation can be

further improved. For instance the department of Import and Export control complied with the trilingual requirement only in its welcome page, and rest of the site was available in English language only. Website of the Registrar of companies was limited only to English language, while limited content was available in Tamil at the department of Inland Revenue.

The website guidelines provide by ICTA to government organizations includes common information that provides details about the organization and its services. This includes a directory of services offered by the organization, organizational structure, and contact details of key officials. In addition it is also recommended to include scrolling of new lines given latest events and news related to the organization, and a Frequently Asked Questions section with a search facility. These aspects were also assessed in the sample websites for their availability and operational level.



The common design template used in the content management system of Divisional Secretariat Websites had the above sections included in the basic organization of the websites. Therefore the sections were commonly available in all relevant websites in a uniform manner. The situation was also common with departmental websites that had been developed or modernized with support from ICTA. Almost all the sites had relatively time valid information in sections such as directory of services, list of contacts, organization structure and FAQ/search. However, details available under the scrolling news line had been rarely (if not at all) been updated since the launch of the website in most sites in the sample.

5.5 Level of E-Service Usage

5.5.1 E-Government Services - Usage

Availability of online public services ('supply-side') has been the primary focus of e-government studies and policy making, but over the past years, citizen usage of e-government services ('demand-side') has also become a priority issue. The UN E-Government Report states that an increasing number of governments, mostly in developed countries, are making greater efforts to increase usage of services since they recognize that the objective of e-government services will be achieved only by increasing the number and type of users, and the frequency of its use.

The UN E-Government Report states there is no comprehensive data available to assess citizen usages at the global level. Data is not yet systematically collected and uniformly available across countries around the world. There are only a few studies of some developing countries (e.g. Bahrain, Pakistan, Nigeria, Saudi Arabia, gulf region countries, and Bangladesh). According to them, the level of e-government usage is generally low, even as it is in most advanced countries. In EU 27 countries, the average usage rate is 32 percent, and in OECD countries, the average usage rate in 2010 was only around 40 per

cent, notwithstanding recent increases in citizen take-up of e-services.

5.5.2 Factors identified in UN E-Government Survey 2012

Factors identified as affecting the usage of e-government services are based on user's motivations, satisfaction and underlying intentions to use e-government services. These factors range from convenience, to concerns over trust, security and privacy.

- Convenience is the dominant factor and generally understood as enjoying 24-7 accesses and saving travel. Convenience is often found as a stronger incentive than mere cost-saving, even in developing countries (e.g., Malaysia, India, and Albania).

- Privacy and security concerns are also important. They potentially work as barriers impeding e-service usage as they prevent users from trusting and therefore using e-government services. In fact, they are often mentioned as a major reason for non-usage of e-government services. Lack of clear policy statements on privacy and security are likely to discourage citizens from using e-government services. According to Survey data, less than half of the United Nations Member States provide such statements on their websites. 79 countries (41 per cent of 193 United Nations Member States) provide a privacy statement (including developing countries). Only 39countries (20 per cent of United Nations Member States) have a visible security policy with a secure ink feature clearly indicated on their government website. For example, In Australia, security presents a critical issue for those using e-services. The majority (83 percent) of Australian citizens contacting the government by Internet would even prefer to re-enter their personal information each time they use a web site rather than have their details stored by the government agency.

- Trust in using e –government services is also critical. And there is a positive and important cycle of interaction between trust and transparency. As online transparency leads to greater trust, citizens are likely to use e-government more often.

- Another important factor is usability. Good usability and perceived ease of use, increase e-service usage. Government web sites with poor technical design often present usability problems in terms of the initial search and the internal navigation. Having robust search engines is particularly important, as they are the most common entry point for government website interactions. At present, the level of usability is generally low, at least as measured by some indicators such as availability of a glossary of words helping users understand the content of government websites, and tutorials guiding users to access e-services. The Survey 2012 data show, that websites of only 28 countries (15 per cent of 193United Nations Member States) contain a glossary of words. The situation is somewhat better with respect to the availability of a tutorial: 52 countries (27per cent of United Nations Member States) provide a tutorial on their national portal guiding users to access to e-services.

- Citizen-centricity and focus on user needs are also highly relevant to e-service usage. The more citizen-centric personalized e-government services are, with strong the user focus, the more their uptake is likely to increase. Interest among different citizens and citizen groups in using specific e-services depends on their personal situation. For example, e-services needed by unemployed people are very different from those services needed by retirees. To make e-services more relevant to citizens, some governments have begun to identify and segment their base and group their services around citizens' needs and situations based on a life-event or themed approach. For example, the Norwegian Agency for Public Management and

e-Government integrates the personalized, one stop self-service portal 'Miside' with the existing 'Noreg.no'. The new Noreg.no (http://www.noreg.no) aims to present information and e-services based on the "life event approach.

The Singaporean Government uses a proactive "sense and respond" approach to anticipate citizens' demands and provide integrated services geared towards users' needs. One Stop Gov, an important, high impact pilot project funded by the European Commission, aims to integrate disparate e-government services around life events for more personalized services.

- Incorporating citizen satisfaction and feedback is another important area. According to a comprehensive study and statistics on United States e-government satisfaction, citizen-centric and user needs focused services will improve citizen satisfaction. Satisfaction then increases the likelihood that the citizen will return to the website. Government agencies therefore need to make explicit efforts to increase citizen satisfaction and incorporate this as an important factor in policy design for usage increase.

  The Dubai Government's recent launch of an online customer satisfaction survey is a step in the right direction. This is particularly encouraging, as there is limited user satisfaction monitoring in many countries. Even in Europe, not even one third of government websites can be rated and commented upon by the user.

- Usage divide across countries: The differences in e-service usage among countries seem very much driven by infrastructure and connectivity, as citizen up take of e-government services heavily depends on broadband Internet connectivity. Research conducted by OECD indicates the importance of broadband access for e-government usage. When it comes to e-government, broad band connectivity is critical, even in the most highly developed countries such as those in Europe. Government service usage is found to be very much contingent on fast and reliable Internet connection. Developing countries (e.g., Malaysia, Vietnam) have shown that a higher level of broad band penetration is a pre-requisite for any governmental effort to increase citizen usage of e-government service. This presents an important challenge for developing countries, where broadband penetration remains limited.

- The power of widespread mobile technology offers a good opportunity to extend public services to citizens, especially in developing countries. But at the same time, it should be noted that there are technical constraints that can limit m-service usage, and that mobile broadband technology is still in its early stages. Thus, the winning approach would be in getting the right mix and balance of mobile technology and broadband Internet connectivity – with a clear focus on the next major step, namely, putting abroad band vision in place and "repeating the 'mobile miracle' for broadband Internet, "as stated in the latest ITU report.

- Social media holds much potential for increasing citizen usage of e-services. There has been a drastic rise of social media (e.g. Face book, Twitter, Micro Blog, VK), which continue to grow rapidly, including through the use of mobile technology. Government agencies are now using social media to improve public services, reduce costs and increase transparency. Through these media, they can inform citizens, promote their services, seek public views and feedback, and monitor satisfaction with the services they offer so as to improve their quality. As social media enables two-way communication in real time, government agencies can engage citizens as co-producers of services, not just passive recipients. The

latest study found that 66 percent of all United States Government agencies currently use some form of social networking. More than half of 78 countries providing a statement 'follow us on Face book or Twitter' are from the developing world and from different regions, even in most underdeveloped region like Africa. The table below gives a list of these countries.

Table 6.1 List of countries with government websites providing a statement 'follow us on Facebook or Twitter'

Africa	Americas	Asia	Europe	Oceania
Côte d'Ivoire	Antigua and Barbuda	Afghanistan	Andorra	Kiribati
Democratic Republic of the Congo	Argentina	Azerbaijan	Austria	Vanuatu
Equatorial Guinea	Belize	Bahrain	Belgium	
Ethiopia	Brazil	Brunei Darussalam	Croatia	
Ghana	Canada	Georgia	Finland	
Guinea-Bissau	Chile	Iraq	France	
Morocco	Colombia	Israel	Germany	
Nigeria	Cuba	Japan	Greece	
Somalia	Dominican Republic	Malaysia	Hungary	
South Africa	Ecuador	Mongolia	Italy	
Sudan	El Salvador	Oman	Latvia	
Tunisia	Grenada	Pakistan	Liechtenstein	
	Guatemala	Philippines	Lithuania	
	Honduras	Qatar	Luxembourg	
	Mexico	Republic of Korea	Netherlands	
	Panama	Saudi Arabia	Norway	
	Paraguay	Singapore	Portugal	
	Peru	Thailand	Russian Federation	
	United States	United Arab Emirates	Spain	
	Uruguay	Uzbekistan	Sweden	
	Venezuela		Switzerland	

- Open data is becoming an important government-provided raw information service that citizens can freely use, create value out of, and even co-produce. Open data affords the possibility for users to co-produce e-government information and services. Users of the service are considered not just mere consumers and passive recipients of services, but valuable assets and resources that can collaborate with government in their interest. From the usage point of view, this has an important implication. Co-production has the effect of ultimately blurring the distinction between service providers and user communities. In fact, it is even argued that co-production can transform mainstream public services into more effective ones as it offers a radically new approach by sharing the design and delivery of services with users. The rise of open data has created e/m-services for assisting with public emergencies, accelerating the ability of communities of volunteers to co-produce public services, which tend to be faster and more responsive in emergency situations than those provided by government agencies alone. In this context, freedom of Information (FOI) legislation warrants attention. FOI is an important cornerstone of open data use because the latter can only take place when there is a right to access government information.

- Governments should pro-actively engage themselves in activities to increase awareness of, promote and popularize e-service usage. Otherwise, despite the high number of e-services available, their usage levels may remain below expectations. Some countries are applying various practices to increase public awareness and promote e-services. These include the Dubai Government's various channels and mechanism for e-service awareness, the Republic of Korea's effort to use and promote the "Pororo" figure as an "e-government publicity ambassador," and the United States Department of the Interior's e-government strategy. However, it has been identified that the efforts of countries are generally not very good. Even developed countries are lacking marketing and promotion strategies and only about half of government institutions communicate their e-government goals and benefits to citizens and businesses. However, some countries go beyond promotion of their eservices and offer additional, sometimes substantial incentives. Several countries (e.g., France, Ireland and Singapore) offer an extended filing period for users of online tax filing services. In the United States, the Free File website allows most tax payers to prepare and file their taxes online for free and get their refunds in half the time it would take to process their paper returns.

Chapter 6: Conclusions and Recommendations

This chapter presents the overall study conclusions including the issues and constraints faced in the implementation of the survey and a list of recommendations which would facilitate achievement of the outcomes and impact on the, re-engineering government program.

6.1 Challenges faced

- There were 60 public services identified:.
- Equal representation by gender, age group, ethnicity, services was not possible and Therefore the sample was taken from the visitors present at the organizations, but all effort was made to obtain a realistic representation, which was achieved.
- Visitors were reluctant to spend time with the enumerators but the enumerators had evolved with methods of motivating respondents to participate in the survey.
- Visitors were reluctant or unable to respond to certain questions in the questionnaire but again the enumerators used different approaches to get the respective responses.
- There had been a delay in obtaining the required sample in the field due to objections from non partner organization as well as due to CHOGM; but the delay was not that significant.
- The visitors in the provinces were mostly not computer literate. This situation has been reflected in the analysis.
- Some visitors had negative thinking towards government services and were very critical; the enumerators avoided such respondents.
- The visitors expected instant results from the enumerators for taking part in the survey; but the enumerators explained that they are conducting a fact finding survey of the current level of services to be improved in the near future.
- However the survey was concluded without many issues, and completed during the latter part of November 2013.

6.2 Conclusion

Visitors' awareness and familiarity with government e-services are low due to the fact that Sri Lankans have less capacity and access the use of ICT culture and e-services. However, at this initial stage, the level of participation by citizens in the ICTA initiated e-services has been encouraging. It is encouraging the note the number of citizens using the government web sites and the GIC for searching information. The most popular web site among the government organizations was the Department of Examination to see examination results. The visitors were very positive about using the government e-services; and their perception was that it is very important for the government to increase awareness of the e-services. The visitors were of the opinion that the most relevant and highly used citizen services should be given priority for conversion to e-services. In addition, they were of the view that most of the services centralized in Colombo should be decentralized with the introduction of e-services. This approach will certainly able to save time and money of the citizens. Overall, visitors were satisfied with the services of the government and the services provided through

electronic means. The visitors were also fairly computer literate but at provincial level it was very low. Northern and Eastern provinces are keen on improving the government services through e-services as they are somewhat computer literate.

The following are the salient features of the survey results.

- Previously, visitors had spent more time to obtain the government service than present.
- Previously, visitors had spent more money to obtain government services than present.
- 25% were aware of the web sites of the surveyed organizations and almost all of them have a positive perception and attitude towards these web sites.
- Most of the visitors were not aware of the e-services provided by the government.
- 20% were aware of the online services such as Train Scheduling, Crop Prices, BMD certificates and 1919 Telephone services; hut overall usage was 7% of which 22% had used 1919 service.
- Among the visitors who used the online services, almost all the visitors were satisfied with the services.
- Attitudinal change of the government organizations' staff to improve productivity.
- Visitors accessed government organizations web sites mainly in search of information.
- Average number of visits, institutions visited, counters visited, and cost of visits, have reduced compared to the past.
- Government Organizations websites have a highly usable structure, information organization, and technical features, supporting usability by the general public irrespective of their ICT literacy, mode of access, and language barriers. However, regular update of content remains poor with significant number of websites in the sample not being update for long periods.

6.3 Recommendations

Few recommendations are being submitted for consideration of ICTA;

- Create effective awareness to promote the usage of electronic public services by the citizens.
- Regular dialogue with government officers of the Additional Secretary level for following up successful implementation of LGN.
- Further strengthen the capacity of government staff on basic IT, ITR technical skills and change management aiming efficient and effective government services.
- Follow up the usage of Lanka Government Network, as it is the most critical infrastructure in delivering government services

- At present, the numbers of services available in LGN are limited. Hence, number of applications/ databases need to be developed and introduced.
- Develop strategies to retain the trained staff in the organizations without being transferred elsewhere to ensure continuity of eServices.
- The existing Computer Literacy Rate of 40% should be increased by revisiting the 'Nenasala" program; encourage computer education facilities through incentives.
- North and East provinces should be given special attention in computer literacy and the use of ICT to update the systems.
- The government organizations web sites should be updated regularly according to the guideline of the e-Policy.
- The most relevant and highly used government services should be converted to e-services immediately; feasibility studies for each service should be conducted prior to converting them by identifying appropriate baseline parameters that will make them more convenient to visitors.
- E-Services should have a well planned awareness and propaganda campaign to inform the citizens about the e-services and its benefits. This would increase awareness among users of government services, create a culture of e-searching for government services resulting in phasing out contacting government in person.
- To set up a centralized mechanism to monitor all government websites with information updates and take necessary remedial action.
- Strengthen monitoring and evaluation unit to implement follow up visits to government organizations as necessary.
- Establish strong working relations and maintain dialog with government organizations.
- It is necessary to prepare a strategic plan to develop a need based e-services to support the internal efficiency of the government organizations, promote interoperability and promote interagency data sharing with the follow up of LGN usage and upgrading.

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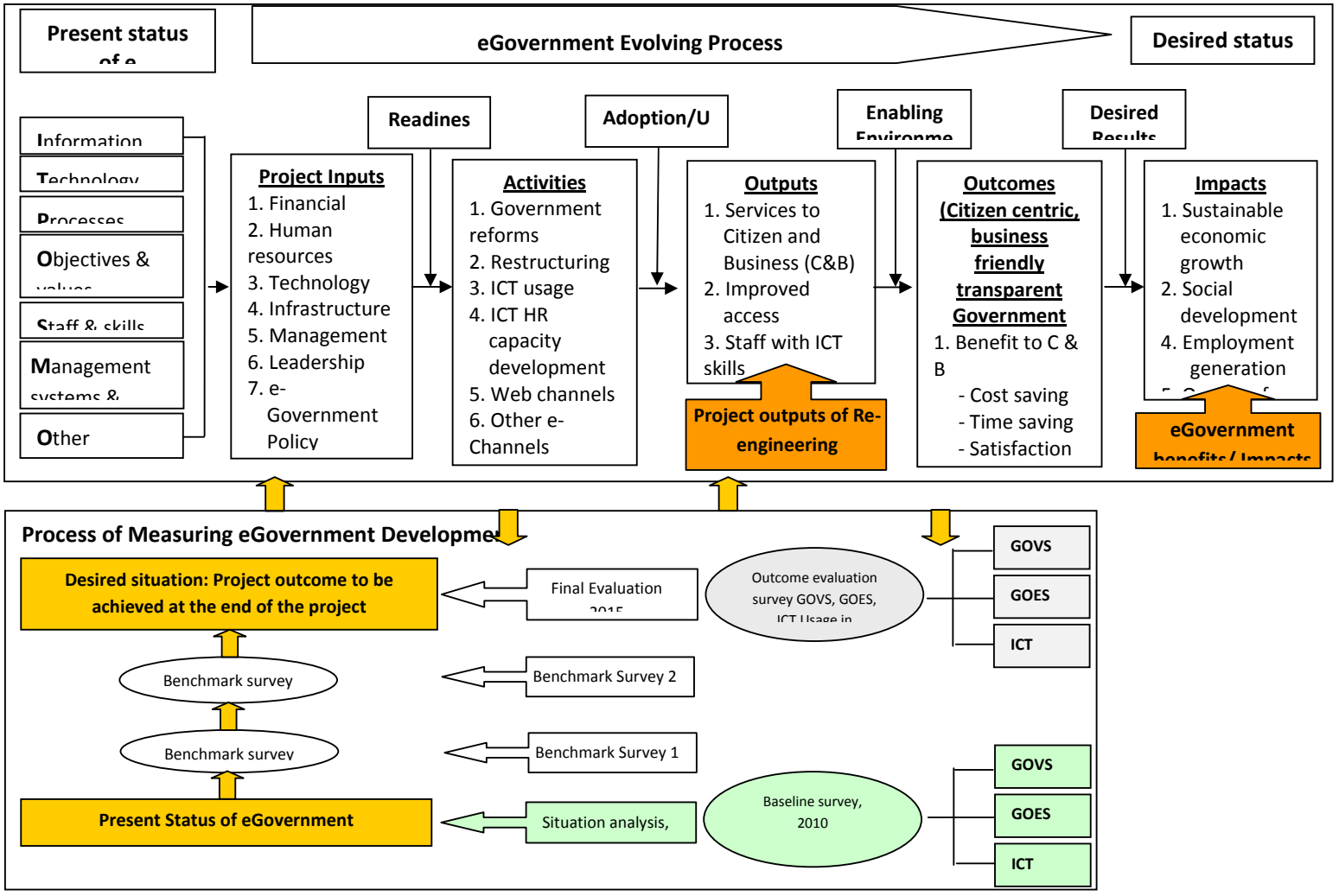
APPENDICES

Appendix 1: Sri Lanka eGovernment Benchmarking Model



Appendix 1: Sri Lanka e-Government Benchmarking Model

Appendix 2: E-Government Benefits: Direct and Indirect Benefits of e-Government to government and non-government stakeholders

Beneficiaries / Type of Benefit	Government	Non-Government (Citizens & Business)
Direct Financial Costs and Benefits	**1) Reducing Costs**: freeing resources for public and private innovation; increasing value of products and services	**2) Reducing Burden**: administrative simplification; providing higher valued and faster services; saving time and money and improving equity
Direct Non-Financial Costs and Benefits	**3) Capturing Total Benefits of Investment:** achieving synergies across service delivery channels; enabling the sharing and reuse of data for more proactive service delivery; promoting access as part of channel management strategy	**4) Increasing User Satisfaction:** 24/7 service; improving personalization and service quality; improving access and equity; addressing security and privacy concerns; transparency and choice
Indirect Costs and Benefits: "Good Governance" as a Public Good	**5)Supporting Legitimacy**: supporting security and trust at an aggregate level; modernization and transformation of the public sector; ensuring equity; increasing responsiveness, accountability and participation	6) Supporting Growth: improving the business environment; creating an information society; establishing an infrastructure for secure and reliable transactions

Source: OECD e-Government Project, "Proposed Outline for Assessing e-Government Benefits" (2006).

Appendix 3: Logical Framework Matrix for Re-engineering Government Programme

Narrative Summary	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Assumptions
Programme goal: Improve efficiency, transparency, effectiveness, and quality of Government services. (contribute to achieve the e Sri Lanka overall goal)	10% of target beneficiaries (5 million citizens and businesses) conducting transactions with the central government on-line	National Survey on e-Government use and e-service satisfaction	GoSL commitment to establish the policies , institutions and strategies to meet e government objectives
	% citizens satisified with cGovernment services	National Survey on e-Government use and e-service satisfaction	
	Perception of citizens and business on transparency of government	National Survey on e-Government use and e-service satisfaction	
	International rating on Government's transparency	"Transparency international" index	Improved e-services help to raise transparency in Government services and contribute to overall transparency
Programme Objectives Improve service delivery of Government services by establishing more efficient, faster, more transparent e-Government services to all citizens (G2C), business (G2B) and government (G2G)	Level of satisfaction with government e-services Number of services (G2C, G2B, G2G) available online according to e-service maturity[23] % of user's satisfaction with e-services received (measuring e-service quality) ICT policy setting the overall framework for e-Government is approved	ICTA M&E surveys – GOVS, GOES, ICT usage in Government survey Bi annual benchmark surveys (remark Jost: Benchmarking in comparison with whom? Regional one?)	e Government policy approved by the GoSL Enabling legal environment is created High level of adaption and awareness on ICT related laws Empowered society Infrastructure available and operational

Programme Results	Outcomes	MOVs	Assumptions

[23] TO be measured in 4 stages from 1 (information provision only) to 4 (full case handling including transaction, decision and payments)

Narrative Summary	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Assumptions
	Level and degree of ICT policy implementation		
Training of Government key personnel in the IT and use of IT as enabler for e-Government (see HRCB programme component)	See HRCB programme component		
Basic infrastructure installation (GIDC, GIC)	100 agencies with an operational portal or Web site	Internal ICTA reports	
Development of selected e-services (e-FEB, e-pension, e-HRM, PopReg, Laksala	20 on-line services created for and used by private sector and citizens	Internal ICTA reports	
	3 on-line services created for and used by public sector	Internal ICTA reports	
	e-services development according to e-Government service stages (1 pure information to 4 case handling)	Internal ICTA reports	
Sub-results to be achieved:			
1) e Government Policy document	Government ICT policy is available and approved by the Cabinet No of Government staff trained on e government policy Level of compliance of government offices to the e government policy	Official letter Internal ICTA training documentations Survey	.
2) e-Divisional Secretariat system	Level of satisfaction of citizens with eDS services email communication with other "email-enabled" govt. Organisations	Survey to be conducted one year after training completion LGN statistics	
3) e-Foreign Employment Bureau system	Number and variety of foreign employment opportunities taken up Usage of eFEB system	e-FEB survey e-FEB survey (to come)	
4) e-Human Resources Management system	Public sector employees' perceptions of	GOES survey	

Narrative Summary	Objectively Verifiable Indicators (OVI)	Means of Verification (MoV)	Assumptions
	eHRM Staff and management use of information and reports, as measured by systems access and reports generated.	 Internal system statistics	
5) e-Pension system	% of pensioners who are satisfied with the pension service after one year of operations compared with previously % of new pensioners receiving first payment within 1 month of retirement % of all pensioners receiving pensions each month on the designated day	GOVS survey	
6) e-Population Registration system	% of newborns who have been assigned with a PIN within x weeks after birth	Inernal system statistics	
7) GIDC	numbers of web accesses to official government websites # and classification of services offered through web sites	ICTA Stats GIDC Report	
8) GIC	Usage and satisfaction levels with Call Centre and Website. No. of govt. organisations hosting their info via the Call centre and website	GIC Reports; GIC webcounter GIC Reports	
9) Laksala system	Sales statistics (quantity, range, unit prices etc.) Growth in foreign orders received via the website Growth in direct sales transactions via the website	Internal system statistics	

Appendix 4: Detailed Survey Methodology

Sampling for e-Government Survey Sample

Org. No.	Organization	Organizations			Number of Questionnaires		KIIs	
		District	Population	Sample	Sample	Actual	Sample	Actual
Government Organization								
PO 1	Foreign employment Bureau	Colombo	01	01	12	12	01	01
PO 2	Department. of Motor Traffic	Colombo	01	01	12	12	01	01
PO 3	Department of Pensions	Colombo	01	01	12	12	01	01
PO 4	Registrar of companies	Colombo	01	01	12	12	01	01
PO 5	Department of Import and Export Control	Colombo	01	01	12	12	01	01
PO 6	Department of Inland Revenue	Colombo	01	01	12	12	01	01
PO 7	Department of Labour	Colombo	01	01	12	12	01	01
Sub Total			**07**	**07**	**84**	**84**	**07**	**07**
Land Registry								
LR 1	Delkanda Land Registry	Colombo	04	01	10	10	01	01
LR 2	Galle Land Registry	Galle	03	01	10	10	01	01
LR 3	Kandy Land Registry	Kandy	02	01	10	10	01	01
LR 4	Kurunegala Land Registry	Kurunegala	03	01	10	10	01	01
Sub Total			**12**	**04**	**40**	**40**	**04**	**04**
Divisional Agrarian Services Centers								
DAS 1	Nallur	Jaffna	12	01	10	10	01	01
DAS 2	Mihintale	Anuradhepura	41	01	10	10	01	01
DAS 3	Mawathagama	Kurunegala	55	01	10	09	01	01
DAS 4	Ambalangoda	Galle	33	01	10	10	01	01
		Sub Total	**141**	**04**	**40**	**39**	**04**	**04**
Local Authorities								
LA 1	Colombo Municipal Council	Colombo	13	01	10	10	01	01
LA 2	Gampola Urban Council	Kandy	17	01	10	10	01	01
LA 3	Vavuniya Urban Council	Vavuniya	05	01	10	10	01	01
LA 4	Badulla Pradeshiya Sabha	Badulla	15	01	10	10	01	01
Sub Total			**50**	**04**	**40**	**40**	**04**	**04**
Divisional Secretariats		**District**						
DVS 1	Colombo DVS	Colombo	13	02	20	20	01	01
DVS 2	Kesbewa DVS						01	01
DVS 3	Akurana DVS	Kandy	20	02	20	20	01	01
DVS 4	Kundasale DVS						01	01
DVS 5	Balapitiya DVS	Galle	18	03	30	30	01	01
DVS 6	Habaraduwa DVS						01	01
DVS 7	Ambalangoda DVS						01	01
DVS 8	Jaffna Town DVS	Jaffna	14	02	20	20	01	01
DVS	Thenmarachchit DVS						01	01

Org. No.	Organization	Organizations			Number of Questionnaires		KIIs	
		District	Population	Sample	Sample	Actual	Sample	Actual
9								
DVS 10	Tincomalee Town DVS	Trincomalee	11	02	20	20	01	01
DVS 11	Thambalagamuwa DVS						01	01
DVS 12	Mallawapitiya DVS	Kurunegala	30	03	30	30	01	01
DVS 13	Wariyapola DVS						01	01
DVS 14	Hettipola DVS						01	01
DVS 15	Mihinatale DVS	Anuradhapura	23	03	30	30	01	01
DVS 16	Kekirawa DVS						01	01
DVS 17	Rajanganaya DVS						01	01
DVS 18	Welimada DVS	Badulla	15	02	20	20	01	01
DVS 19	Ella DVS						01	01
DVS 20	Kegalle DVS	Kegalle	17	02	20	16	01	01
DVS 21	Galigamuwa						01	01
Sub Total			**161**	**20**	**210**	**206**	**20**	**20**
Grand Total					**414**	**409**	**39**	**39**

List of organizations selected for the survey

	Organization	Availability of Web URL in Gov.LK Web portal	Operational Web Site
Government organizations			
1	Foreign employment Bureau	Yes	Yes
2	Department. of Motor Traffic	Yes	Yes
3	Department of Pensions	Yes	Yes
4	Registrar of companies	Yes	Yes
5	Department of Import and Export Control	Yes	Yes
6	Department of Inland Revenue	Yes	Yes
7	Department of Labour	Yes	Yes
Land Registries			
8	Delkanda Land Registry	No	No
9	Galle Land Registry	No	No
10	Kandy Land Registry	No	No
11	Kurunegala Land Registry	No	No
Divisional Agrarian Services Centers			
12	Nallur Agrarian Services Centre	No	No
13	Mihintale Agrarian Services Centre	No	No
14	Mawathagama Agrarian Services Centre	No	No
15	Ambalangoda Agrarian Services Centre	No	No
Local Authorities			
16	Colombo Municipal Council	Yes	Yes
17	Gampola Urban Council	No	No
18	Vavuniya Urban Council	No	No
19	Badulla Pradeshiya Sabha	No	No

Divisional Secretariats			
20	Colombo DVS	Yes	Yes
21	Kesbewa DVS	No	Yes
22	Akurana DVS	Yes	Yes
23	Kundasale DVS	Yes	Yes
24	Balapitiya DVS	Yes	Yes
25	Habaraduwa DVS	Yes	Yes
26	Jaffna Town DVS	No	Yes
27	Thenmarachchit DVS	No	Yes
28	Tincomalee Town DVS	Yes	Yes
29	Thambalagamuwa DVS	Yes	Yes
30	Mallawapitiya DVS	No	Yes
31	Wariyapola DVS	No	Yes
32	Hettipola DVS	No	Yes
33	Mihinatale DVS	No	Yes
34	Kekirawa DVS	Yes	Yes
35	Rajanganaya DVS	No	Yes
36	Welimada DVS	Yes	Yes
37	Ella DVS	Yes	Yes
38	Kegalle DVS	Yes	Yes
39	Galigamuwa DVS	No	Yes

Appendix 5: List of Public Services

	List of Public Services
1	Issuance of Birth/ Marriage/Death Certificates
2	Issuance of all Certificates (GN certificate, Electricity...
3	Issuance of all permits (Timber Transport, Tree cutting,....
4	Social Service (illness relief, Low income relief,.....
5	Samurdhi Activities
6	Land permits / information
7	Citizen services (National ID, Passport)
8	Pensions Related services
9	Vehicle Revenue license services
10	Notification of application for recruitment
11	Information on transfers, promotions online – phase I
12	Transfer information (mutual transfer corner)
13	Registration for foreign employment
14	Complains and Grievance handling
15	Facilitate in job application processing and payments
16	Accept payments for insurance by insurance agencies
17	Product marketing information
18	Receiving Regular Pension Payments
19	Provide Land Registry Information
20	License renewal of Job agencies
21	Issuing vehicle information
22	Ongoing vehicle registration number
23	Online Vehicle Number Reservation
24	Number Plate Printing Status Tracking
25	Get EPF accounts detail
26	EPF Claim Approval Tracking
27	Name approval process
28	Business registration
29	Issuance of certified copies
30	Renewing Gun License
31	Issuing of permits granted under the explosives act.
32	Registration of Private Security Agencies
33	Recommendation of Residence Visa
34	Issuing of Timber Permits
35	Payment of Exam fees
36	To obtain a technical Reports
37	Renewed of Driving Licence
38	Submit EPF documents
39	Transfer of vehicle ownership
40	Registration of vehicles
41	To obtain a copy of a deed
42	Check title of a deed

	List of Public Services
43	To obtain a technical Reports
44	Counter Signing a certificate
45	Renewed of Driving Licence
46	Housing matter
47	EPF withdraward
48	ETF withdraward
49	Submit EPF documents
50	To obtain housing aids
51	Documentation for forgin employment
52	Documentation for pensions
53	Correction of the pension Number
54	Registration for W&OP
55	Change of Nomination in W&OP
56	Transfer of state land owned
57	To obtain an import permit
58	To obtain an inspection Report on improted food
59	Company Registration
60	To obtain company legal Documents
61	Renewal of Company Registration
62	Change of Company Names
63	Payment of Assessment Tax
64	To settle legal Matters
65	To obtain tax clearance Certificate
66	To obtain a PIN
67	To obtain infromation
68	To obtain a VAT registration
69	To obtain an income certificate
70	To obatin a resident certificate
71	Payment of utilize bills
72	To obtain business permits
73	To obtain a extract of a deed
74	Registration of a deed
75	Purchase fertilizer
76	To obtain cultivation instructions
77	To settle a land dispute
78	To buy planting seeds
79	Signing Employment Contract

Appendix 6: Assessment guidelines for measurements in layout and appearance of websites

- Measurement of consistency across sections and pages of the website

Score	Description
5	The layout is consistent through all the pages in the website. Typically based on a master page template that determine the appearance and placement of major page components
4	Major components of the website such as navigational aids, help, search links and the primary layout are consistent but the content areas has some degree of variability
3	All pages have a uniform overall structure but theme components such as backgrounds, colour schemes and font styles are not consistent
2	Significant inconstancies are observed on major components across the pages of the website
1	Different pages of the website do not show any consistency

- Utilization of web browser page space in the display of information

Score	Description
5	Page space is optimally utilized for content with minimum space allocated for non-informative and decorative elements
4	Most of the [age space is consumed by informative content and rest of the page is allocated for important structural elements such as page links, navigational components etc.
3	Moderate amount of page space is allocated for informative content. Among the non informative space, a significant portion include structural components such as navigation aids, menus, image maps etc.
2	A significant portion of the page is consumed by the background and non informative components
1	Page on loading is almost utilized by the background, decorative and non-informative content

- Page layout optimization

Score	Description
5	All most all required information is included within the page boundaries. User can retrieve all required information without using horizontal and vertical scroll bars.
4	Majority of required information is available within the screen boundaries. Information may continue beyond the vertical boundary requiring a minor extent of scrolling on vertical direction.
3	All required information can be retrieved within vertical scrolling of one page distance. Intra-page hyperlinks are provided to facilitate into navigation into content that are below the vertical page boundary.
2	Significant extent of scrolling (horizontal / vertical) is required to retrieve important information. No navigational aids are provided to support intra-page navigation.
1	Majority of the required information is placed beyond the page boundaries. User is always required to use scroll in order to retrieve required information

- Non interfering use of decorative elements

Score	Description
5	Decorative elements are used only in appropriate situation and do not interfere with the presentation of informative content.
4	Minimum amount of decorative elements are present and do not interfere with

	content to any noticeable extent.
3	Moderate extent of decorative elements are present and interfere only in minor portion of the pages in the website
2	Decorative elements are present on all pages with considerable interference with informative content.
1	Decorative elements are used extensively and interfere to an extent such the retrieval information is extremely difficult

Assessment guidelines for website navigation structure and capacity

- Use of proper navigation bars and tools

Score	Description
5	Proper navigational components are used such a way that users find it convenient to locate or navigate to the required information within the web page.
4	Proper navigational structure is present in majority of the web pages.
3	Home page provides easy navigation to other pages. Some difficulties exist in subsequent pages.
2	Navigational components are present in pages but finding appropriate link to required information is difficult for the user
1	Site navigation is extremely difficult

- Link to Home page of the website

Score	Description
5	A direct hyperlink to the home page is present on a prominent and consistent all pages of the website.
4	A direct link to the root page is present but not in a prominent nor consistent location of the web page.
3	An indirect link (through a menu button or back button) is present from subsequent pages to the home page
2	Hyperlink (direct or indirect) is present only in few pages.
1	Hyperlink to home page is not present on subsequent pages.

- Display of current page position

Score	Description
5	Current page position and the path to the current page is displayed on all pages and the user can navigate directly to any intermediate position on the path (e.g. use of hyperlinked breadcrumb trails).
4	Current page position and the path to current page are displayed on all pages without the ability to navigate directly to an intermediate position in the path.
3	Current page is displayed on all pages but without the path information to the current page
2	Current position is displayed only in some of the web pages
1	Current page is not indicated

- Vertical and lateral navigation structure

Score	Description
5	Appropriate navigational components are present and prominently displayed to facilitate users to find information easily within and outside the web page
4	Appropriate navigational components are present to facilitate users to find information easily within and outside the web page but not prominently displayed
3	Prominently displayed navigational components facilitates only the vertical navigation
2	Only vertical navigation is facilitated
1	Users find it difficult to find links to information that they searching for

- Highlighting of active links

Score	Description
5	Active, Inactive and visited links are differentiated and presented clearly through all web pages
4	Differentiation is only available in main vertical links. Intra-page links are not clearly differentiated
3	Active and inactive hyperlinks are clearly discriminated but visited hyper links are difficult to differentiate from others.
2	Differentiation is clear on main navigational components but difficult in other type of hyperlinks
1	Difficult to separate active / inactive links in main navigational components as well as within content areas

Assessment of Website content

- Assessment if content availability

Score	Description
5	Website has significant extent of content and all most all pages / hyperlinks within the site are active and informative
4	Website has significant extent of content and is generally available except for few pages were informative areas are not completed / not present
3	Website has a moderate extent of content which is generally available
2	Website has moderate extent but significant portion of the pages are not informative / lack of content
1	Website is limited to few pages which are not provided with useful information

- Relevance of content to website objectives

Score	Description
5	Almost all the content available in the site is directly relevant to the work, objective and scope of the site owning agency
4	In general the site has a significant extent of relevant content in the home page as well as the subsequent pages
3	Most of the home page content is relevant. But subsequent links are directing to content that are less related to the work, scope and the objectives of the site owning agency
2	Moderate extent of relevant content is available in the home page and the subsequent pages of the site
1	Only a small portion of the content is relevant.

- Use of non-textual elements in the content

Score	Description
5	Non-textual components are used on all most all appropriate locations for the presentation of data and information. The site displays properties of a rich user interface
4	Moderate use of non-textual components and only in few of the content areas.
3	Non-textual components re limited to static and portable documents
2	Non-textual components are used only on instances where they cannot be represented accurately using text elements
1	Non textual components are almost not used to present data and information

Appropriate use of content elements in the website

- Use of content elements

Score	Description
5	Correct appropriate layout elements and media file formats are used through

the website and the configuration parameters of the elements are set to reflect correct presentation and display of the element.

4	Correct appropriate layout elements and media file formats are used to a considerable extent
3	Moderate use of layout elements, mostly restricted to text formatting components
2	Layout elements are used but not optimized for the browser compatibilities
1	Layout elements are not used properly and the presentation varies with display parameters and the web browsers

- Effects on page performance

Score	Description
5	Content elements do not have any noticeable effect on the page loading time. Loading time is compatible with the normal text based page
4	Slight delay is noticeable. Text areas get filled before the other content elements. Page loading takes more than 3 seconds
3	Moderate impact on the loading time of the web page. User has to wait more than 7 seconds for the initial view.
2	A considerable delay is observed in the loading and initial display of the web site (over 15 seconds)
1	Page loading and display is significantly delayed due to the use of content elements

Appendix 7: Public Services and the level of satisfaction in obtaining services

Public Service	2010							2011							2013						
	Time taken to obtain public services				Level of satisfaction			Time taken to obtain public services				Level of satisfaction			Time taken to obtain public services				Level of satisfaction		
	Travelling time	Waiting time in the que	Processing time	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied	Travelling time (Min.)	Waiting time in the queue (Min.)	Processing time (Min.)	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied	Travelling time (Min.)	Waiting time in the queue (Min.)	Processing time (Min.)	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied
1. Issuance of Birth/ Marriage/Death Certificates				271	25	43	9	63	57	50	169	33	64	3	48	6	10	65	43	50	6
2. Issuance of all Certificates (GN certificate, Electricity...				89	22	52	0	32	19	12	64	30	70	0							
3. Issuance of all permits (Timber Transport, Tree cutting,....				123	33	20	11	43	20	22	84	29	71	0	33	10	10	53	14	86	0
4. Social Service (illness relief, Low income relief,.....				112	20	29	29	143	84	16	243	60	20	20	46	4	10	60	74	26	0
5. Samurdhi Activities				480	7	71	7	90	3	10	103	50	50	0					57	43	0
6. Land permits / information					20	30	16	35	15	34	84	0	100	0	90	35	15	140	0	86	14
7. Citizen services (National ID, Passport)				480	57	38	5	51	29	37	116	36	46	0	55	11	8	74	7	86	7
8. Pensions Related services				480	46	4	0	70	60	16	146	33	67	0							
9. Vehicle Revenue license services				92	35	35	3	34	15	13	62	52	38	0	43	4	5	52	52	42	6
10. Notification of application for recruitment					0	86	0	480	20	30	530	0	100	0							
11. Information on transfers, promotions online – phase I				320	23	38	14	206	20	48	274	33	67	0							
12. Transfer information (mutual transfer corner)					19	43	14	125	20	21	166	0	100	0							
13. Registration for foreign employment				424	25	34	16	199	18	27	244	42	43	0							
14. Complains and Grievance handling				960	14	36	36	190	14	140	344	0	0	100							
15. Facilitate in job application processing and payments					40	0	0	60	2	5	67	60	0	0							
16. Accept payments for insurance by insurance agencies					31	29	14	45	5	55	105	60	0	0							
17. Product marketing information					0	57	43	60	20	30	110	0	100	0							
18. Receiving Regular Pension Payments				1920	30	50	11	320	72	46	437	50	38	12.5	55	0	7	62	81	14	5
19. Provide Land Registry Information					0	29	86	180	16	30	226	0	0	100							
20. License renewal of Job agencies				480	36	21	43	285	15	15	315	0	50	50							
21. Issuing vehicle information				190	36	36	14	49	20	120	189	60	0	0							
22. Ongoing vehicle registration number				120	23	29	14	36	33	15	84	50	50	0							
23. Online Vehicle Number Reservation					40	0	0	45	1	35	81	50	0	0							
24. Number Plate Printing Status Tracking					27	29	0	7	25	20	52	60	0	0							
25. Get EPF accounts detail				460	14	43	43	190	140	100	430	0	0	100							
26. EPF Claim Approval Tracking				960	40	48	7	600	20	15	635	50	50	0							
27. Name approval process				180	38	19	29	76	26	37	139	33	0	33.3							
28. Business registration				300	32	43	11	123	19	26	169	25	50	25	36	3	9	48	64	30	5
29. Issuance of certified copies				82	48	26	24	40	18	26	83	33	17	50							
30. Renewing Gun License				100	22	61	9	35	12	33	80	18	73	9.1							
31. Issuing of permits granted under the explosives act.				120	29	57	0	3	25	43	71	0	60	0							
32. Registration of Private Security Agencies				120	0	57	43	60	20	10	90	0	50	50							

Public Service	2010							2011							2013						
	Time taken to obtain public services				Level of satisfaction			Time taken to obtain public services				Level of satisfaction			Time taken to obtain public services				Level of satisfaction		
	Travelling time	Waiting time in the que	Processing time	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied	Travelling time (Min.)	Waiting time in the queue (Min.)	Processing time (Min.)	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied	Travelling time (Min.)	Waiting time in the queue (Min.)	Processing time (Min.)	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied
33. Recommendation of Residence Visa				46	43	43	0	15	20	13	48	60	0	0							
34. Issuing of Timber Permits					10	52	38	38	19	23	79	0	67	33.3					71	29	0
35. Payment of Exam fees															30	0	10	40	100	0	0
36. To obtain a technical Reports															83	3	9	94	79	21	0
37. Counter Signing a certificate															44	6	6	56	51	44	3
38. Renewed of Driving Licence															55	10	20	85	21	71	7
39. EPF withdraward															186	32	18	236	54	46	0
40. ETF withdraward															68	70	8	145	43	50	7
41. Submit EPF documents																			0	71	29
42. Transfer of vehicle ownership															58	27	36	121	25	50	23
43. Registration of vehicles																			0	71	29
44. To obtain a copy of a deed															86	17	10	113	62	29	4
45. Check title of a deed															84	20	25	129	21	39	39
46. Payment of Exam fees																			100	0	0
47. To obtain a technical Reports																			79	21	0
48. Counter Signing a certificate																			51	44	3
49. Renewed of Driving Licence																			21	71	7
50. Housing matter															23	2	7	32	38	62	0
51. EPF withdraward																			54	46	0
52. ETF withdraward																			43	50	7
53. Submit EPF documents															90	21	10	121	0	71	29
54. Transfer of vehicle ownership																			25	50	23
55. Registration of vehicles																			0	71	29
56. To obtain a copy of a deed																			62	29	4
57. Check title of a deed																			21	39	39
58. To obtain housing aids															38	8	13	59	77	23	0
59. Documentation for forgin employment															506	12	6	524	0	82	18
60. Documentation for pensions															175	7	15	197	16	81	3
61. Correction of the pension Number															120	0	5	125	0	100	0
62. Registration for W&OP															30	0	5	35	0	100	0
63. Change of Nomination in W&OP															60	0	10	70	0	100	0
64. Transfer of state land owned															60	0	15	75	14	71	14
65. To obtain an import permit															137	22	22	181	14	73	13
66. To obtain an inspection Report on imported food															67	20	30	117	5	71	19

Public Service	2010							2011							2013						
	Time taken to obtain public services				Level of satisfaction			Time taken to obtain public services				Level of satisfaction			Time taken to obtain public services				Level of satisfaction		
	Travelling time	Waiting time in the que	Processing time	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied	Travelling time (Min.)	Waiting time in the queue (Min.)	Processing time (Min.)	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied	Travelling time (Min.)	Waiting time in the queue (Min.)	Processing time (Min.)	Total time (Min.)	Highly Satisfied	Satisfied	Moderately satisfied
67. Company Registration																			0	71	29
68. To obtain company legal Documents															49	24	27	100	14	64	21
69. Renewal of Company Registration															100	15	15	130	29	71	0
70. Change of Company Names															95	45	25	165	14	79	7
71. Payment of Assessment Tax															67	16	23	106	0	63	37
72. To settle legal Matters															50	30	10	90	0	71	29
73. To obtain tax clearance Certificate															180	10	20	210	21	79	0
74. To obtain a PIN															210	23	25	258	17	71	11
75. To obtain information																			29	71	0
76. To obtain a VAT registration															45	30	20	95	57	43	0
77. To obtain an income certificate															98	5	6	108	75	14	11
78. To obatin a resident certificate															38	18	3	58	0	100	0
79. Payment of utilize bills															40	5	5	50	57	43	0
80. To obtain business permits															41	8	13	62	12	60	29
81. To obtain a extract of a deed															56	6	9	72	61	32	7
82. Registration of a deed															67	51	17	135	43	7	50
83. Purchase fertilizer															68	11	40	119	46	40	11
84. To obtain cultivation instructions															130	5	28	163	0	90	10
85. To settle a land dispute															12	20	37	68	86	14	0
86. To buy planting seeds															150	0	13	163	0	100	0
87. Signing Employment Contract															533	18	11	562	0	89	11
Overall Average				**371**	**25**	**36**	**16**	**115**	**26**	**33**	**175**	**28**	**40**	**16**	**94**	**15**	**15**	**124**	**33**	**55**	**10**

Note 1 : 75% and aboove - Highly satisfied
Note 2 : 50- 75% - Satisfied
Note 3 : 25-50% - Moderately satisfied

Appendix 8: Organizations compliance with e-Government Policy

	Foreign Em Bureau	Department of Motor Trafic	Department of Pensions	Registrar of Companies	Department of Import and Export Control	Department of Inland Revenue	Department of Labour	Land Registry	Department of Agrarian	Colombo Municipal Council	Gampola Urban Council	Vavuniya UC	Badulla Pradeshiya Shabha	Colombo Divisional Secretaries	Kesbewa DVS	Akurana DVS	Kundasale DVS	Balapitiya DVS	Habaraduwa DVS	Jaffna Town DVS	Thenamarachchi DVS	Trincomalee Town DVS	Thambala gamuwa DVS	Mallawapitiya DVS	Wariyapola DVS	Hettipola DVS	Mihinthale DVS	Kekirawa DVS	Rajanganaya DVS	Welimada DVS	Ella	Kegalle	Galgamuwa	**Average**
15. Government organizations with ICT units.	100 %	100 %	100 %	100 %	100 %	100 %	100 %			100 %				100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
16. Appointment of CIOs	100 %	100 %	100 %	100 %	100 %	100 %	100 %			100 %				100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
17. ICT annual plans for each organization	100 %	100 %	100 %	100 %	100 %	100 %	100 %			100 %				100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
18. Allocation of funds for ICT	100%	100%	80%	80%	60%	100%	60%			60%				80%	60%	60%	60%	50%	80%	60%	80%	40%	80%	80%	80%	80%	80%	60%	40%	40%	40%	40%	40%	67%
19. All government organization use trilingual websites under gov.lk	100%	100%	100%	30%	30[iii]%	60%	100%			0%[iv]				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	90%
20. Standard of web sites according to the "Web Standards for Government"	100%	100%	80%	60%	80%	80%	80%			60%				80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
21. Use of Sinhala and Tamil unicodes and use of local languages in ICT activities.	100%	100%	100%	0%	0%	50%	100%			0%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%

	Foreign Em Bureau	Department of Motor Trafic	Department of Pensions	Registrar of Companies	Department of Import and Export Control	Department of Inland Revenue	Department of Labour	Land Registry	Department of Agrarian [illegible]	Colombo Municipal Council	Gampola Urban Council	Vavuniya UC	Badulla Pradeshiya Shabha	Colombo Divisional Secretaries	Kesbewa DVS	Akurana DVS	Kundasale DVS	Balapitiya DVS	Habaraduwa DVS	Jaffna Town DVS	Thenamarachchi DVS	Trincomalee Town DVS	Thambala gamuwa DVS	Mallawapitiya DVS	Wariyapola DVS	Hettipola DVS	Mihinthale DVS	Kekirawa DVS	Rajanganaya DVS	Welimada DVS	Ella	Kegalle	Galgamuwa	**Average**
22. Provide service information to GIC-1919	100%	100%	100%	100%	100%	100%	100%		0%	100%	0%	0%	0%	100[v]%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%
23. All government organization to connect to LGN	100%	100%	100%	100%	100%	100%	100%		0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	84%
24. Government organization to conforms to the latest version of the Interoperability Framework	100%	100%	100%	100%	100%	100%	100%			100%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100 %
25. Government organizations to use Lanka gate and country portal[vi]	100%	100%	0%	0%	0%	0%	0%			0%				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
26. Use SMS for delivering mobile phone based information[vii].	0%	100%	0%	0%	0%	0%	0%			0%				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%
27. Government organizations to use only licensed	30%	30%	30%	30%	30%	30%	30%			30%				30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%

	Foreign Em Bureau	Department of Motor Trafic	Department of Pensions	Registrar of Companies	Department of Import and Export Control	Department of Inland Revenue	Department of Labour	Land Registry	Department of Agrarian	Colombo Municipal Council	Gampola Urban Council	Vavuniya UC	Badulla Pradeshiya Shabha	Colombo Divisional Secretaries	Kesbewa DVS	Akurana DVS	Kundasale DVS	Balapitiya DVS	Habaraduwa DVS	Jaffna Town DVS	Thenamarachchi DVS	Trincomalee Town DVS	Thambala gamuwa DVS	Mallawapitiya DVS	Wariyapola DVS	Hettipola DVS	Mihinthale DVS	Kekirawa DVS	Rajanganaya DVS	Welimada DVS	Ella	Kegalle	Galgamuwa	**Average**
software																																		
28. ICT related training for governmen t officers.	100%	100%	100%	100%	100%	100%	100%	100 %	100 %	100%	100 %	100 %		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100 %
																																	Overall average	**70 %**

[i] Source : Services listed in the Country portal
[ii] Source: Services listed in the ww.gov.lk website
[iii] Only the opening (welcome) page complies with trilingual requirements
[iv] Colombo Municipal Council is not under gov.lk domain
[v] As per information available in GIC website only Colombo DVS is covered (as of 27 Nov 2013)
[vi] Source : Services listed in the Country portal
[vii] Source: Services listed in the ww.gov.lk website