BASELINE STUDY REPORT

CARRYING OUT BASELINE STUDY AND OUTCOME EVALUATION OF THE WORLD BANK SUPPORTED CERC DIGITAL TRANSFORMATION PROJECTS TO CREATE HOME-BASED WORK PLATFORM, IMPLEMENTED BY ICTA

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Submitted By

MG CONSULTANTS

Baseline Study and Outcome Evaluation of the Contingent Emergency Response Components (CERC) Digital Transformation Projects

Implemented by

Information and Communication Technology Agency (ICTA) Sri Lanka

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Prepared by

MG Consultants (Pvt) Ltd

Submitted to

Information and Communication Technology Agency (ICTA)

Sri Lanka

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Abbreviations

Add.	-	Additional
Asst.	-	Assistant
BMD	-	Birth, Marriage and Death
CAPI	-	Computer Aided Paperless Interviews
CERC	-	Contingent Emergency Response Component
DG	-	Director General
DIG	-	Deputy Inspector General
DIO	-	Digital Information Officer
Dist	-	District
DS	-	Divisional Secretariat
FGDs	-	Focus Group Discussions
GoSL	-	Government of Sri Lanka
Govt.	-	Government
GovTech	-	Government Technology
HA	-	High Availability
HOD	-	Head of Division / Department
IaaS	-	Infrastructure as a Service
ICT	-	Information and Communication Technology
ICTA	-	Information and Communication Technology Agency
ios	-	iPhone Operating System
IT	-	Information Technology
KIIs	-	Key Informant Interviews
LFA	-	Logical Framework Analysis
LGC	-	Lanka Government Cloud
LKR	-	Sri Lanka Rupees
M&E	-	Monitoring and Evaluation
MGC	-	MG Consultants (Pvt.) Limited
NPD	-	National Planning Department
OIC	-	Officer in Charge
PaaS	-	Platform as a Service
PLC	-	Public Limited Company
SPSS	-	Statistical Package for Social Sciences
TOC	-	Theory of Change
ToR	-	Terms of Reference
UN	-	United Nations
VidCon.	-	Video Conference
WB	-	World Bank
WFH	-	Work-From-Home
WHO	-	World Health Organization

1. EXECUTIVE SUMMARY

Based on the World Health Organizations global pandemic declaration and widespread impacts of COVID-19, the Government of Sri Lanka (GoSL) received the World Bank's assistance to activate the Contingent Emergency Response Components (CERC) in the country. As a component of this initiative, Information and Communication Technology Agency of Sri Lanka (ICTA) in consultation with the Ministry of Technology and Department of National Planning, initiated four digital transformation projects, with aim of developing effective home-based work platform for the government of Sri Lanka (GoSL) to facilitate uninterrupted service delivery to citizens during lockdown periods. The four activities implemented under CERC funding. include;

- Government Video Conferencing facility for 100 key government organizations
- Government-wide email and collaboration solutions
- Government Digital Platform; Form.gov.lk- submission of government forms electronically
- Expansion of Lanka Government Cloud and establishment of disaster recovery site

Through a competitive bidding process, ICTA has recruited MG Consultants (Pvt) Ltd to provide consulting services for design the M&E framework and implementing field-based Monitoring and Evaluation activities and support the ICTA internal M&E Unit. The main activities of the consultancy are the implementation of the baseline and outcome assessments and periodic M&E activities. The baseline assessment study will provide the foundation for the final outcome evaluation and will help to set targets/ benchmarks and establish relevant indicators for project monitoring. This report covers the results of the country-wide baseline assessment carried out with all the relevant categories of government organizations such as Ministries, Departments, and Statutory Bodies, District Secretariats, Divisional Secretariats and Local governments. As widely accepted, Baseline assessment was carried out as a situational analysis to provide the accurate estimates of pre-operational conditions that prevail in these implementing organizations.

1.1. Methodology

The study methodology included the initial comprehensive review of the all available literature, such as project documents, proposals, plans, log frames, and other relevant secondary data relevant to the four initiatives. To understand the objectives of these project and expected outcomes, the consultants had several rounds of one-on-one discussions with ICTA Digital Transformation team, Project Managers and Director M&E. These meetings were extremely beneficial to the consultants to get better perspectives of the proposed initiatives and establish good working relationships with the relevant officers. Once the consultants were clear about the objectives and activities of the project components, indicators were established to be used during implementation to show changes or progress of the projects towards achieving desired outcomes.

The primary data required for the assessment were collected from a representative sample of government organizations. Though the findings were not meant to be generalized, a stratified sampling technique was adopted to make the finding valid reliable and acceptable. A comprehensive sample frame was prepared to include all the categories of government organizations such as Ministries, Departments, and Statutory Bodies, District Secretariats, Divisional Secretariats and Local governments. To facilitate the comprehensive data collection from large number of government organizations and various types of stakeholders, KoBo

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Toolbox (https://www.kobotoolbox.org/) software was used as the computer-aided paperless interview (CAPI) tool for the questionnaire survey.

The study used mixed method approach by collecting quantitative and qualitative data from multiple sources and multiple methods to improve the validity and reliability of findings. This eliminates the possible biases and inaccuracies that can arise from relying on data from a single source or method. The data collection tools and guidelines were prepared based on the M&E Matrices and field staff were trained for the four project components. These included the development of key Informant Interview Protocols, and Structured Questionnaire to collect organizational data, and Semi Structured questionnaires to gather information from Executives (Users) and Citizens. Also, separate semi structure questionnaires were developed to gather information from the ICT Administrator of the organization. Though, Focus Group Interviews were planned, only limited number of FGDs were held because of the reluctance of the organizations due to prevailing pandemic situation. Also making observations were limited due to restrictions in place by the organization to move around the offices. Few virtual meetings were held when the organizations had imposed severe restrictions on outsiders visiting the organizations. Despite severe constraints and limitations, the field staff had encountered due to the prevailing pandemic situation, all the field assignments were successfully completed. All the completed questionnaires were checked for completeness, accuracy and validity before entering into the data base and analyzing using SPSS (Statistical Package for Social Sciences).

1.2. Summary of Finding of the Study

1.2.1. Government Video Conferencing Facility

The Government Video Conferencing facility has focused on providing 100 state-of-the art video conference rooms and a dedicated platform to facilitate inter-organization communication with in the government. The baseline assessment generated a wealth of information and data which were subjected to detailed analysis focusing on establishing key baseline indicators and deriving accurate pre-operational values, which can be used to monitor the projects' progress during implementation and assess the actual project outcomes once the project outputs are delivered completely.

Study findings indicated that over 90% of the organization heads had accepted that organizations incur large amount of money on travelling and wasted valuable working time on the road. Also, around 93% of them agreed that if virtual meetings could be held effectively these costs and time could be saved and used for more productive purposes to serve the citizens. Similarly, 90% of them agreed that Video communications are extremely useful during lockdowns when government officers were expected to provide uninterrupted citizen services by working from home. However, only 55% of the surveyed heads agreed that Video communications can lead to faster decision making and improved citizens' services. They had explained that actual decision-making process is a complex process and involves analyzing different aspects. As such, decisions cannot be taken immediately over a meeting. It was also noted that almost 90% of the respondents had experienced video conferencing during lockdowns when performing their official duties.

They were extremely supportive of the ICTA's Government-wide Video Conferencing initiative but highlighted some additional requirements to support the effective use of the facility. They emphasized the need of an effective help desk support system (91%), and development of government policy and guidelines on the use of Video Conferencing facility (88%) in the state sector. Since the IT skills in some organizations

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are poor they expect proper capacity building (84%) programmes to train the staff before commencing its operations. Some officers (84%) also appreciated if change management programmes are conducted to change the attitudes of the officers, both users and non-users helping them to adapt to the change.

The baseline assessment study found that on average the heads of surveyed organizations or the senior officers had travelled seven times to attend physical meetings held in another office. However, on average, a District Secretary had attended 11 and a Divisional Secretary had attended 13 physical meetings held in another office per month. On the other hand, overall an organization on average had also participated in 8 virtual meetings per month held with other officers. Most number of virtual meetings had been attended by district Secretaries.

Also, on average an organization has incurred Rs. 18,480 per month, while a District Secretariat has incurred Rs. 73,920 per month.

1.2.2. Government-wide Email and Collaboration Solutions

Government-wide email and collaboration solutions initiative focuses on providing a cloud based single authorized government email service to government officers (initially to 100,000 users) for their official communication purposes with the objectives of increasing the efficiency, effectiveness and productivity of G2G, G2C and G2B communication processes. It also aims to reduce the enormous costs the government spend on stationery and producing paper-based communications and maintaining the archives. The baseline assessment study generated a wealth of information and data which were subjected to detailed analysis focusing on establishing key baseline indicators and deriving accurate pre-operational values, which can be used to monitor the projects' progress during implementation and assess the actual project outcomes once the project outputs are delivered to relevant target groups.

The organization heads unanimously agreed that present paper-based communications used by the government organizations are costly but traditionally, citizens are accustomed to communicate with papers and expect responses to come in paper- based form with the signature of the official and printed on an official letterhead of the organization. Which they accept as a legal validity document

 They also unanimously agreed, that by using emails Government could definitely reduce high costs involved in printing organization letter heads, printing letters, maintaining mailing registers and at times costs of posting or hand-delivering urgent letters. Further, could save the cost of maintaining old documents for future reference. With the implementation of Right to Information Act, Organization are storing past documents up to 12 years.

The study found out that of the two main types of communication used, on average, majority 54% of the communications done in paper form while only 36% are in electronic form using emails. The use paper-based communications are highest among the Provincial Councils (68%), Local Authorities (65%), Divisional Secretaries (65%), District Secretariats (61%) and Grama Niladharies (56%) while email communications were high among Statuary Bodies (63%).

The study estimated the average annual costs incurred by a government organization. Based on actual costs incurred in 2019, average government organization had spent around Rs. 32.32 million (per year) with the minimum cost being Rs. 486,651 and the maximum recorded as Rs. 404 million. This shows the wide

fluctuation of printing cost which depends on number of services it provides. High costs are incurred by the Miniseries (Average R. 140 million) while low costs are recorded by Provincial Councils (Rs. 540,105).

It was observed that 69% of the surveyed organizations maintained dedicated record rooms with a dedicated staff member to store used paper-based documents. The survey attempted to work out an average annual cost involved in maintaining a dedicated Record room. As estimated the average annual cost of maintain a dedicated record room was Rs. 80, 835 in 2019 and these costs varied from Rs. 9,610 (minimum) to Rs. 268,340.

The average monthly communication pattern of the surveyed organization are as follows:

Table 1. 1: Number of letters and emails received/sent per month per organization

Type of correspondence	Received per month (No.)			Dispatched per month (No.)		
	Average	Min	Max	Average	Min	Max
Letters	2,884	150	14,000	1,755	0	4,500
Emails	2,220	2	18,055	1,261	0	10,835

The highest number paper-based communication per month has been received by District Secretariats (6333) while the highest number printed letters sent (2833) had also been carried out by them.

On average the surveyed organizations had received 2,220 emails and sent out 1,261 during a month. The highest average numbers of emails had been received by District Secretariats (6,967) while lowest average numbers had been received by Divisional Secretariats (217). Similarly, the highest average numbers of emails had been sent by District Secretariats (4,028) and lowest average numbers had been received by Divisional Secretariats (129).

The survey also found that 80% of the government organizations maintain an official email address as the 'common email' addresses in the format 'info@organization.gov.lk'   for the public to communicate purposes as stipulated in e-Government policy of 2010. However, only 10% of the officers use gov.lk domain emails for official communication on day-to-day basis and majority 71% use other private emails for official communication purposes.

The officers using the emails for official communication purposes were fully aware that emails provide speedy, costless, convenient mode of communications (99%) and hardly needs any physical storage space for storing archives. They also acknowledged advantage and convenience of using emails when they had to work from home during lockdowns.

They also accepted that a dedicated single government email system for their official emails communications it provides more recognition and public acceptance for their emails. Majority 70% were extremely confident that they could successfully adopted the new initiatives without any difficulty. However, of the balance 14% thought it was 'too early' to comment without knowing fully details of the email solution to be provided. Only 13% expressed lack of confidence of the proposed system.

Thought electronic Transactions Act No. 10 is considered as the key e-enabling legal infrastructure which provides for legal recognition and facilitates the use of email and electronic communications for daily work

and also provides for the storage of electronic records, around 26% of the respondents acknowledged that their knowledge of this Act is limited.

Similarly, around 74% mentioned that they understand the significance of using eSignature to establish proper authenticity, validity and public acceptability of government emails and electronic documents.

The study also found that nearly 19% of the organizations take 100% printouts of the emails they used for communication to maintain paper-based files while another 13% takes printouts of 75% of the emails and another 16% takes the printouts of around 50% of the email they communications. In short, overall around 48% of the organizations at least maintain 50% of their email communications in paper from for future reference.

When inquired about their perceptions and attitudes towards the adoptions of proposed Government email collaboration solutions they indicated positive attitudes considering the anticipated benefits, such as, convenience of attending to day-to-day work, speed and efficiency of communication, saving of time in sending and receiving communications, minimizing the use and handling of printed documents.

It was also found that only 29% of the surveyed organizations have a policy in place regarding the use of emails for official communication purposes. Of these, 60% of the organizations had adopted the eGovernment policy formulated in 2010.

The study also consulted the views of the citizens regarding the use of emails for official government communications. Of the citizens surveyed, only 17% acknowledged that they have communicated with the government organizations using emails.

The IT Administrators interviewed expressed that even though the official email addresses and other related facilities are provided from the project there may be other bottlenecks that could impede the adoption of new email solution by the users in government organizations. Some concerns expressed by the are:

1. Negative attitude of some officials who would not have the opportunity to use an official government email address.
2. Lack of computer skills, required literacy or equipment to use government email solution for official communication.
3. Lack of trust and fear of hacking the email account or losing of vital documents.
4. Limited capacity/skills to work with computers,
5. Difficulty in managing digital archives securely, compared to paper-based documents.
6. Breakdown of the email system at times- availability issues.
7. Receipt of unwanted emails (spams, business promotions).

1.2.3. Expansion of LGC 2.0 and Establishment of a Disaster Recovery Site

The baseline study was undertaken to assess the present situation of the operations of LGC 2.0 and establish relevant baseline indicator values for monitoring the progress and measure the outcomes of the implemented initiatives later on. For this purpose, two types of tools were used. Key informant interviews with the Head of the organization and semi-structured questionnaire survey with the chief IT administrator of the organization.

The study found out that around 266 government organizations are using LGC 2.0 to host their data and various applications. Some organizations have hosted multiple application in LGC 2.0.

It was found that of the organization surveyed, almost 26% had outsourced the management of their Cloud based applications to a third-party IT Company because they do not have suitably qualified staff in-house. As such, they could not provide any information about the present status or the quality of LGC2.0 services.

Of the balance, it was found that some organizations have hosted multiple applications in LGC 2.0 while most of them had only the organization website hosted in LGC. Regarding the level of satisfaction, almost 40% of the organizations expressed their dissatisfaction with the quality of LGC services available at present while another 30% expressed their satisfaction with the current LGC services. Balance organizations were unable to express an opinion as their LGC based applications are handled by a third-party organization.

It was also found that some organizations, while hosting some applications in LGC 2.0, are also maintaining individual data centers or server rooms in their own premises. One reason was that these facilities were used before they transferred their applications and data centers to LGC, but continue to maintain their owner servers as well. Some others store sensitive and valuable data in their own servers as LGC 2.0 does not have a disaster recovery mechanism at present.

The organizations expect a high availability or the ability of the system to provide continuous uptime. However, as expressed by the surveyed organization, 69% complained about breakdowns of service in LGC causing severe operational difficulties to the host organizations providing critical citizen services. As a result, some organizations have removed their critical applications to other commercial clouds.

Data security is an important aspect when it comes to handling sensitive and confidential information of national interest. As found out during the baseline assessment, majority 70% has expressed their satisfaction regarding data security since LGC is a dedicated government control Cloud infrastructure. However, few organizations (13%) have expressed their concerns based on the recent incidents related to information/data loss from an organization that has hosted data in LGC. Also, another organization mentioned about an attempted hacking incident to application hosted in LGC, which is being currently investigated by the Police.

As mentioned earlier, many organizations do not have cloud expertise in-house and depend on ICTA to provide assistance when they encounter a problem with their applications hosted in LGC 2.0. It was found during study that majority of the organizations (70%) were not satisfied with the complaint handling mechanism available at LGC. They expect a proper ticketing system in place to record the complaint and solve it expeditiously and submit an investigation report to prevent future incidences. They also expect a dedicated person and a hotline to make their complaints.

When queried about the cost saving to the organization because of free hosting of their application in LGC, majority acknowledged the savings to the organization because of hosting their applications in LGC 2.0 but many were unable to value it in monitory terms. Few organizations were able to value of service offered by LGC, going up to Rs. 25 million. However, the value of a web hosting was estimated around Rs. 20,000 per year.

At least 30% of the surveyed organizations acknowledged that apart from hosting application in LGC 2.0 they have host some applications in private clouds due to various reasons such breakdowns, non-availability of a backup in LGC 2.0. One organization has hosted applications in a private cloud since they get this facility

free-of-charge. One organization explained that they have a mandatory requirement to host their web application in the world head office where 24X7 availably is required.

It was also observed that, often when organizations hire private IT companies to develop their websites and other software and expect them to maintain them, they usually host the applications in clouds selected by them without coming to LGC.

The study also found that nearly 50% of the surveyed organizations are planning to host more applications in LGC 2.0 in near the near future.

1.2.4. Forms.gov.lk - Submission of Government Forms Electronically

Government organizations throughout the country handle millions of paper-based application forms when providing services to citizens and businesses. Government spend large sums of money to print these forms and these organizations are further burdened with storing and safekeeping the used forms even up to 12 years for future reference. When applications are received in paper-based form, multiple data entry efforts are required at different points of processing the application leading not only duplication of work, but also entry errors which may be costly to correct. During COVID pandemic, handling of paper-based documents and citizen visiting the government offices to submit these forms were found to be risky, health wise and causing severe inconveniences to both the public and the staff of government organizations.

Objective of this Digital Forms Solution is to facilitate the submission of government forms electronically and collect all the required data from the source to provide the service digitally and accurately and create a common platform to submit them digitally for government staff to process them and store them digitally. The pilot project is expected to commence in 10 Divisional Secretariats initially and subsequently to roll out to other government offices with necessary amendments. Hence, baseline study was conducted focusing Divisional secretariats in the country to collect relevant information to establish suitable baseline indicators and values against which changes could be assessed or comparisons made at regular intervals during implementation and measure outcomes at the end. The key findings of the baseline assessment are given below.

Divisional Secretariat provides the basic services to the public living within its administrative area. It found that the Secretariats in the country perform almost identical functions, following the same identical methodologies, using similar application forms when delivering these services. Only few area-specific services were observed in some Divisional Secretariats depending on the local needs of the citizens and businesses. During the study, it was found that there are around 21 common most sought-after services provided by Divisional Secretariats. These are given in Table 7.2. Except for the most sought-after service, the issuance of annual vehicles revenue license, almost all the other common services are provided on submission of a specific application form provided at the Divisional Secretariat office or downloaded from the organization website if it is available.

It was noted that most of the Divisional Secretariats provide commonly used application forms, especially services related to civil registrations, are available in their websites for the public to download and fill them up when they come to get the service. Though this is convenient, availability was not uniform and varies from no downloadable forms to up to 24 applications. In some cases, although link was shown in the web downloadable forms were not available. It was also found that some of the downloadable forms available

in the website are outdated. When citizens were interviewed, it was found that almost 100 % of them had obtained the required application form from the Divisional Secretariat reception.

The study also observed that there are several other prerequisites such as attaching supporting documents, obtaining prior certifications/approval from other government officers, and making stipulated payments before submitting the application form to get the required service.

Though 75% of them said they did not incur any financial losses, balance citizens claimed they had incurred an average estimated loss of Rs. 1355 when they visited the Secretariat to handover the applications. These costs included travelling costs and loss of employment revenue.

It was also found that 60% the citizens expected to get the services delivered on the same day while another 10% said they have to come on another day. Balance 30% were unsure when they will get their services attended.

1.3. Summary of Conclusions

From the above findings the followings conclusions have been derived.

1.3.1. Government Video Conferencing Facility

1. Present practice of holding physical meeting are found to be costly and wasteful considering the valuable time of the senior administrators lost while travelling to these meetings held outside their offices.
2. There is a general consensus among the organization heads that if the meeting could be held virtually, using the most advanced technology, they could save the travelling time and associated travelling costs involved in attending outside meetings.
3. However, not all the physical meetings could be replaced by virtual meetings as some crucial meetings such as tender openings, tender discussions need to be held physically.
4. When heads of the organizations hold physical meetings in their offices with the participation of officers from others offices, those participating organizations too incur financial losses on travelling and also their valuable time is lost during travelling. Apart from that hosting office too incur expenses on providing refreshments, documents, and spend time to arrange meeting rooms etc. These extra costs and wasted time could be saved if these meeting could be hosted virtually where participants join from their own offices.
5. If quality and convenient video conferencing facilities are available, they could meet online more frequently to discuss and resolve issues thus reducing delays in decision making.
6. The saved time and money on attending physical meetings could be used more productively to provide speedy services to the public.
7. This facility was found to be extensively used during the pandemic to provide uninterrupted citizens' services. Hence, most of them have the experience of holding and participating in video conferences.
8. It was also found that with the technology in place, office management processes can be better organized to provide effective and efficient services to the public.
9. If dedicated, user-friendly and comfortable video conference rooms are established with correct technologies to give uninterrupted, clear audio and video receptions, that will improve the productivity, convenience and satisfaction of the government officials.

10. An efficient help desk support system and effective training sessions to IT staff to handle the platform are important and essential prerequisites for successful implementation of the project.

11. Well-designed policy framework is required to promote efficient use of these facilities in the government organizations to achieve the desired objectives and outcomes of the project.

1.3.2. Government-wide Email and Collaboration Solutions

1. Present practice of using paper-based communication methods are costly and cumbersome to handle and need to be replaced with a cost effective, secured and convenient system using available digital technologies. Not only communication solutions but convenient solution to the store the electronic records is also important to replace the current practice of maintaining of paper files. At present close to 50% of the organizations get hard copies of these emails and the attachments to maintain paper-based files of correspondences.

2. Although government organizations are using emails to communicate with other government organizations (G2G), majority of the communications in the organizations are paper-based, especially when they are G2C and G2B.

3. Most of the staff still use various other email popular systems for official communication purposes. This is not a healthy situation since the security of the sensitive government data and information are at a risk.

4. These is a general consensus on the urgent need of a single, secure and dedicated government email and collaboration solution for the official use of the government officials.

5. Though the e-Government Policy was formulated in 2010, clearly describing required formalities for the use of emails in the government organizations, this is not implemented fully by all the government organization.

6. The IT skills and knowledge in most government organizations are not adequate to achieve a successful digital transformation in the government sector.

7. Most government organizations do not have Chief Innovation Officers to provide the Leadership within the organization and some do not have a proper IT administrator to provide much needed technical support to the organization staff in case of an operational issue.

8. The citizens are still used to the old systems of depending on printed letters on official letter heads with the signatures and rubber stamps of the organization heads. They are skeptical about accepting the authenticity of an email and unaware of the Electronic transactions Act or legal validity of an email.

9. Most of the staff in government organization do not have a clear understanding of the provisions of Electronic Transactions Act No. 19 and the provisions in the Act to use e-signature in electronic documents.

10. Some citizens, especially the younger ones are more inclined to use emails to communicate with the government organization since they can easily access them from their smart phones.

11. Emails have helped G2G communication for some government officers to perform their urgent tasks from home during lockdown period.

1.3.3. Expansion of LGC 2.0 and Establishment of a Disaster Recovery Site

1. Majority of the government organizations accept that LGC 2.0 provide a cost-effective cloud services to the organization.
2. The knowledge of the LGC 2.0 operations is minimal in some organizations, even among the IT staff since all cloud-based applications in these organizations are handled by an outsourced third-party company.
3. The general opinion about the quality of services offered by LGC 2.0 is unsatisfactory because of inefficient help desk and customer care services available at present. As a result, some organizations have removed their applications and hosted them in other private clouds.
4. Some Organizations do not want to host their critical applications In LGC 2.0 because it has no disaster recovery site.
5. Most of the organizations have plans to host other applications too in future.

1.3.4. Forms.gov.lk - Submission of Government Forms Electronically

1. Traditionally public visit the Secretariat to physically handover the application form to get the required service.
2. Divisional Secretariats in the country more or less provide identical public services using standard application forms.
3. Divisional Secretariats annually spend considerable amount of public money on printing forms and storing and maintaining used paper-based applications and documents for future reference.
4. Some important application forms are available in the organization website for the public to download without visiting the Secretariat physically to obtain them from the counter.
5. Most of the paper-based application forms are handled and processed manually by the staff, sometimes going through several officers.
6. Sometime public has to visit several times to get the service. Eg. First to get the form again to submit the application and finally to get the response letter.
7. Digital form submission is an innovative, challenging, and transformative initiative that can have many benefits to the government, citizen and the economy at large.
8. This initiative needs an in-depth study to understand the social environment and assess the readiness of the citizen and staff to undertake such a challenging transformation.
9. The Divisional Secretaries and the staff do not have a clear understanding as to how this project will work and hence need to create awareness before undertaking the project.
10. Similarly, Citizens and businesses have to be effectively educated to get their support to implement the system

1.4. Recommendations

The following recommendations are being made based on the knowledge gained from the baseline assessment and the respective conclusions derived from the findings.

1.4.1. Government Video Conferencing Facility

1. Develop a high-quality Video conference platform to suit the user requirements.
2. Create an efficient help desk support and effective training programme for IT staff to handle the platform without any breakdowns or quality drops.
3. Develop a policy framework to promote efficient use of these facilities to provide better service to the public.

1.4.2. Government-wide Email and Collaboration Solutions

1. Develop a secure, user-friendly, government-wide email and collaboration solution to meet all current and future needs of the government.
2. Develop a policy to govern the use of email in the government organizations.
3. Provide adequate training to users on security aspects and use of collaboration tools.
4. Establish an effective help desk support system to resolve user issues.

1.4.3. Expansion of LGC 2.0 and Establishment of a Disaster Recovery Site

1. LGC should establish industry standard efficient, user-friendly cloud service eliminating current shortcomings to meet the increasing future demands of government organizations.
2. Establish an efficient, effective and professional support and maintenance team and proper ticketing mechanism to monitor the quality of complaint-handling mechanism.
3. Educate the organizational heads and IT staff and establish good rapport between ICTA and the government organizations

1.4.4. Forms.gov.lk - Submission of Government Forms Electronically

1. Undertake a proper feasibility study in collaboration with all stakeholders to understand how systems work at present and how to transform them into digital systems.
2. Undertake a trial run in few locations and train the staff and create awareness among the public to accept the change.
3. Establish an effective help desk support to resolve any emerging operational problems.
4. Develop a monitoring system to identify bottlenecks and ensure achieving expected outcomes.

2. INTRODUCTION

2.1. Project Description

2.1.1. Background of Contingent Emergency Response Components (CERC) of the World Bank

In mid-2020, based on the request made by the Government the World bank established a pool arrangement amounting Rs 10,481 million (56 Mn USD) under the Ministry of Finance to finance multi sectorial needs arisen due to COVID 19 pandemic situation in relation to Agriculture, Education, ICT, Disaster Management and transport.

The objective of the CERC pool is to support prioritized COVID-19 recovery activities. CERCs have been activated by reallocating funds from four existing world bank supported 4 investment projects (IPFs) to support a single Emergency Action Plan (EAP) with priority activities in the above five sectors.

With this allocation, Department of national planning (NPD) and World Bank approved Rs Mn 1,118 funding for developing a platform to facilitate Work-from-Home (WFH) for the government officers to provide uninterrupted services to the citizens. Based on the funding allocated to ICTA under the CERC emergency funding ICTA planned to produce the following key outputs;

1. Established Video Conferencing Facility for 100 Government Organizations
2. Developed an Email Solution for the Government
3. Platform for Submitting and Processing Government Forms - forms.gov.lk
4. Established the Government Cloud 2nd Zone

2.1.2. Projects Descriptions Based on the Understanding of the Consultant

2.1.2.1. Government Video Conferencing Facility

Ministers, Secretaries, and other key government officials are frequently involved in the strategic decision-making processes of the government, which require frequent travel between government institutions to attend strategic meetings and conferences. This involves, not only the high expenditure on traveling but also the loss of valuable time on the road which otherwise could be utilized for other productive purposes.
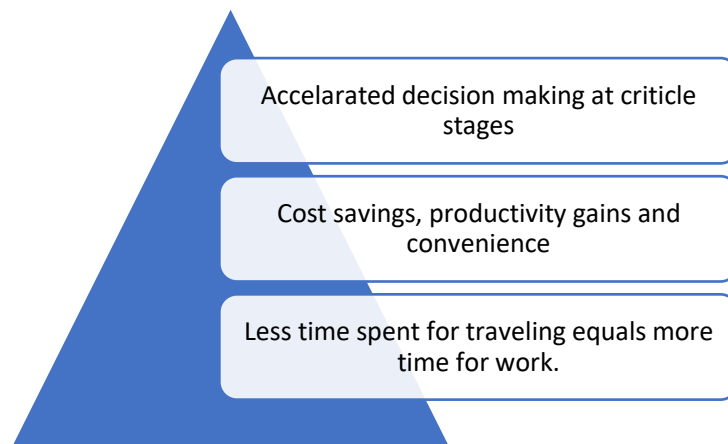
Figure 2. 1: Expected Outcomes of Video Conferencing Facility

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It will help these government organizations to minimize the traveling cost, save time and improve the organization's productivity by allowing them to focus on serving citizens more effectively.

Under the CERC funding, 100 government organizations will be provided with video conference facilities as per their requirements. Among the selected 100 key government organizations, there will be ministries, departments, and other key government institutions.

2.1.2.2. Government-wide Email and Collaboration Solutions

A common Government-wide email system is needed to provide government officials an effective and secure communication platform, thereby enhancing the collaboration and communication between government agencies, citizens and businesses.

Though government is currently using an email system with "gov.lk", it is not implemented efficiently and effectively within all the government organizations and still most of them are using paper-based methods for most of their communication needs within and outside the organizations. However, according to the government policy, it is necessary for the government employees to have official email addresses with the objective of reducing inefficiencies due to delays in communications between government institutions, businesses and citizens.

Considering the above, ICTA planned to deploy a cross government email and collaboration solution by using the CERC funding. ICTA proposes to implement the single authorized email solution as a whole package of collaborative services including electronic mails, document sharing, chat option, video conferencing, etc. All the government institutions will be using single authorized government email system to communicate with other GoSL officers efficiently and share documents, etc.

2.1.2.3. Government Digital Forms - Forms.gov.lk - The platform of submission of government forms electronically

Paper-based forms are a main vital tool that had been adopted and widely in use in Sri Lanka, when requesting various services, such as permits, registration, and certificates etc. from the government organizations. During the COVID 19 pandemic, this process was seriously hampered and citizens had to face serious difficulties in submitting applications in paper form. On the other hand, the government offices were also not in a position to process these forms due to the new work arrangements adopted (work-from-home) in government offices. Further, these paper forms are also logistically cumbersome, while publicly available digital forms such as Google Forms, present security risks as sensitive citizen information could be stored on private clouds. This initiative aims to provide an opportunity for citizens to submit their requests electronically in a secure manner when obtaining a government service without visiting the relevant government offices in-person. At the same time the government officials will also be able to efficiently process the requests made by citizens by using the facility provided under this project.

A similar system is being successfully adopted in Singapore, known as form.Gov.sg, which is a form builder tool developed by the GovTech Agency of Singapore. Through form.gov.sg public officers are enabled to create digital government forms in minutes, replacing paper forms. The platform was integrated with government systems, enabling it to support authentication by using SingPass. Form.SG has helped public officers significantly to reduce administrative and operational efforts spent on transcribing physical paper

forms and processing applications received from citizens requesting various government approvals. As of March 2019, 6,804 public officers were using the platform, and 3,488 digital forms has been deployed, and 554,738 citizens had filled up these forms.

2.1.2.4. Expansion of LGC 2.0 and establishment of Disaster Recovery site (Zone 2)

The Lanka Government Cloud 1.0 (LGC 1.0) was implemented in 2011 using technologies that were available at the time to cater to the requirements of a government cloud. After serving the public sector for more than six years, ICTA implemented the second phase known as LGC 2.0, in keeping with industry standards, technologically advanced features and increased capacity, security, compatibility, etc. The LGC 2.0 consists of two main clusters, namely (a) the General cluster (OpenStack based Infrastructure as a Service (IaaS) and Mesosphere based Platform as a Service (PaaS)) and (b) the Big-data cluster. At present 255 key government institutions are using the LGC 2.0 to host their data/applications.

The LGC 2.0 is co-located in a Data Center at Malabe, Sri Lanka, which is operated and maintained by a leading telecommunication service provider, Dialog Axiata PLC. However, currently, the LGC 2.0 operates without any backup or cloud native High Availability (HA) functionalities which are mandatory to such a critical cloud infrastructure. Though the ICTA recognized the importance of having a 2nd zone for backup/disaster recovery and high availability from the inception, it has not been able to implement together with the LGC 2.0 primary zone. This has hindered migration of a considerable number of critical government applications to LGC 2.0, thus hosting them in other commercial clouds by paying millions of rupees as annual subscriptions by these government organizations.

ICTA is planning to establish the 2nd Zone of the Lanka Government Cloud 2.0, under the Contingent Emergency Response Component (CERC) funding to achieve the following objectives.

1. To establish a highly secured reliable cloud infrastructure ensuring High Availability (HA) for all the hosted applications in IaaS and PaaS clusters of the existing LGC 2.0.

2. To meet the demand of government cloud-hosting requirements with high reliability and security, in an efficient and effective manner.

3. To reduce government costs for operating/maintaining individual data centers or server rooms at particular government organizations level and eliminate the subscription costs of hosting in commercial cloud facilities.

4. To migrate all the mission critical applications that are currently hosted in commercial clouds due to LGC 2.0 not having a secondary zone.

2.2. Background of the Baseline Study

2.2.1. Monitoring and Evaluation Process of CERC Projects Implemented by ICTA

In order to measure the progress of achieving intended results of CERC supported intervention ICTA proposed as part of the original project proposal to design and implement a comprehensive M&E approach across the project implementation period. The agreed M&E process includes; through carrying out a baseline study at the beginning, outcome assessment towards the end of the project. In addition, routine monitoring reports are produced in periodical intervals during the implementation of the projects.

- **Develop a M&E framework** including:
    b. detailed sets of project indicators (intermediate and outcome indicators);
    c. description of methodology, instruments to collect data; and
    d. a robust implementation plan for the whole assignment

- **Carryout Project Baseline Study** to establish pre-intervention status of the selected indicators

- **Periodic Monitoring**
  produce monthly monitoring reports based on the site visits to gather monitoring data including user feedback

- **Carry out Outcome Evaluation** after completion of the project outputs (Post-Assessment) to measure:
  - Immediate and intermediate outcomes achieved by the project including information on what worked and what didn't work and why.
  - Measure the extent of success in achieving specific outcomes
  - Identifying lessons learned and reasons for non-achievement of expected results

2.2.2. Background of the Baseline Assessment - Pre and Post Assessment Approach

ICTA, recognized Monitoring and Evaluation (M&E) as a critical tool to ensure ultimate delivery of expected outcomes.

In this regard, the purpose of the assignment is to design and implement an effective monitoring and evaluation framework to measure desired results of the interventions implemented by ICTA under CERC with financial assistance from the World Bank. As the foundation for measuring the outcomes, carrying out a baseline study is an essential element in the M&E framework. In the baseline study the date will be collected against the same set of indicators that can be used for measuring outcomes after the intervention – pre and post assessment.

Furthermore, the Baseline Survey is important to understand the current situation prior to the project interventions. In other words, the status of the related activities prior to the implementation of the project activities. This situation analysis is crucial for progress measurement and evaluations periodically. The

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indicators for each activity will be determined from the current data and information and against them the targets will be set to achieve. In case the set targets are not appropriate they will be revised time to time. The main rationale of the baseline study is to demonstrate the current status of the affairs without project activities.

2.3. Scope of the Baseline Study

The baseline study will focus on establishing the status quo of the organizations in respect of proposed project initiatives so as to provide the critical reference point for assessing the performance during the implementation and assessing the outcome at the end of the project. Baseline information is important for characterizing the prevailing conditions under which the interventions are implemented.

Required data will be collected through a comprehensive field work /study that provide information on current status and the prevailing situation in terms of availability and use of video conferencing facilities, situation of submitting and processing forms for providing public services, email availability and usage and how to manage data /application hosting arrangements.

Quantitative data collected through structured questionnaires conducting face to face interviews and qualitative data collected through Systematic Observations, Focus Group Discussions and key informant interviews. In addition, secondary data also collected through document review.

Representative samples of organizations drawn from the given sample frames of four project components. To facilitate the evaluation process relevant indicators were developed to collect primary quantitative data and information. Additionally, qualitative data were also gathered from observations and interviews and focus group discussion. With the adoption of mix method approach, potential biases are lessened and the quality of the final results of the evaluation in terms of reliability and validity are enhanced significantly. Same process will be adopted f the outcome evaluations planned towards end of the project.

3. STUDY METHODOLOGY

3.1. Desk Review

A comprehensive review of the available literature, documents, project proposals, project plans, log frames, and other relevant documents were carried out by the consultants before starting the development of the study methodology.

The team studied in detail the documents prepared by project managers for the four project components. These includes; the initial proposals submitted to National Planning Department (NPD) of the Ministry of Finance, Logical Framework Analysis (LFAs) for the four projects, Transformation Strategy Reports for project components, etc. These documents clearly provided information regarding the problem the project is trying to address, project of objectives, scope, target beneficiaries and expected results of the projects.

Furthermore, the team has gone through several other literature published by international researchers, development organizations and government organizations. This was to identify similar kinds of interventions and best practices from the international context.

After reviewing available literature, the consultants had discussions with the Director, ICTA M&E Unit, Digital Transformation team members and project staff who are responsible for implementation of the four projects. In addition, a senior governmental officer in the rank of ministerial secretary who has a thorough knowledge in information and communication technology was also used to gather firsthand information of the operations of the government organizations.

The main purpose of these meetings was to get further understanding, updating and clarifications of the project implementation plan and to get an idea of the current situation of the projects. These meetings were extremely beneficial to the consultants to get better perspectives of the proposed initiatives and establish good working relationships with the relevant officers.

3.1.1. Identification of Data Required for the Baseline Study

Data can fall into two types, namely, secondary data or the data already collected for some other purpose and the primary data which will be collected specifically for the study. Depending on the reliability and accuracy of the already gathered data, these will be used together with sufficient cross checks with primary data.

In the inception phase of the assignment, indicators required for data collection were defined based on a consultative and participatory process. process. Both qualitative and quantitative data required for the baseline study were gathered against each indicator defined.

Mixed Method Approach: to ensure the data quality and reliability, combination of methods and various data sources were used to get different perspectives.

For example, secondary data and primary data can be used to complement and confirm data accuracy and precision, or that a mixed method approach of combining both quantitative and qualitative methods will assure stronger reliability of the information gathered. The theory of Triangulation helps to ensure data cross checking and biases and collect only the data.

However, there will not be any overburdening on data collection process since only what is necessary and sufficient to accurately measure the relevant baseline indicator will be determined.

3.2. Theory of Change and M&E Matrices

3.2.1. Theory of Change

Theory of Change (TOC) is the foundation for formulating projects and it would be crucial important to organize the sequence of results of all the CERC funded projects in the TOC.

The liner representation of TOC (results chain) explains how an intervention is expected to lead to the desired end goal, starting from inputs and activities leading up to outputs, outcomes, and ultimate goal.
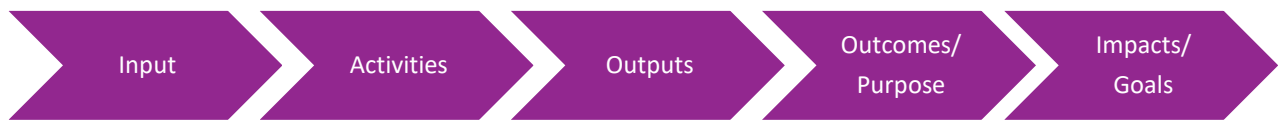
Figure 3. 1: Five steps of the Theory of Change

3.2.2. Selection of Key Performance Indicators for Baseline study and Outcome Evaluation

An indicator is a variable that measures an aspect of a project that is directly related to the project objective. Indicators are assumed as a specific, valid, observable and measurable characteristic that can be used to show changes or progress a project towards achieving a specific outcome.

These are quantitative or qualitative variable that allows the measurement and verification of changes produced by a project intervention relative to what was planned. In the inception phase, the focus was on the formulation of Monitoring and Evaluation Framework required to gather data for both the baseline study and the outcome evaluation.

Indicators fall under three levels of the TOC, which include:

- Inputs – resources, contributions, and investments that go into a project
- Outputs – activities, services, events and products that reach the target population
- Outcomes – Immediate results or changes of the target population

M&E indicators developed for the four projects, based on which data should be collected during the study.

3.2.3. M&E Matrices for the Four Project Components

M&E Matrices were developed separately through a through consultative sessions for four projects components based on the theory of change framework and identified indicators. The originally created M&E Matrices were revised after the key findings from the Piloting the instruments. Final M&E Matrices are available in the Annexure.

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3.3. Sampling Techniques

A well representative, powerful and optimum sample/s were selected separately for the four components of CERC project by the statistician in consultation with the ICTA M&E team, project management teams of ICTA and MGC evaluation team. It was agreed to apply the same samples used in the Baseline Study for Outcome Evaluation Study. In addition to the sample selected from the intervention group a control group was also selected as a counterfactual approximately 35% for Government Video Conferencing Facility and 45% forms.gov.lk of the sub components of the project respectively. The purpose is to compare the baseline indicators of the projects with outcome indicators obtained by organizations that has not been benefited from the project in the outcome evaluation in future. At the initial stage of the study, sampling methodology was shared with ICTA and further improvements have been incorporated suggested by them keeping the overall sampling approach without much change to each component of the project.

3.3.1. Sampling Approaches for each Component of the Project

3.3.1.1. Government Video Conferencing Facility

Seven different types of government organizations have been identified under the sampling frame of this project component for the study as given below. The stratified random sampling technique was used after selecting a random sample from 100 video conferencing units (1st phase) planned to be provided to the government organizations.

The Statutory Bodies which requested the video conference facilities (10 organizations) have been considered to select the sample from the list which is an exclusive criterion for sample selection. There were no Divisional Secretariats, Provincial Councils, and Local Authorities included in the 1st phase of the implementation of the project. However, to make it representative of those categories of government structure in the sample for the baseline study to the population, it was decided to draw a small sample as per their homogeneity of the nature of providing services to citizens irrespective of the geographic location which is an inclusive criterion for sample selection. Considering these facts, the sample size 39 including 14 counterfactuals is proportionately distributed among the different categories of government organizations included in the project as given in the Table 3.1 below.

Table 3. 1: Population and Sample for Government Video Conferencing Solution

	Organization Category							
	Ministry	Department	District Secretariat	Divisional Secretariat	Statutory Bodies	Provincial Councils	Local Authorities	Overall
Population size	29	73	25	332	441	9	341	1250
No of organizations selected	8	11	8	4	2	2	4	39
No. of organizations surveyed	7	11	6	5	2	2	4	37
Sampling Fraction (%)	27.59	15.07	32.00	1.20	0.45	22.22	1.17	3.12
Response Rate (%) (Selected Vs Surveyed)	87.50	100.00	75.00	125.00	100.00	100.00	100.00	94.87

The list of the video conferencing units for each category of the government organizations were selected randomly. Head of Organization (HoD) or his/her representative and divisional heads in each organization were interviewed to get the baseline information about the organization. Number of staff members who are planning to use the video conferencing facility in each government organization were interviewed as the user sample. A sample of beneficiaries from the citizens who had come to get the service from the organizations were interviewed to get their views on the current status of service delivery of these organizations. Key Informants from each type of organizations including Ministry/District/Divisional Secretary, Additional/Deputy District/Deputy Divisional Secretary, Director General, Chief Accountant, Assistant Secretaries, and Directors including IT Officer/Administrator were interviewed to gather in-depth knowledge of the organizations' current status.

It was quite challenging that keeping 95% of the response rate which is remarkable during the Covid-19 pandemic situation of the country to get the meaningful representation of the results.

3.3.1.2. Government-wide Email and Collaborative Solutions

Number of staff members who is expected to receive an official government email accounts in each government organizations were selected and interviewed to gather relevant data to establish the current status of email-based communication in the organizations. Since the government structure is similar to the above project component, same sampling approach which is stratified random sampling technique has been adopted under this project component and number of organizations selected for the study is given below.

Key Informants from each type of organizations such as Ministry/District/Divisional Secretary, Additional/Deputy District/Deputy Divisional Secretary, Director General, Chief Accountant, IT Officer/Administrator, Assistant Secretaries, Directors have been interviewed as KIIs maintaining minimum 02 officers of such designations. It was suggested to take sample of beneficiaries as 05 citizens who came to get the service from the government organization to compare them in future for outcome evaluation. The observation sheets were filled by enumerators who visited to get information for validation of the visit and understand the situation of the organization.

Table 3. 2: Population and Sample for Cross Government Email Solution

	Organization Category								
	Ministry	Department	District Secretariat	Divisional Secretariat	Statutory Bodies	Provincial Councils	Local Authorities	Grama Niladhari	Overall
Population size	29	73	25	332	441	9	341	(14,022)	1250
No of organizations selected for the survey	9	7	4	5	7	2	6	(517)	40
Number of Government Email Account Holders (Users)	103	65	39	59	47	9	45	91	**458**
No. of organizations surveyed	9	7	4	5	7	2	5	91	39
Sampling Fraction (%)	31.0	9.6	16.00	1.5	1.6	22.2	1.8	3.7	3.2
Response Rate (%) (Selected Vs Surveyed)	100.0	100.0	100.0	100.0	100.0	100.0	83.3	88.6	97.5

The overall response rate was 97.5% while response rate for Grama Niladhari category which is specifically mentioned here was 89% to highlight the results for this component of the baseline study.

3.3.1.3. Expansion of Lanka Government Cloud 2.0 and Establishment of Disaster Recovery Site

There were already 183 government organization (255 facilities provided to these government organizations) using the LGC 2.0 in the infrastructure as a service (IaaS) platform. The project is expected to expand the Cloud facilities and also to establish a disaster recovery site. Sample size of 30 was surveyed for the Baseline study of Lanka Government Cloud 2.0 as given in the Table 3.3. Key Informants from each type of organizations such as Ministry/District/Divisional Secretary, Additional/Deputy District/Deputy Divisional Secretary, Director General, Chief Accountant, IT Officer, Assistant Secretaries, and Directors were interviewed for KIIs.

Table 3. 3: Sample Organization Types for LGC 2.0 Expansion

	Organization Category							
	Ministry	Department	District Secretariat	Divisional Secretariat	Statutory Bodies	Provincial Councils	Local Authorities	Overall
Population size	29	73	25	332	441	9	341	1250
No of organizations selected for the survey	4	10	2	2	11	1	1	31
No. of organizations surveyed	4	11	2	2	9	1	1	30
Sampling Fraction (%)	13.79	13.70	8.00	0.60	2.49	11.11	0.29	2.48
Response Rate (%) (Selected Vs Surveyed)	100.00	110.00	100.00	100.00	81.82	100.00	100.00	96.77

It was remarkable that aiming to achieve the response rate as 97% of this component of the baseline study shows that keen interest and enthusiasm of the filed enumerators of the study.

3.3.1.4. Form.gov.lk - Submission of Government Forms Electronically

Table 3. 4: Population and Sample for Form.gov.lk

	Divisional Secretariats
Population size	332
No of organizations selected for the survey	25
No. of organizations surveyed	22
Sampling Fraction (%)	7.53
Response Rate (%) (Selected Vs Surveyed)	88

ICTA project staff proposed to implement this project initially in 10 government organizations, specifically in 10 Divisional Secretariats (DSs) in different geographical locations and roll out to other DS divisions later. Since the homogeneity of services offered to the citizen of the country by DS divisions, one DS division from each District was selected for the baseline study based purposive sampling technique. Full list of the surveyed organizations is given in Table 7. 1. A sample of beneficiaries (citizens) who had come to get the

services from the government organization were interviewed to get their views on the current status of the project. Most importantly, Heads of Divisions of each DS Division or senior officer was interviewed to get the baseline information to establish the current setup of the organization. In addition, IT Officer/Administrator too was interviewed to get the baseline information by using structured questionnaire.

3.3.2. Summary of the Sample Plan

The summary of the sample plan for all four initiatives are shown in the table below.

Table 3. 5: Summary of the Sample Plan

Project name	Implementing organizations	Sample	No. of Potential respondents in the Sample
Government Video Conferencing Solution	100 Video Conferencing Units (Government Organizations)	25 Government Organizations and 14 Government Organizations as counter factual study.	• 39 Organizational Data Collection Tool (structured questionnaire) - Total 39 • Brief Questionnaire with 7 Potential Executive Users - Total 273 (39x7) • 25 Heads of Organization – Key Informant Interviews • Structured Questionnaire with IT Administrator - Total 39 • 5 Citizens visited to the organization - Total 195
Government-wide Email and Collaborative Solution for 100 Government Organizations	100,000 email accounts	517 email holders of 40 Government Organizations	• Brief Questionnaire survey with 517 Officials including 90 Grama Niladharis - Total 517 (current email users and potential future users) • Organizational Data Collection Tool (structured questionnaire) - Total 40 • Structured Questionnaire survey with IT Administrator - Total 40 • Heads of Organization - Key Informant Interviews • 5 Citizens visited to the organization-Total 200 (5x40)
Establishment of Zone-2 for Lanka Government Cloud 2.0	Centrally managed common infrastructure for the Government – currently, around 255 organizations host applications in the Cloud Primary site	31 Government Organizations	• Structured Questionnaire survey with IT Administrator – Total 31 • 31 Heads of Organization – Key Informant Interviews
Digitizing Government Forms – forms.gov.lk	Initially in 10 Government Organizations	10 Divisional Secretariats 15 Divisional Secretariats as counter factual	• 25 Organizational Questionnaire Survey (Structured) with Officers handle services (forms) • Structured Questionnaire survey with IT Administrator - Total 50 (25x 2) • 5 Citizens visited to the organization –Total 125 (25 x5) • 25 Heads of Organization - Key Informant Interviews

Other than the above-mentioned data collection methods, few Focus Group Discussions (FGDs) were carried out at the suitable government institutions.

3.4. Data Collection, Analysis and Reporting

3.4.1. Data Collection

Field work of the Baseline Study was started on 17th November 2021 and completed on 18th January 2022. Field staff has visited 81 organizations for data collection. In addition, due to COVID related logistical limitations data from 2 organizations were collected by using Video Conferencing Facility. Also, in few organizations data were gathered by using both physical and video conferencing techniques.

The consultant team of the baseline study in collaboration with the ICTA scheduled appointments with the respondents considering their availability and convenience.

The Computer-aided paperless interviews (CAPI) method (using smart phones and tabs) was used to carry out the Questionnaire Survey with User staff and Citizens who are visiting the Govt organizations. . CAPI is an interviewing technique in which the respondent or interviewer uses an electronic device to answer the questions. KoBo Toolbox (https://www.kobotoolbox.org/) software was used as the CAPI tool for the questionnaire survey. KoBo Toolbox is well known across the world for its simple, robust and powerful tools for data collection and being used by hundreds of organizations such as UN Agencies, other humanitarian organizations.

Due to current COVID 19 situation in the country. The field evaluation teams strictly followed COVID 19 safety guidelines introduced by the Ministry of Health (MoH) when conducting face to face interviews. Also, there were several challenges faced by the field staff during the data collection due to busy schedules in government offices, unavailability of necessary information, unsupportive organizations, negative attitude towards the project, etc. However. The field team managed to overcome these challenges by several methods.

3.4.2. Data Collection Instruments

The data collection tools for the four project components were developed by the consultants based on the M&E Matrices. Theses includes key Informant Interview Protocols, Organizational Questionnaire, brief questionnaires to gather information from Executives (Users) and Citizens. Also, separate questionnaire was developed for ICT Administrator of the organization recognizing importance of the role.

The questionnaires were developed for the baseline study considering the finally expected findings using the identified indicators for each project initiative. To ensure the quality of data, short questionnaires were developed and only essential information were included in the questionnaires. This will ensure efficient conduct of the interviews with better responses while avoiding an overload of information for data processing and analysis. The survey questionnaires were developed in English language and subsequently translated into Sinhala and Tamil languages.

The questionnaires were pretested at the pilot study which conducted in the initial stage of data collection in selected organizations. Data collection instruments and M&E Matrices were revised based on the findings of the pilot study.

Focus Group Discussions (FGDs) were conducted in few selected organizations depending on the preference of the Head of the Organizations. FGDs were focused to gather information in relation to the general digital adoption and readiness of the organizations.

Systematic Observations were carried out in collaboration with the government officials when the field team visited to government organizations, once the interview process completed.

Table 3. 6: Data Collection Tools and Methods

Method		Data Collection Tools	Type of Respondents	Justification
Key Informant Interviews		Key Informant Interview Protocols	Government leadership – Secretary, Add. Secretary, DG, Divisional Secretary level Key Government Staff – Chief Accountant, Chief Admin Officer, etc.	Gather in-depth knowledge at the policy and vision level Current status and acceptance of the organization
Questionnaire Survey	**Organizational Level**	Structured Data Collection Tool	Senior staff of GoSL institution – Asst. Divisional Secretary, Add. Secretary, Additional DGs, etc.	Gather quantitative data To understand organizational level perception
	User Survey – GoSL Officials & IT Admin	Semi - Structured Questionnaire	Executive level/operational level staff ICT Administrators in the organizations	Gather quantitative data To understand employee level perception and IT related data
	Citizens Survey	Structured Questionnaire	Citizens who obtain services from GoSL organizations	To understand citizen perception
Focus Group Discussions		Focus Group Discussion Guidelines	Development Officers, Deputy Directors, Accountants, Admin officers, GNs	To understand general situation, verify the information gathered from the other methods
Document review			Secondary Data	To collect required background knowledge

3.4.3. Data Analysis and Reporting

The data collected for the Baseline Survey entered into the SPSS and analytical tables were generated. Initially expected results from each of the four activities were identified comparing with the M&E framework/ Matrix in terms of the respective indicators for such results.

During the study, data were gathered using diverse instruments conducting interviews with various types of respondents. The type of questionnaires includes a) general questionnaire for capturing organizational level data/information, b) questionnaire for IT Administrator, c) questionnaire for Users staff, d) questionnaire for citizens and e) semi structured KII guideline for conducting interviews with Heads of Organizations. The data gathered through administering all these instruments were analyzed scientifically and triangulated to draw a meaningful picture of the present situation in terms of all the indicators developed under each component.

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4. FINDINGS OF GOVERNMENT VIDEO CONFERENCING FACILITY

4.1. Background of the Survey and Study Sample
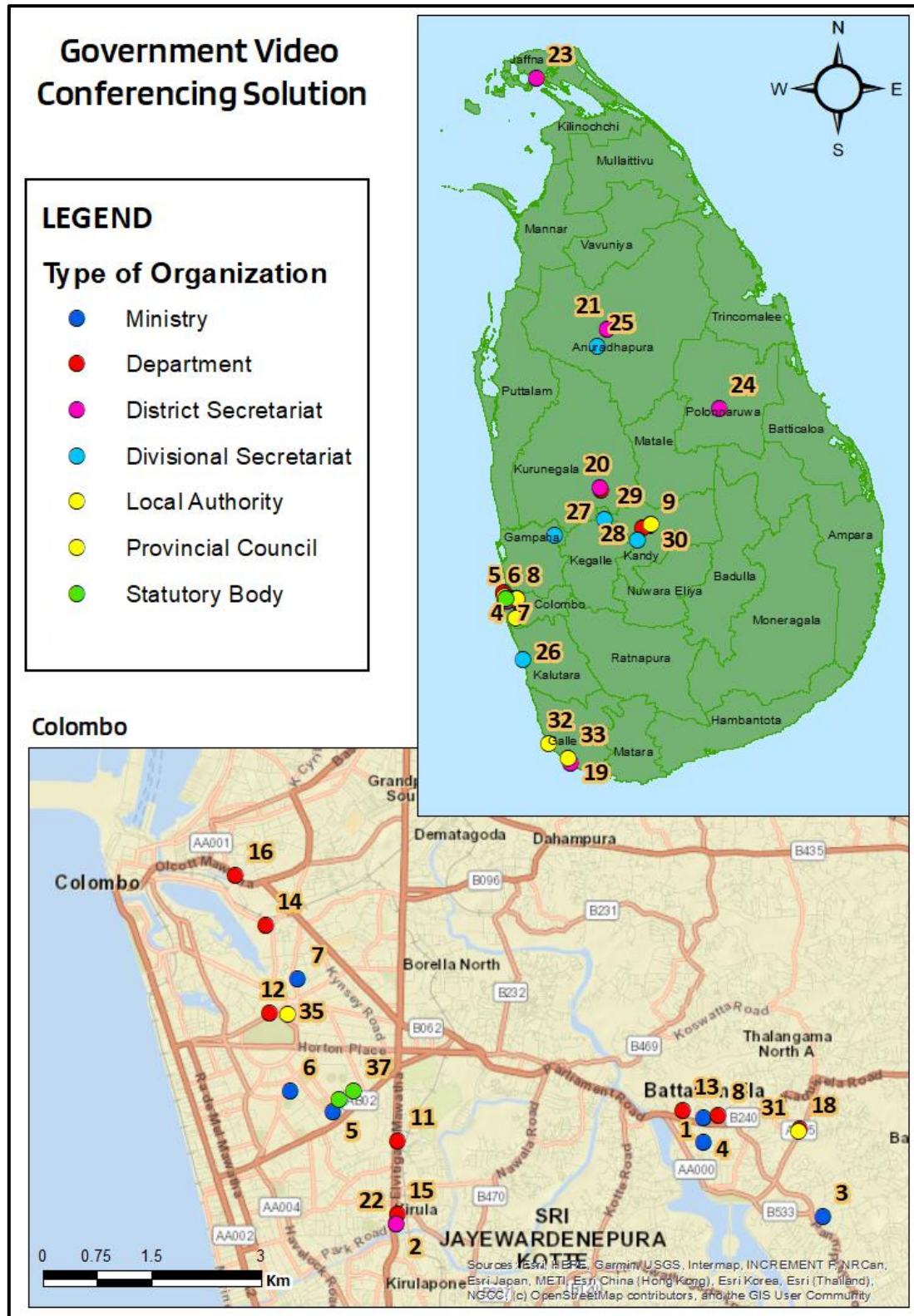
Figure 4. 1: Locations of surveyed organizations for Government Video Conferencing Facility

Table 4. 1: Organizations Surveyed for Government Video Conferencing Facility

Number	Type of Organization	Name of the Organization
1	Ministry	Ministry of Transport
2	Ministry	Ministry of Home Affairs
3	Ministry	Ministry of Education
4	Ministry	Ministry of Agriculture
5	Ministry	Ministry of Public Affairs, Provincial Councils
6	Ministry	Ministry of Youth and Sports
7	Ministry	Ministry of Health
8	Department	Department of Registration of Persons
9	Department	Department of Education, Central Province
10	Department	Department of Agriculture, Peradeniya
11	Department	Department of Motor Traffic
12	Department	Primary Healthcare System Strengthening Project, Ministry of Health
13	Department	Department of Census and Statistics
14	Department	Department of Registrar Companies
15	Department	National Programme for Tuberculosis and Chest Disease Control
16	Department	Sri Lanka Police
17	Department	Department of Education, North-Western Province
18	Department	Department of Probation and Childcare Services
19	District Secretariat	District Secretariat Galle
20	District Secretariat	District Secretariat Kurunegala
21	District Secretariat	District Secretariat Anuradhapura
22	District Secretariat	District Secretariat Colombo
23	District Secretariat	District Secretariat Jaffna
24	District Secretariat	District Secretariat Polonnaruwa
25	Divisional Secretariat	Divisional Secretariat Thalawa
26	Divisional Secretariat	Divisional Secretariat Kalutara
27	Divisional Secretariat	Divisional Secretariat Mirigama
28	Divisional Secretariat	Divisional Secretariat Udunuwara
29	Divisional Secretariat	Divisional Secretariat Rambukkana
30	Local Authority	Municipal Council Kandy
31	Provincial Council	Western Province Council
32	Local Authority	Hikkaduwa Urban Council
33	Provincial Council	Southern Provincial Council
34	Local Authority	Kesbewa Urban Council
35	Local Authority	Colombo Municipal Council
36	Statutory Body	National Science Foundation
37	Statutory Body	Disaster Management Center

The selected sample for the baseline study was extremely representative and heterogenous in nature covering a wide cross-section of government organization which provided rich information in a border context. Figure 4. 2 shows the sample profile of the study which consisted of sample of thirty-seven government organizations. These organizations include the Government Ministries, Departments, Local Authorities, District Secretariats, Divisional Secretariats, Provincial Councils and Statutory Bodies as shown in the Figure 4. 1 and Table 4. 1. Altogether 31 Head of Organizations, 35 IT Administrative Officers and 226 VCon Users and 82 citizens were interviewed in the study.
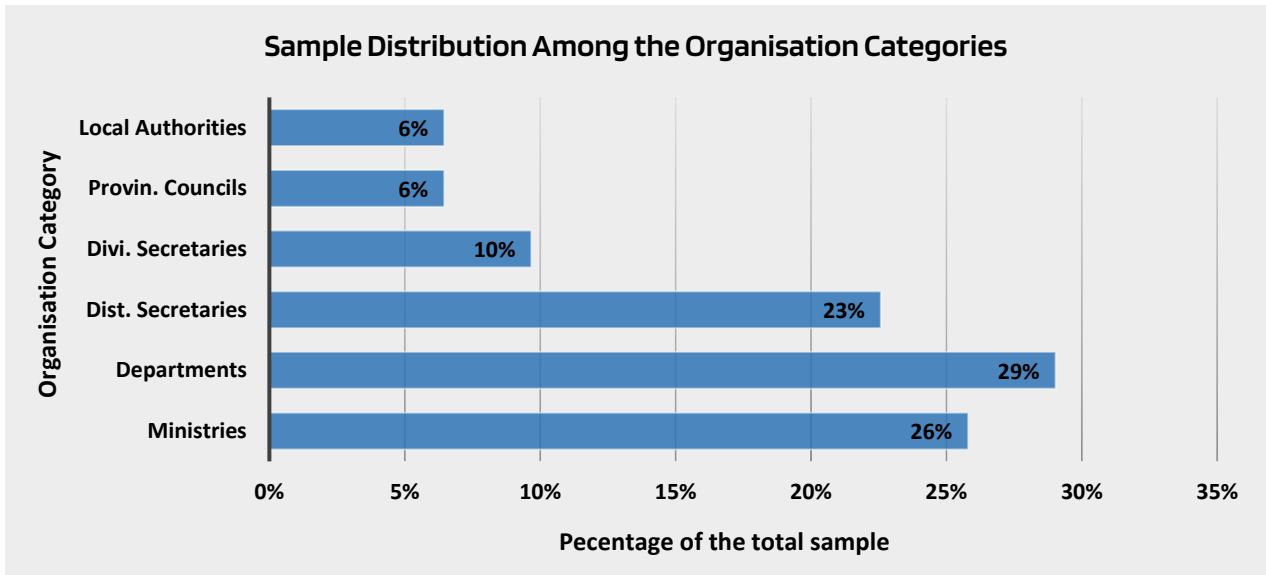
Figure 4. 2: Sample distribution among the organization categories

The Gender composition of the respondents ((Organizational Heads, IT Administrators, VCon Users and Citizens) are shown in Figure 4. 3 shows that majority 78% of the organization heads interviewed were females while majority 57% of IT Administrators were males and majority 56% of Users were females and 76% of Citizens interviewed were male.
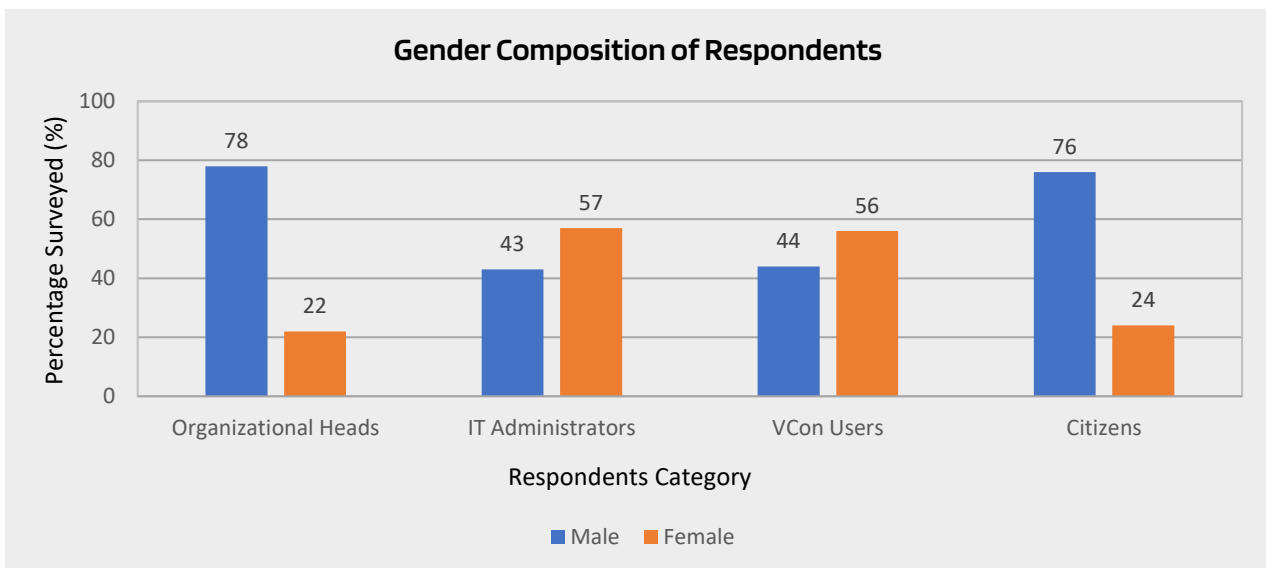
Figure 4. 3: Gender Composition of the Respondents

4.2. Views, Opinions and Perceptions of the Organizational Heads Regarding the Implementation of Government Wide Video Conferencing Facility

In-depth one-to-one interviews were carried out with the heads of government organizations selected for the study to get their views, opinions and perceptions of the proposed initiative. In the absence of the head of the organization, next most senior officer participated in the discussion to provide the much-needed information to reflect the overall organization's opinion, perceptions and insights about the proposed video conference facility to be implemented by ICTA. This qualitative section of the study expected to gather useful and valuable information from these experienced officers regarding current practices, behaviors, perception of the staff and institutional polices in place where the use of Video conference facilities to conduct virtual meetings. These understandings will be used for interpretation and further analysis of quantitative data through triangulation.

The designations of the respondents indicated in Figure 4. 4 shows that while some heads of organizations had participated in the interviews, 42% of the organizations had been represented by next level senior officers such as Project Director, Deputy Directors, Assistant Director ICT, Computer Engineer, Chief Management Assistant, and Assistant Divisional Secretaries in the absence of organization heads at the time of interviews.
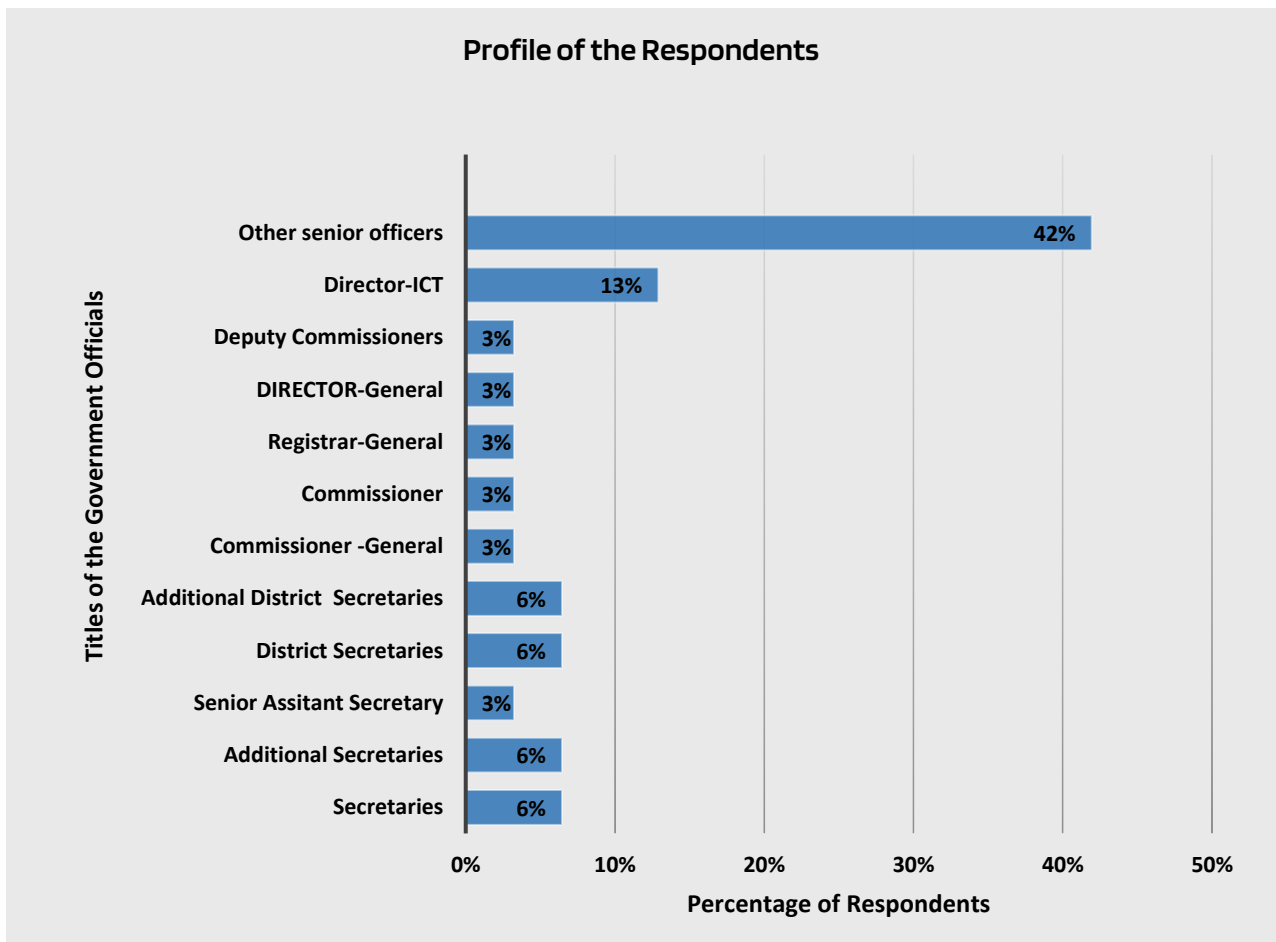
Figure 4. 4: Profile of the KII Respondents

4.2.1. Opinion of the organizational heads regarding holding of physical meetings

Opinion about Holding Physical Meeting for Government Officers

Legend: ■ Agree ■ Do not agree ■ Not always

Category	Agree	Do not agree	Not always
Considerable costs are incurred to host meetings and on travelling	100%		
If travelling time is saved they can attend to more prodcutive work in their offices	91%	3%	6%
In-house face-to-face meeting are held with the officers from outside offices	94%	6%	
Time spent on travelling is a waste of valuble time	88%	9%	3%
Office productivity is affected while attending out-of-office	81%	3%	16%
Senoir officers waste time and resources on attending outside meetings	75%	25%	

Figure 4. 5: Opinion about holding physical meeting for Government officers

The respondents were unanimous in agreeing that considerable amount of costs is incurred when officers have to travel to attend physical meetings held outside their offices. However, they pointed out that some important meetings such as tender opening meetings, budget meetings and confidential discussions need to be held physically. Further, they pointed out that considerable amount of valuable time is lost while travelling to and from these meetings held in outside venues. In some cases, they explained, that the whole day is wasted on the road although actual meeting time is only 2-3 hours. The extent of time waste depends on the distance to the meeting venue and traffic congestion at the time.

Similarly, these respondents (94%) confirmed that they too conduct face-to-face meetings in their own offices with the participation of many outside officers. These participants incur high costs on travelling and waste valuable time on the road too.

Around eighty percent of the surveyed respondents admitted that when senior officers are out of the office, overall productivity in the office is affected to a certain extent. Some officers also pointed out that often when they return, they are tired after travelling and wasting time on traffic congestions and affect their productivity or the day.

However, they all agreed that in some cases physical meetings are essential for critical decision-making processes.

4.2.2. Opinion of the Respondents Regarding Holding of Virtual Meetings
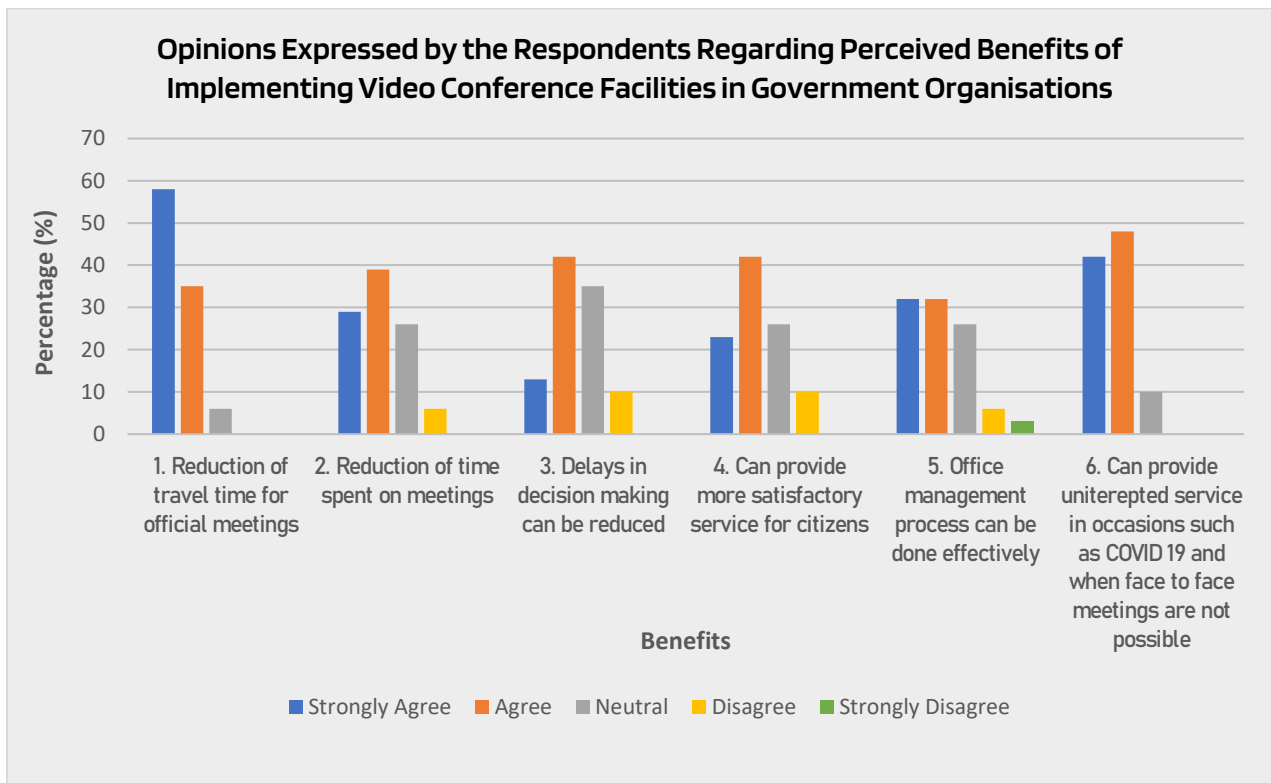
Figure 4. 6: Opinion of the respondents regarding holding of virtual meetings

Figure 4. 6 shows the responses given by the responding senior officers regarding the benefits they expect from the proposed video conference initiative.

Briefly:

- Majority 93% strongly agreed or agreed that time spent on travelling to outside meetings could be saved if they can hold or join meeting form their offices using the video conference technology to be provided to them. Only 6% remained neutral as lacked they experience of this technology.
- Only 69% expected the actual meeting time to get reduced because meetings are held online. Some even expressed that because of ease of holding meetings virtually, number of meetings could increase.
- Regarding the expected reduction of delays in decision making, only 55% strongly agreed or agreed that this initiative will speed up the decision-making process. They opined that actual final decision making is not a simple process that can be taken immediately over a meeting but rather a complex process where so many aspects have to be considered, studied and analyzed carefully before a final decision is made.
- The respondents were also divided in their opinion regarding the provision of improved citizen service as a result of this initiative. Only 55% agreed that this initiative could enhance the productivity since more time is available for them to take decision quickly, which could lead to improved services to the citizens. However, 26% of the respondents were skeptical of this view.
- Another 64% expect the office management processes to be improved and streamlines with the implementation of this initiative as they could devote more time to resolve office issues.

- As seen, 90% of the respondents were in agreement with statement as most of them have already experienced the usefulness of this facility when they had to provide essential citizen services when usual office activities were severally curtailed due to the pandemic situation in the country.

4.2.3. Experience of Using Video Conferencing Facilities During Quarantine Period

Many participants confirmed that they used video conference facilities to hold virtual meetings with other officers, both internal and external, to provide uninterrupted essential services to the citizens. Some have also conducted few physical meetings with the senior staff adhering to the health guidelines stipulated by the government. This confirms that the respondents have the experience of using video conference facilities and experienced the benefits of this technology.

4.2.4. Usefulness of Video Conference Facilities During 'Work from Home' Period
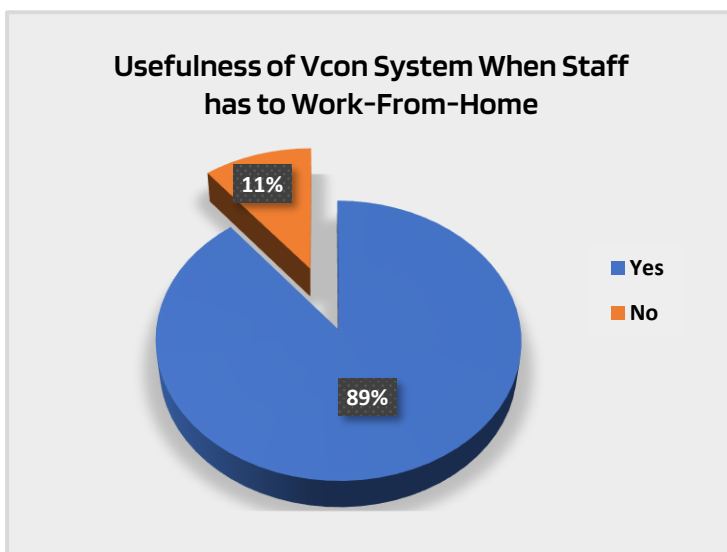
Figure 4. 7: Usefulness of VCon when staff has to Work-From-Home

Government requested its staff to continue their work from homes to provide uninterrupted services to the public during COVID lock down period. Around 90% of the respondents accepted the usefulness of video conference facilities to connect with their staff, co-workers and superiors to provide vital citizen services during lockdowns. Some field-based officers have used 'WhatsApp' messaging system effectively to keep their contacts to provide citizen services. One organization has even created its own Video conference platform to communicate with its field staff during the lockdown period.

4.2.5. Use of meet.gov.lk Conference Platform and Others During the Lockdown Period

As seen from the Figure 4. 8, only 53% of the organizations have used the meet.gov.lk video conference platform specially created for the government officers to communicate with each other during the COVID 19 pandemic period. As observed during the interviews, some organizations were unaware of this platform while some others having used this platform initially have subsequently shifted to other popular platforms because of technical issues they have encountered with the government platform.
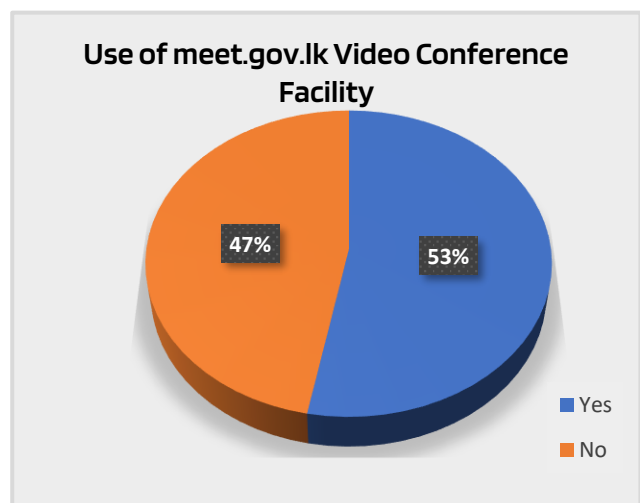
Figure 4. 8: Use of meet.gov.lk conference platform by responding organization

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4.2.6. Some concerns expressed by the respondents regarding the use of Video Conference facilities in their organizations

The respondents expect undisturbed, adequate seating and comfortable environment with high quality technology and equipment to conduct virtual meeting successfully. They stressed the importance of having quality audio and video reception in the system to make these conferences productive and stress free. Some organizations expect large number of participants to attend these meetings and expect the conference rooms to be air-conditioned, sound proofed, and adequate seating arrangements. Some were concerned about the adequacy of present internet facilities available in their offices to support the intended video conference system to be installed.

4.2.7. Additional Requirements to Support the Effective Use of Video Conference Facilities
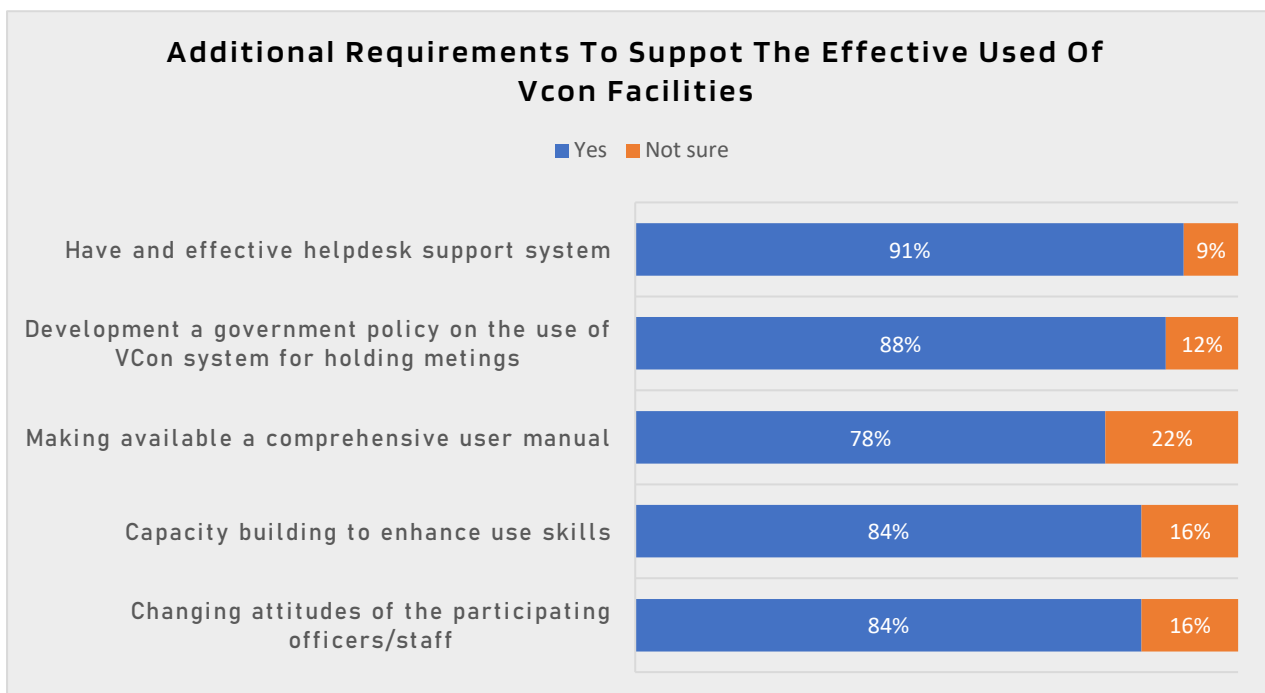
Figure 4. 9: Additional requirements to support the effective use of Video conference facilities

As given in Figure 4. 9, the respondents highlighted additional pre-requisites that has to be in place for smooth and successful operation of the initiative. Almost 91% wanted an effective and efficient helpdesk support system in place for speedy resolution of any emerging issues and technical problems. Also, adequate capacity building and technical training are important, since some organizations do not have dedicated IT staff. Developing required policy and procedures for the effective adoption of the technology were also found to be important to majority respondents. Change management programmes are found to be important create awareness to the technology to change attitudes of some officers.

4.3. Number of Meetings Held During Last Month and the Number of Participants

As observed during the study, government organizations conduct different types of meetings to discuss various issues. Main type of meetings held includes: 1. Internal meetings with the office staff physically and online, 2. Meeting held outside the office with the outside officers and 3. Meetings held within the office with outside officers. The summary of meetings held (in each type) are given in below tables.

Table 4. 2: Average number of internal meetings held physically with the staff per month per organization

Organization Category	No of internal meetings per month			Number of participants		
	Average	Min	Max	Average	Min	Max
Ministries	14	3	44	18	10	26
Departments	5	2	7	28	10	50
District Secretariats	11	3	19	42	15	100
Divisional Secretariats	7	6	8	9	4	12
Provincial Councils	4	2	7	32	15	60
Local Authorities	13	8	17	6	6	6
Statutory Bodies	3	0	5	79	15	250
Overall	**9**	**0**	**44**	**33**	**4**	**250**

On average, surveyed organization had conducted 9 internal meetings with its staff during the month with the average of 33 participants per meeting. Details are given in Table 4. 2.

Table 4. 3: Average number of virtual meetings held with the staff per month per organization

Organization Category	Number of internal meetings (Online)		
	Average	Minimum	Maximum
Ministries	8	0	30
Departments	15	3	44
District Secretariats	7	0	21
Divisional Secretariats	5	0	11
Provincial Councils	0	0	0
Local Authorities	2	0	4
Statuary Bodies	7	0	18
Overall	**7**	**0**	**44**

On average, each organization surveyed had conducted 7 online meetings with internal staff during the month. Details are given in Table 4. 3.

Table 4. 4: Average number of monthly meetings held outside the office per organization

Organization	Number of external meetings			Number of participants		
	Average	Min	Max	Average	Min	Max
Ministries	6	3	14	36	10	100
Departments	4	2	6	17	10	25
District Secretariats	11	4	33	38	20	68
Divisional Secretariats	13	6	19	21	8	30
Provincial Councils	5	3	7	13	3	20
Local Authorities	5	3	6	10	4	15
Statuary Bodies	4	0	5	15	0	25
Overall	**7**	**0**	**33**	**25**	**0**	**100**

On average, 9 external meetings had been held outside the office, physically, during the month. Details are given in Table 4. 4.

Table 4. 5: Number of virtual meetings participated by organization staff with outside officials per month

Organization	Number of virtual meetings		
	Average	Min	Max
Ministries	7	0	25
Departments	8	1	19
District Secretariats	8	6	12
Divisional Secretariats	13	6	22
Provincial Councils	13	0	35
Local Authorities	6	6	6
Statuary Bodies	3	0	5
Overall	**8**	**0**	**35**

On average, 8 online meetings with external officials had been held during the month. Details are given in Table 4. 5.

Table 4. 6: Number of physical meetings held per month in the office premises with the participation of outside officials

Organization	Number of meetings			Number of participants		
	Average	Min	Max	Average	Min	Max
Ministries	6	4	9	27	0	100
Departments	5	2	7	12	5	20
District Secretariats	6	0	12	31	0	45
Divisional Secretariats	13	6	20	19	15	23
Provincial Councils	4	1	10	18	10	25
Local Authorities	7	5	8	5	5	5
Statuary Bodies	4	0	5	14	0	25
Overall	6	0	20	18	0	100

On average, 6 meetings had been held with outside officers within the office premises during the month. And average of 18 participants had joined these meetings. Further details are given in Table 4. 6.

Table 4. 7: Number of virtual meetings held by the organization per month for outside officials

Organization	Number of virtual meetings		
	Average	Min	Max
Ministries	5	0	15
Departments	7	4	11
District Secretariats	13	0	46
Divisional Secretariats	6	0	11
Provincial Councils	5	0	11
Local Authorities	7	5	9
Statuary Bodies	8	5	18
Overall	**8**	**0**	**46**

Overall, an average of 8 virtual meetings with outside officers per month per organization has been conducted during the last month with minimum of no meetings and maximum of 46 meetings.

4.4. Calculated Average Monthly Cost of Travelling Incurred When Attending Official Meetings Held Outside the Office Per Month

Travel Distance: The Table 4. 8 presents the details and average distance travelled by the official to attend official meeting held outside the office premises. As per data collected during the survey, average distance travelled is 66 Km per meeting.

To arrive at the cost of travelling, average taxi fares charged by the reputed taxi companies, LKR. 40 per km was used. Table 4. 9 shows the calculations which works out to LKR 2,640 per meeting.

Average total travel distance and cost for attending meetings per person per month

Table 4. 8: Cost of travelling for attending a single meeting outside the office

Organization	Average Travel Distance per meeting (Km)	Total Cost @ LKR 40 per Km
Ministries	8	320
Departments	91	3,640
District Secretariats	168	6,720
Divisional Secretariats	26	1,040
Provincial Councils	66	2,640
Local Authorities	15	600
Statuary Bodies	12	480
Average on Total	**66**	**2,640**

calculated using the data gathered through the survey. Average travel distance a participant travel to attend meetings per month is 462 Km while the calculated average cost is LKR 18,480.00.

Table 4. 9: Calculated average travel cost for attending meetings outside the office per month per participant

Organization	Average No of Meetings	Average travel distance per meeting per participant (Km)	Total average distance traveled per month (Km)	Travel cost @ LKR 40/KM (LKR)
Ministries	6	8	48	1,920.00
Departments	4	91	364	14,560.00
District Secretariats	11	168	1,848	73,920.00
Divisional Secretariats	13	26	338	13,520.00
Provincial Councils	5	66	330	13,200.00
Local Authorities	5	15	75	3,000.00
Statuary Bodies	4	12	48	1,920.00
Overall	**7**	**66**	**462**	**18,480.00**

4.5. Calculated Travel Cost Incurred by Outside Participants When Attending the Meetings Held Within the Office / Per Month

Table 4. 10: Calculated average travelling cost incurred by an outside participant to attend a single meeting

Organization	Average Travel Distance covered by a participant per meeting (Km)	Travel cost @ LKR. 40 per Km (LKR)
Ministries	125	5000
Departments	55	2200
District Secretariats	38	1520
Divisional Secretariats	17	680
Provincial Councils	72	2880
Local Authorities	10	400
Statuary Bodies	39	1560
Overall	**54**	**2160**

Travel Distance: The Table 4. 10 present the average travel distance by outside parties attending meeting held within the office. The average total distance travelled is 54 Km per meeting.

Taking the average taxi fare of SLRs. 40 per km, average travel cost work outs to LKR. 2,160 per meeting. Details are given in Table 4. 10.

Average travel distance and cost for attending meetings organized by the government institutions were calculated using gathered data. Average total distance traveled per month by the participants is 13,284 Km while the average travel cost is LKR 531,360.00 per month**.**

Table 4. 11: Calculated average total travel cost incurred by outside participants per organization per month

Organization	Average No of meetings per month	Average Travel Distance Per meeting per participant	Average no of participants per meeting	Total distance traveled per month (Km)	Total travel cost incurred @ LKR 40 per Km
Ministries	6	125	89	**66,750**	**2,670,000.00**
Departments	5	55	18	**4,950**	**198,000.00**
District Secretariats	6	38	48	**10,944**	**437,760.00**
Divisional Secretariats	13	17	41	**9,061**	**362,440.00**
Provincial Councils	4	72	16	**4,608**	**184,320.00**
Local Authorities	7	10	13	**910**	**36,400.00**
Statuary Bodies	4	39	32	**4,992**	**199,680.00**
Overall	6	54	41	**13,284**	**531,360.00**

4.6. Time Spent to Attend Meetings Held Outside the Office Per Month and the Outside Official Attending Meetings Held Within the Office

Average Travels time: The following Table 4. 12 shows the time spent by the officials of the organizations to attend meetings held outside the office. The average time spent on travelling to attend an outside meeting was found to be 111 minutes per meeting.

Table 4. 12: Average travel time spent by the officials for attending a meeting outside their office

Organization	Average (Minutes)	Min (Minutes)	Max (Minutes)
Ministries	42	30	60
Departments	32	6	60
District Secretariats	280	60	600
Divisional Secretariats	97	80	120
Provincial Councils	90	30	180
Local Authorities	50	40	60
Statuary Bodies	40	0	60
Overall	**111**	**0**	**600**

Table 4. 13 presents the total average number of hours spent on travelling to meetings per month. As seen a total of 13 hours have been utilized by an official for travelling to attend meetings outside per month.

Table 4. 13: Total average number of hours spent by an officer to attend meetings held outside the office per month

Organization	Average no of meetings per month	Average travel time per meeting	Total Travel Time in minutes per month	No of Hours spent on travelling per month
Ministries	6	42	252	4
Departments	4	32	128	2
District Secretariats	11	280	3,080	51
Divisional Secretariats	13	97	1,261	21
Provincial Councils	5	90	450	8
Local Authorities	5	50	250	4
Statuary Bodies	4	40	160	3
Overall	**7**	**111**	**777**	**13**

Table 4. 14 shows the travel time spent by the external officials to attend meetings held within the office and the average travel time spent by outside officials to attend a meeting within the office premises is 112 minutes per meeting with a minimum of zero minutes and maximum of 600 minutes.

Table 4. 14: Average travel time spent by outside officials to attend meetings held in the office

Organization	Average Travel Time (Minutes)	Minimum (Minutes)	Maximum (Minutes)
Ministries	285	120	600
Departments	61	2	120
District Secretariats	70	0	120
Divisional Secretariats	65	30	120
Provincial Councils	105	15	180
Local Authorities	25	20	30
Statuary Bodies	130	0	300
Overall	**112**	**0**	**600**

The following Table 4. 15 presents the Total Hours utilized for attending meeting per month and accordingly 605 hours has been utilized for travelling to attending meetings.

Table 4. 15: Total number of hours spent by external officials to attend meetings held in the office per month

Organization	Average No of Meetings per month	No of participants per meeting	Average Travel time per official per meeting	Total time spent on travelling (minutes)	No of Hours spent on travelling (hrs.)
Ministries	6	125	285	213,750	3,563
Departments	5	55	61	16,775	280
District Secretariats	6	38	70	15,960	266
Divisional Secretariats	13	17	65	14,365	239
Provincial Councils	4	72	105	30,240	504
Local Authorities	7	10	25	1,750	29
Statuary Bodies	4	39	130	20,280	338
Overall	**6**	**54**	**112**	**36,288**	**605**

4.7. Use of Video Conferencing Facilities in the Office: Number of Participants

As seen from Table 4. 16 an average, 39 persons per organization have used some kind of a video conferencing facility for official purposes, with the participation of a minimum of 5 and a maximum of 120 persons. The number of participants in Video Conferences appears to be comparatively high in District Secretariats (57), Local Authorities (51), Statutory Bodies (44) and Ministries (40) while low in Provincial Councils (17).

Table 4. 16: Usage level of any Video Conferencing Facility

Organization	Number of Participants per virtual meeting		
	Average	Min	Max
Ministries	40	6	120
Departments	25	10	37
District Secretariats	57	8	111
Divisional Secretariats	26	5	50
Provincial Councils	17	5	27
Local Authorities	51	25	77
Statuary Bodies	44	20	86
Overall	**39**	**5**	**120**

4.8. Number of Staff Members Using Meet.gov.lk Video Conferencing Facility

Organization	Average	Min	Max
Ministries	1	0	2
Departments	0	0	0
District Secretariats	3	0	18
Divisional Secretariats	0	0	1
Provincial Councils	4	0	11
Local Authorities	0	0	0
Statuary Bodies	0	0	0
Overall	**1**	**0**	**18**

Table 4. 17: Usage of meet.gov.lk Video Conferencing Facility

Table 4. 17 shows that extremely few persons are using meet.gov.lk Video Conferencing platform to hold virtual meetings due to so many operational difficulties. This refers from the head of the organization's perspectives. It is notable that users' perspectives are different from this analysis which is given below.

Table 4. 18: Average percentage use of different VCon apps by GoSL officials per organization

Organization Type	Meet.gov.lk	Zoom	Google meets	Microsoft Teams	Skype	Facebook Messenger	WhatsApp	GoToMeeting	Other	Total
Ministries	23.8	95.2	40.5	45.2	2.4	2.4	14.3	0.0	2.4	42
Departments	13.4	100.0	49.3	44.8	3.0	7.5	31.3	0.0	9.0	67
District Secretariats	16.7	100.0	47.2	36.1	13.9	19.4	30.6	13.9	16.7	36
Divisional Secretariats	3.0	93.9	15.2	24.2	0.0	3.0	27.3	0.0	3.0	33
Provincial Councils	8.3	100.0	8.3	25.0	8.3	8.3	25.0	8.3	8.3	12
Local Authorities	3.6	100.0	21.4	14.3	0.0	0.0	7.1	0.0	0.0	28
Statuary Bodies	12.5	62.5	0.0	75.0	12.5	0.0	87.5	0.0	0.0	8
Overall	**12.8**	**96.9**	**35.0**	**36.7**	**4.4**	**6.6**	**26.1**	**2.7**	**6.6**	**226**

The above Table 4. 18 shows the usage of video conferencing applications installed in users' communication equipment. It was found that 13% used meet.gov.lk whereas 97% used Zoom platform for their online video conferencing platforms and Google Meets, Microsoft Teams, WhatsApp show much usage patterns than meet.gov.lk. Out of 13% of the users, majority are from the ministries and district secretariats and departments accordingly.

4.9. Use of Other types of Video Conferencing Platforms

Table 4. 19 present the level of usage of different popular types of Video Conferencing Platform. Accordingly, majority has used "Zoom", "Microsoft Teams" and "WhatsApp" for video conferencing. Other video conferencing platforms are being used by few organizations.

Table 4. 19: Usage pattern of Video Conferencing Platforms

Video Conferencing Platform	Frequency of using Video Conference Facilities			
	Daily	Monthly (rarely)	Weekly (often)	Not using
Meet.gov.lk	3%	31%	6%	60%
Zoom	54%	3%	37%	6%
Google Meets	14%	17%	9%	60%
Microsoft Teams	11%	23%	34%	32%
Facebook Messenger	6%	6%	3%	85%
WhatsApp	54%	NA	NA	46%
GoToMeeting	NA	3%	3%	94%

It is significant to note that 60% of the IT Administrators do not use meet.gov.lk platform mainly due to following reasons.
- Sound interruption when many are participating.
- There are bandwidth issues.
- It is not user friendly.
- Other common platforms are popular among the staff.
- Microsoft is available 24/7 and participants preferred it.
- Staff is not familiar with meet.gov.lk.

4.10. Use of Video Conferencing Facilities for Official Meetings

Table 4. 20: Use of video conferencing facilities for official meetings

Organization Type	Yes
Ministries	100%
Departments	100%
District Secretariats	100%
Divisional Secretariats	100%
Provincial Councils	100%
Local Authorities	93%
Statuary Bodies	100%
Overall	**99%**

The 99% of the surveyed users of Video Conferencing facilities, confirmed that they have participated in official video conferences.

4.11. Administrative Privileges and Facilities in the Currently Used Video Conferencing Platforms

Table 4. 21 presents the administrative privileges and facilities available with the currently used video conferencing platforms.

Table 4. 21: Availability of the administrative privileges in the currently used platforms

Available facilities	Available	Not available
Adding or removing participants by the host	91%	9%
Recording the meeting by the host	86%	14%
Allowing other participants to record	54%	46%
Document sharing	83%	17%
Time allocation for participants by the host	51%	49%
Activating or muting microphones	91%	9%
Breakout rooms	51%	49%
Waiting rooms	55%	45%
Live transcription	37%	62%
Text massaging for while in the discussion among participants	89%	11%

4.12. Opinion About the Benefits of Holding Meetings and Attending Meetings Using Modern Video Conferencing Technology

Around 226 users of the video conferencing facilities from these organizations were interviewed to get their opinions towards the use of video conferencing. In general, the all held a positive attitude towards the adoption of the technology in government organizations. The views expressed by them are summarized in Table 4. 22.

Table 4. 22: Opinions expressed by video con users about the benefits of holding online meetings

Benefits	Level of agreement				
	Strongly Agree	Agree	Neutral	Disagree	No Idea
1. Video conferencing can reduce travel cost	52%	44%	3%	0%	1%
2. Time saved on travelling to meetings could be used for office work	41%	46%	9%	3%	1%
3. Delays on decision taking can be minimized when more time is available for office work	12%	47%	33%	8%	0%
4. Citizen/Business Services could be delivered more efficiently	16%	59%	21%	4%	0%
5. Office management processes could be organized more efficiently	21%	66%	11%	2%	0%
6. VCon solution could be helpful to provide uninterrupted service in a lockdown situation like COVID 19.	63%	30%	7%	0%	0%
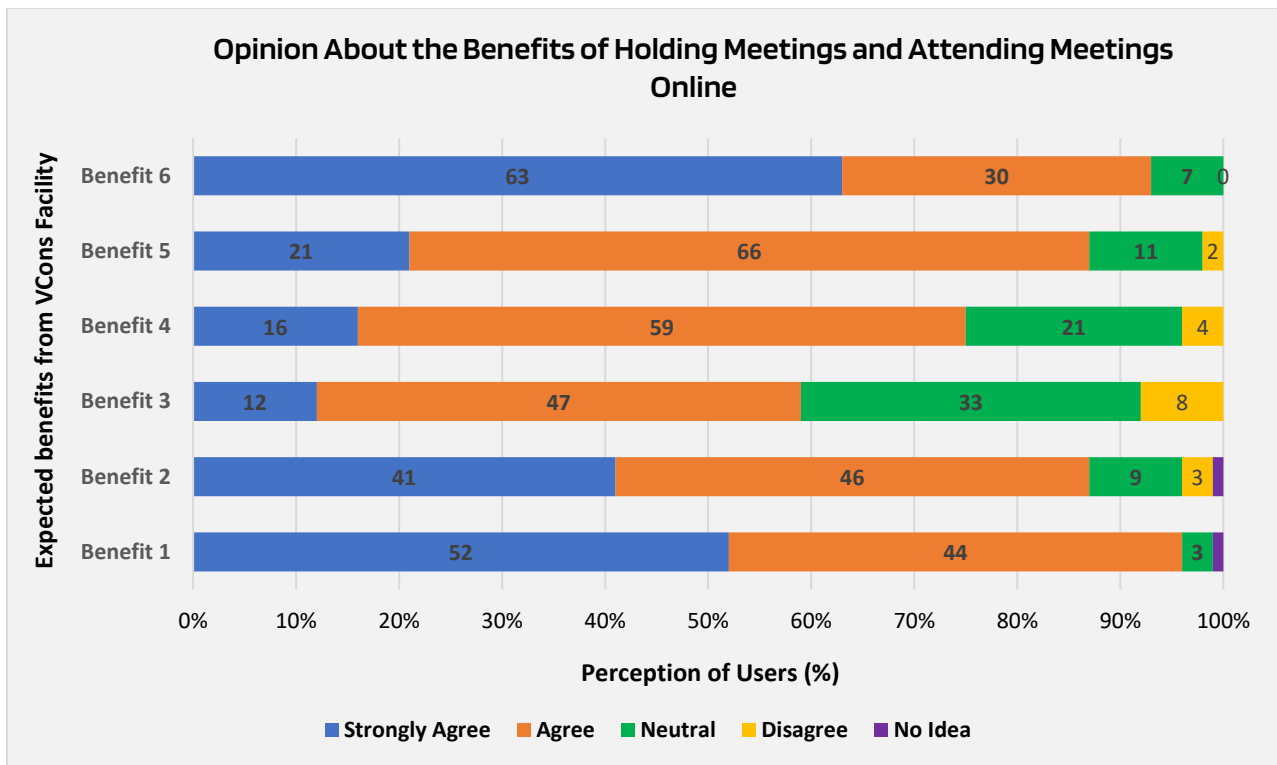
Figure 4. 10: Opinion about the benefits of holding meetings and attending meetings online

4.13. User Awareness of Available Functions of the Video Conference Platforms Currently Being Used

Figure 4. 11 depicts the level of user awareness of the available functions of the currently used Video Conference Platforms. As seen, 98% users are fully or partly aware of all the functions of the currently used Video Conferencing Platforms in their offices.
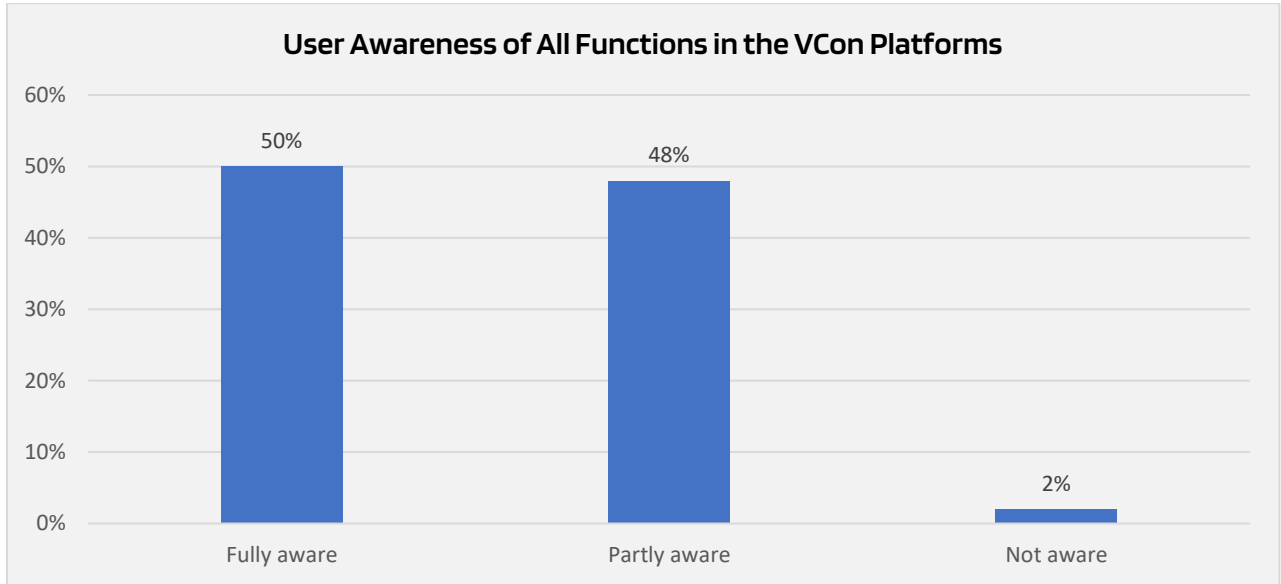
Figure 4. 11:User awareness of the functions of the Video Conferencing Platforms currently used

4.14. Skill Levels of the Users in Operating Video Conferencing Platforms

Figure 4. 12 shows the skill levels of the users in operating the currently used Video Conferencing Platforms used by them. Around 98% users are fully or partly skilled in operating the currently used Video Conferencing Platforms.
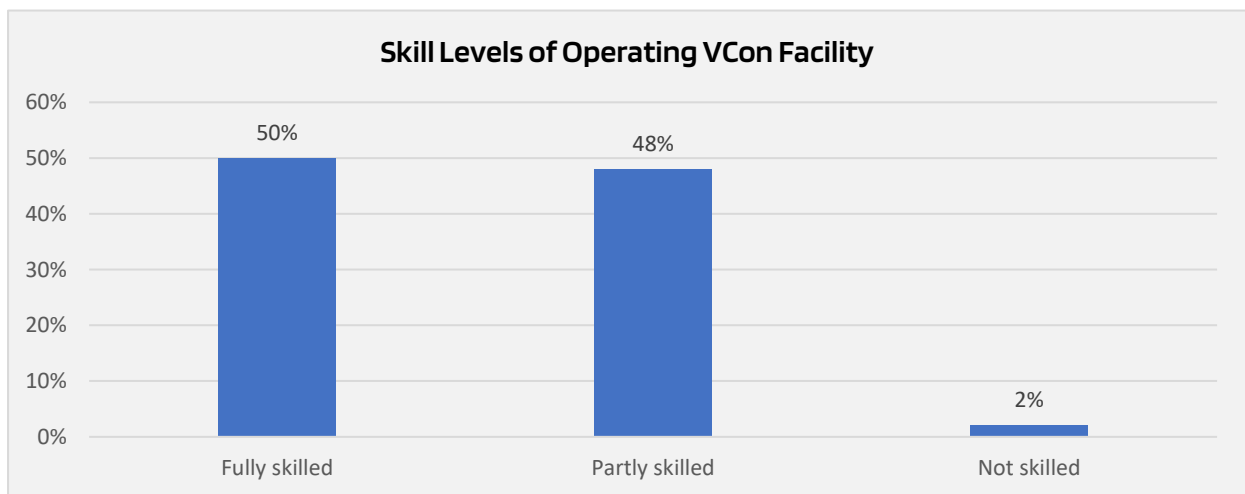
Figure 4. 12: Skill levels of the users to operate the Video Conferencing Platforms currently used

4.15. Level of Satisfaction of Holding Meetings Physical and Online

The users of the video conferencing facilities have assessed the level of satisfaction of holding physical meetings and the online meetings, based on the following criteria:
A. Achieving purpose of the meeting,
B. Active participation of participants,
C. Taking post meeting actions,

The results are given in Table 4. 23. As seen the survey participates are somewhat skeptical about active participation of participants in online meetings, especially when video cameras are muted. They can be tempted to attend to other work when number of participants are large.

Table 4. 23: Level of satisfaction with physical meetings and online meetings

Assessment Criteria	Physical Meetings					Online Meetings				
	Highly satisfied	Satisfied	Fairly satisfied	Not satisfied	No idea	Highly satisfied	Satisfied	Fairly satisfied	Not satisfied	No idea
a. Achieving purpose of the meeting	24%	59%	14%	2%	1%	31%	59%	10%	0%	0%
b. Active participation of participants	31%	59%	10%	0%	0%	13%	26%	56%	4%	1%
c. Taking post meeting actions	15%	68%	14%	2%	1%	11%	54%	31%	3%	1%
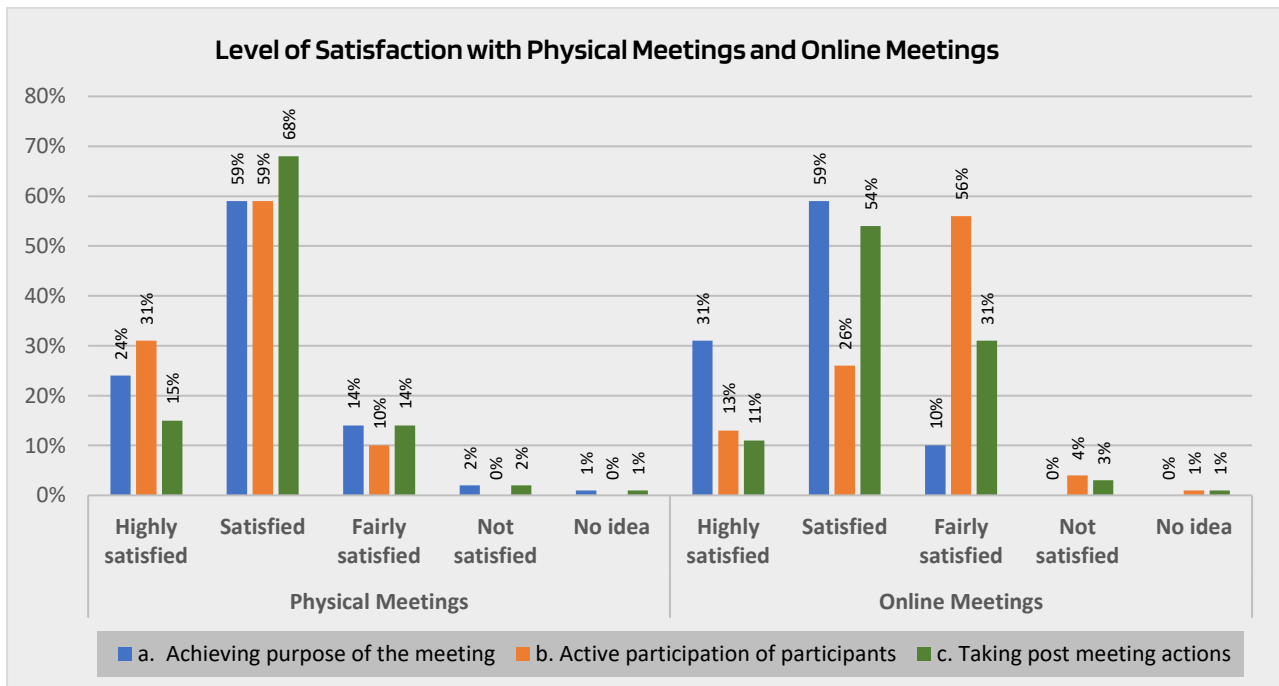
Figure 4. 13: Level of Satisfaction with Physical and Online Meetings

4.16. Level of Satisfaction of the Technical Features of the Currently Used Video Conferencing Facilitates

The users of the video conferencing Facilities have assessed the level satisfaction of the technical features of the currently used video conferencing facilities based on few selected criteria. As observed from Table 4. 24, it appears that they satisfied with those technical features.

Table 4. 24: Level of satisfaction with the technical features of the currently used Video Conference Platforms

Assessment criteria	Highly satisfied	Satisfied	Fairly satisfied	Not satisfied
a. Clarity and listenability - Audio quality	5%	50%	37%	8%
b. Video resolution/quality - Video quality	4%	51%	39%	6%
c. Level lip synchronization (audio - video synchronization)	3%	46%	43%	8%

4.17. Awareness of the Means of Voice and Video Transmission

As seen from Figure 4. 14, 54% of the users are aware that the voice and video transmission is encrypted for security reasons.

Figure 4. 14: Awareness of the technical means of Voice and Video Transmission

Awareness of the Ways That the Voice & Video Transmission

Not aware 46%
Aware 54%

4.18. Personal Willingness to Participate in Video Conferencing

Personal Willingness to Participate in Video Conferencing

2%
98%
■ Willing to participate
■ Not willing to participate
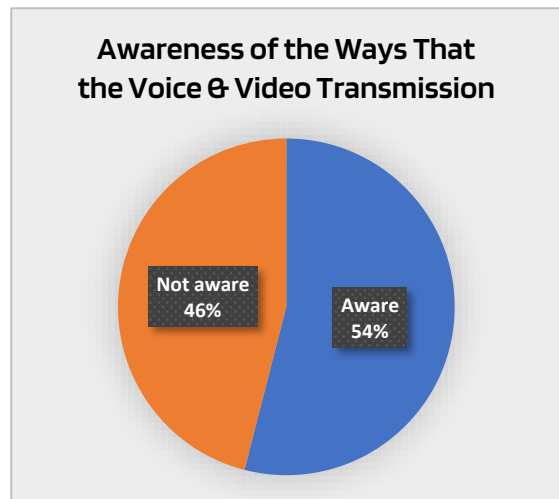
As seen from Figure 4. 15, 98% of the users were willing to participate in video conferencing.

Figure 4. 15: Willingness to participate in Video Conferencing

4.19. Awareness of Recording Meetings

Awareness of recording meetings
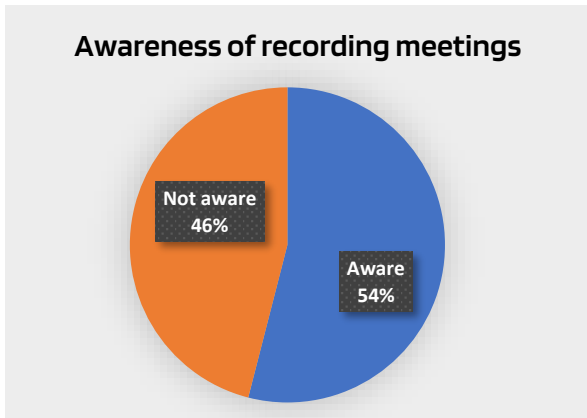
As seen from Figure 4. 16, 54% of the respondents were aware that the host is recording the meeting.

Figure 4. 16: Awareness of recording meetings

4.20. Purpose of the Visit of the Citizen

Citizens were also interviewed to ascertain their opinion on the organizational performance. As seen from Figure 4. 17, 48% citizens interviews have visited the organization to obtain a service such as get a NIC in one day, change the ownership of a vehicle, business registration, building clearance, to get permission   to cut a tree, and get assessment numbers. Hence, it is relevant to ascertain their opinion on the organizational performance at present.
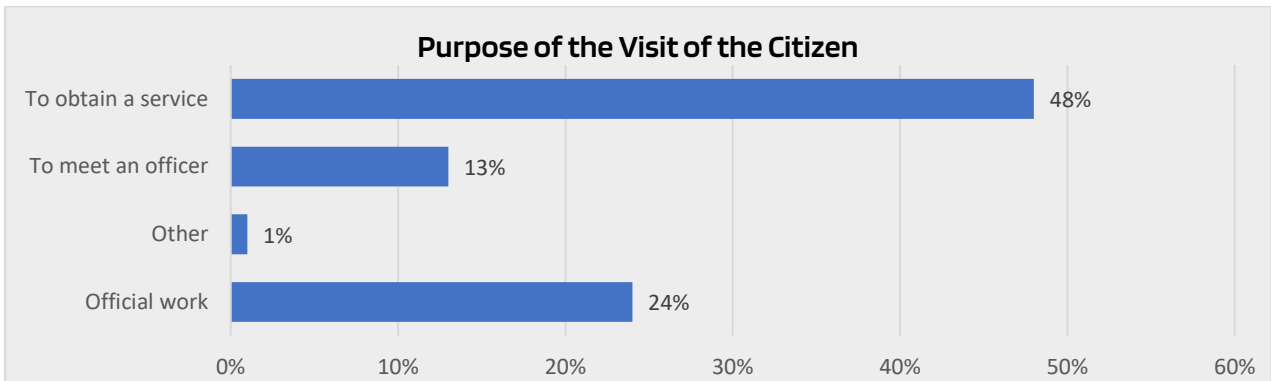
Figure 4. 17: Purpose of the citizens' visit to the organizations

4.21. Reasons for the Delay in Service

As seen from Figure 4. 18, It appears that there has been no delay in the delivery of Services, but the service delivery process was going on and 94% was waiting until the process is completed. Other 6% were lined up to submit their applications.
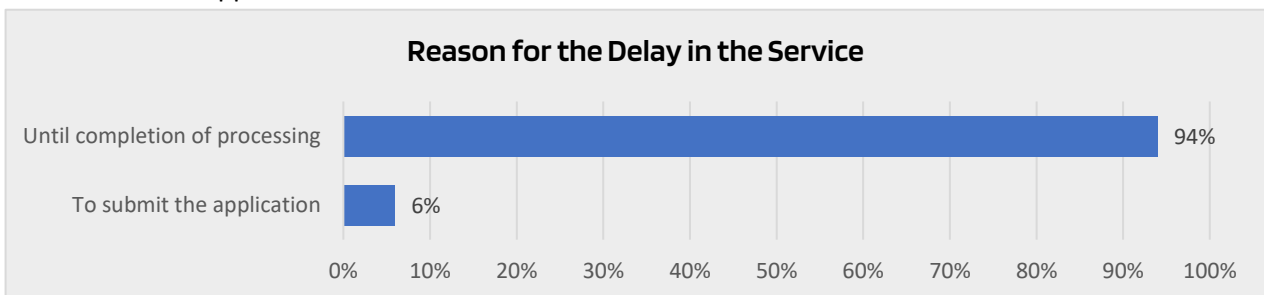
Figure 4. 18: Reasons for the delay in the services

4.22. Duration of Waiting Time for the Service

As seen from Figure 4. 19, respondents felt that the waiting time is somewhat reasonable and 46% have received the service within one hour and 25% in 3 hours.

Duration of Waiting for the Service

Category	Percentage
More than 3 hours	25%
1 to 3 hours	29%
Less than 1 hour	46%
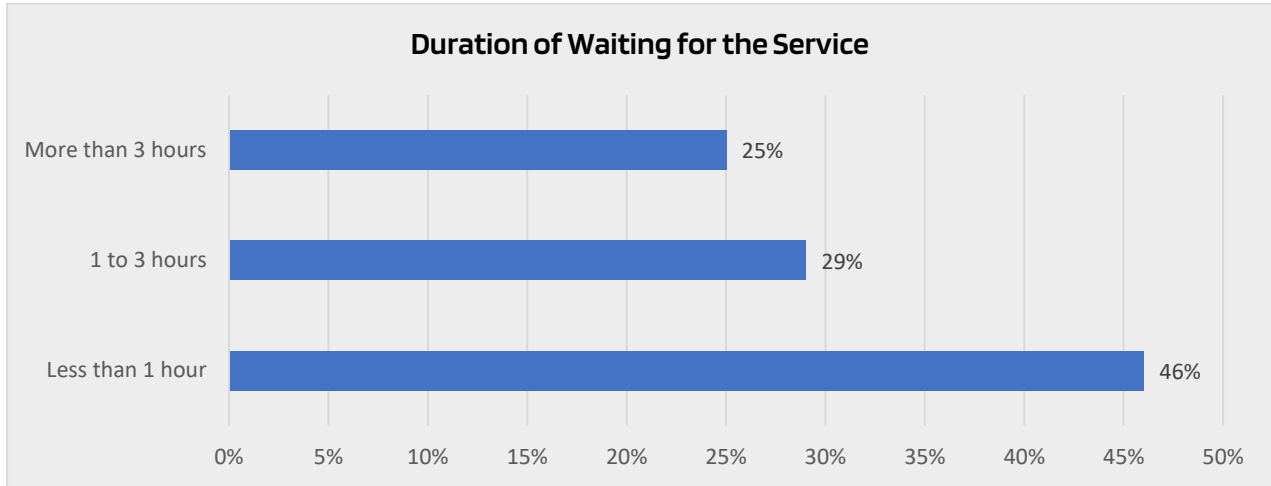
Figure 4. 19: Duration of waiting time to obtain service

4.23. Level of Satisfaction of the Service Delivery

As seen from Figure 4. 20, 73% of the citizens surveyed expressed various levels of satisfaction with the service delivery of the organization.

Level of Satisfaction of the Service Delivery

Category	Percentage
Very Poor	6%
Poor	21%
Average	23%
Good	46%
Excellent	4%
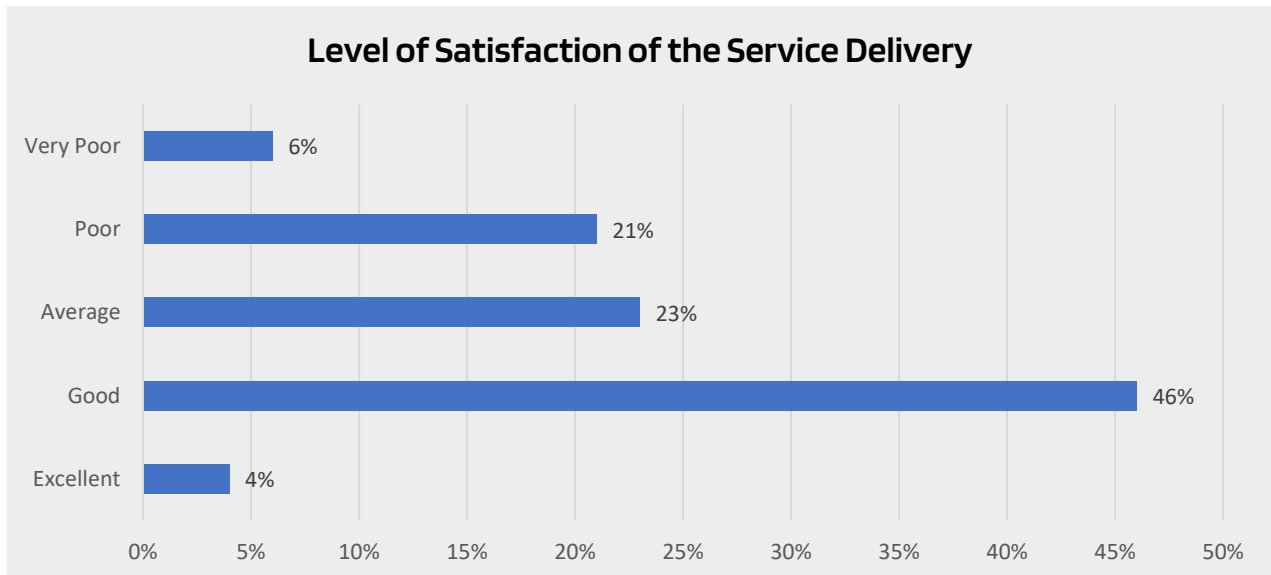
Figure 4. 20: Level of satisfaction of the service delivery

5. FINDINGS OF GOVERNMENT-WIDE EMAIL AND COLLABORAION SOLUTION

Thirty-nine government organizations, representing a broad cross section of the state sector, were visited, interviewed and surveyed to get an in-depth understanding of the current status of using emails for official communication purposes and their readiness to participate in the proposed government-wide email and collaboration solution initiative.

Figure 5. 1: Locations Surveyed for Email and Collaboration Solution
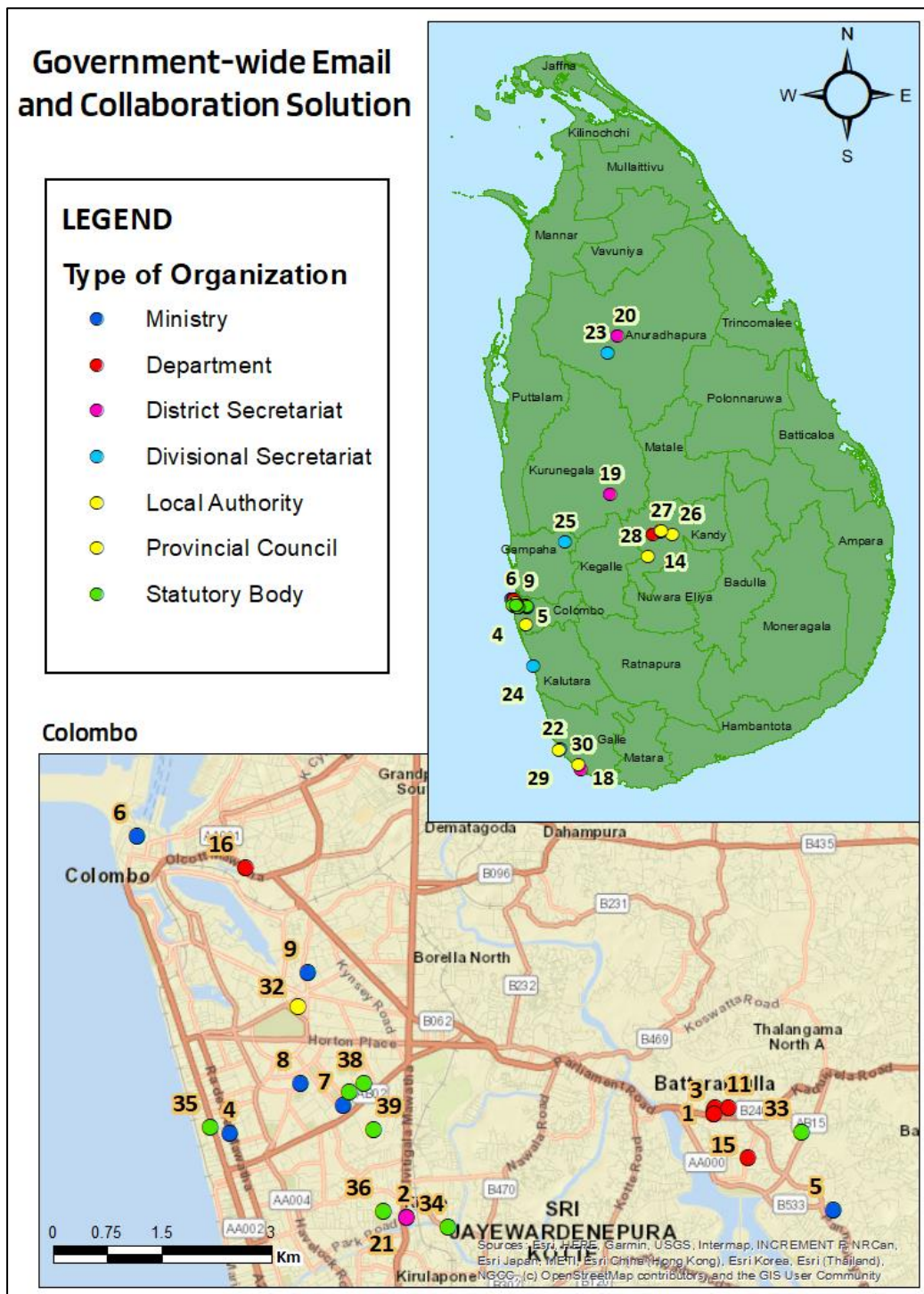
Table 5. 1: Organizations Surveyed for Government-wide Email and Collaboration Solution

Number	Type of Organization	Name of the Organization
1	Ministry	Ministry of Transport
2	Ministry	Ministry of Home Affairs
3	Ministry	State Ministry of Women and Child Development
4	Ministry	Ministry of Trade
5	Ministry	Ministry of Education
6	Ministry	Ministry of Foreign Affairs
7	Ministry	Ministry of Public Affairs, Provincial Councils
8	Ministry	Ministry of Youth and Sports
9	Ministry	Ministry of Health
10	Department	Department of Samurdhi Development
11	Department	Department of Registration of Persons
12	Department	Department of Manpower and Employment
13	Department	Department of Education, Central Province
14	Department	Department of Agriculture, Peradeniya
15	Department	Department of Wildlife Conservation
16	Department	Sri Lanka Police
17	District Secretariat	Kandy District Secretariat
18	District Secretariat	Galle District Secretariat
19	District Secretariat	Kurunegala District Secretariat
20	District Secretariat	Anuradhapura District Secretariat
21	Divisional Secretariat	Thimbirigasyaya Divisional Secretariat
22	Divisional Secretariat	Hikkaduwa Divisional Secretariat
23	Divisional Secretariat	Thalawa Divisional Secretariat
24	Divisional Secretariat	Kalutara Divisional Secretariat
25	Divisional Secretariat	Mirigama Divisional Secretariat
26	Provincial Council	Provincial Council, Central Province
27	Local Authority	Kandy Municipal Council
28	Local Authority	Gampola Urban Council
29	Local Authority	Hikkaduwa Urban Council
30	Provincial Council	Southern Provincial Council
31	Local Authority	Kesbewa Urban Council
32	Local Authority	Colombo Municipal Council
33	Statutory Body	Central Environment Authority
34	Statutory Body	Marine Environmental Protection Authority
35	Statutory Body	Sri Lanka Tea Board
36	Statutory Body	National Transport Commission
37	Statutory Body	National Science Foundation
38	Statutory Body	Disaster Management Center
39	Statutory Body	Sri Lanka CERT

The baseline study conducted one-on-one key informant interviews with the heads of the organization or next available higher officer at the time the study team visited the organization for the survey. In addition, survey team conducted enumerator-assisted questionnaire surveys with IT Administrative officers, selected current email-users and citizens who had come to get services from the organization. Focus of these interview surveys were to understand present status of the use of email and collaboration Solutions for official purposes and their attitudes for the proposed initiative. These organizations include the Government Ministries, Departments, District Secretariats, Divisional Secretariats, Provincial Councils, Local Authorities, and Statutory Bodies.

5.1. Profiles of the Respondents

As seen from Figure 5. 2, of the heads of organizations interviewed, 48% were males while 52% were females. Of the IT Administrators, majority 64% of the respondents were males. As observed during the study, most of the organizations did not have a competent and dedicated IT Admin officer to lead the digital transformation process and the role was handled by various other officers such as Development Officers, Management Assistants or Graduate Trainees. Of the email user officers surveyed, 40% were males and 60% are females.
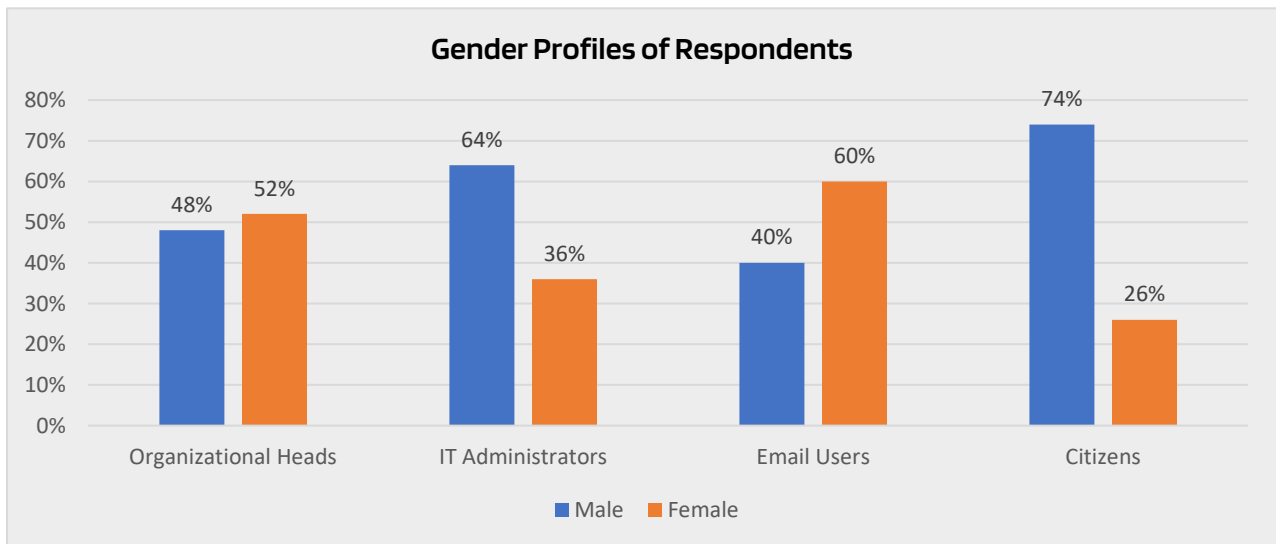
Figure 5. 2: Gender Representation of Surveyed Personals

5.2. Types of Official Communication Methods Used by the Government Organizations

It was observed that the government organizations use numerous communication tools of facilitate their official duties, especially during the pandemic period, when they had to provide essential citizen services while their staff worked from home. Figure 5. 3 presents the different types of communication methods used by the surveyed organizations, especially during lockdown periods. It was observed that 54% of the Organizations used paper-based communications, 36% emails for communication and further 10% used 'WhatsApp' for communications purposes especially during lockdown period.

BASELINE STUDY REPORT
Carrying out Baseline Study and Outcome Evaluation of the World Bank Supported CERC Digital Transformation Projects
to Create Home-based Work Platform, Implemented by ICTA

The types of communications used in by different categories of organizations, also varied widely as shown in Table 5. 2. For example, highest proportion of email communications (63%) were recorded by Statutory Bodies while the lowest proportion of 9% was the by Grama Niladhari Officers, partly because of lack of skills and facilities. However, they have extensively used 'WhatsApp' (35%) to communicate with co-officers and officers of various other organization especially when coordinated and combined efforts were needed to provide essential citizen services. Paper-based communication is the traditional mode of communication where public used when dealing

Figure 5. 3: Types of communication used in Government Organizations

with the government offices. They always received responses too as paper-based letters printed on official letter heads with officer's signature. As seen Provincial Councils, Divisional Secretariats, Local Authorities and District Secretariats use most of the communications (60% or more) through paper-based documents. General public still trusts a signed letter on an organization letter head to an email.

Table 5. 2: Types of communication used in Government Organizations

Organization Type	Paper based communication	Email communication	WhatsApp
Ministries	58%	38%	4%
Departments	39%	46%	14%
District Secretariats	61%	24%	15%
Divisional Secretariats	65%	20%	15%
Provincial Councils	68%	23%	9%
Local Authorities	65%	25%	10%
Statuary Bodies	31%	63%	6%
Grama Niladhari	56%	9%	35%
Average of Total	**54%**	**36%**	**10%**

5.3. Costs Associated with Paper-based Correspondence in the Government Organizations

One of the prime concerns expressed by the heads of the organizations interviewed was the high costs involved in providing paper-based communication and expected a satisfactory alternate solution to reduce the communication costs in government organizations by implementing a Government-Wide Email and Collaboration Solution. When queried, all the organization heads agreed that present paper-based communications method used by the government organizations are costly but traditionally citizens are used to communicate with papers and expect such a document with a signature of the official for it to be legal validity. They unanimously agreed, the use of emails can definitely reduce the organizations' communication costs considering the high costs involved in printing organization letter heads, printing letters, maintaining

mailing registers and at times costs of posting or hand-delivering and cost of maintaining old documents for future use. However, they agree that the organizations will have to make concerted efforts to transform the system and introduce a new culture to adopt digital modes of communication.

Table 5. 3 shows the actual cost expenditure incurred by these surveyed organizations for their stationary and communication related activities. Though actual costs of 2020 and estimated cost for 2021 were collected, consultants decided on using actual 2019 cost for the baseline study since 2020 and 2021 figures do not reflect the actual normal situation as government organizations had restricted their office operations because of pandemic situation. Public too had restrained their usual activities because of the pandemic.

Table 5. 3: Average total expenditure per organization for printing letter heads and communication stationaries in 2019

Organization Type	Actual Cost 2019 (LKR)	Min	Max
Ministries	140,560,013.25	11,871,600.00	404,015,138.00
Departments	19,884,648.40	5,119,735.00	41,000,000.00
District Secretariats	2,400,000.00	2,400,000.00	2,400,000.00
Divisional Secretariats	1,564,145.40	486,651.00	3,432,561.00
Provincial Councils	540,105.00	540,105.00	540,105.00
Local Authorities	18,402,582.75	1,000,000.00	61,765,000.00
Statuary Bodies	7,386,492.00	4,602,723.00	10,758,313.00
Overall	**32,315,851.08**	**486,651.00**	**404,015,138.00**

Note: Colombo Municipal Council (CMC) and Kesbewa Urban Council values were not taken into the calculation of the average value of Local authorities because of extreme outlier values reported.

As observed, the calculated average annual cost incurred by a government organization is around Rs. 32.3 million. The organization category wise values vary very widely as shown in Table 5. 3.

5.4. Maintaining Used Paper Documents for Future Use

The study also found that 83% of the organizations maintain a dedicated record room to store all the used paper documents and copies of letters for future reference (Figure 5. 4). This has become a critical issue since the organizations have to maintain old documents up to 12 years to responds to any public queries raised under the Right to information Act. The organization-wise details are given in Table 5. 4.

Table 5. 4: Availability of Dedicated Record Rooms at different organizations

Organization	Availability (as a percentage of the total organizations surveyed)
Ministries	88%
Departments	100%
District Secretariats	100%
Divisional Secretariat	100%
Provincial Councils	50%
Local Authorities	100%
Statuary Bodies	33%
Average on Total	**83%**
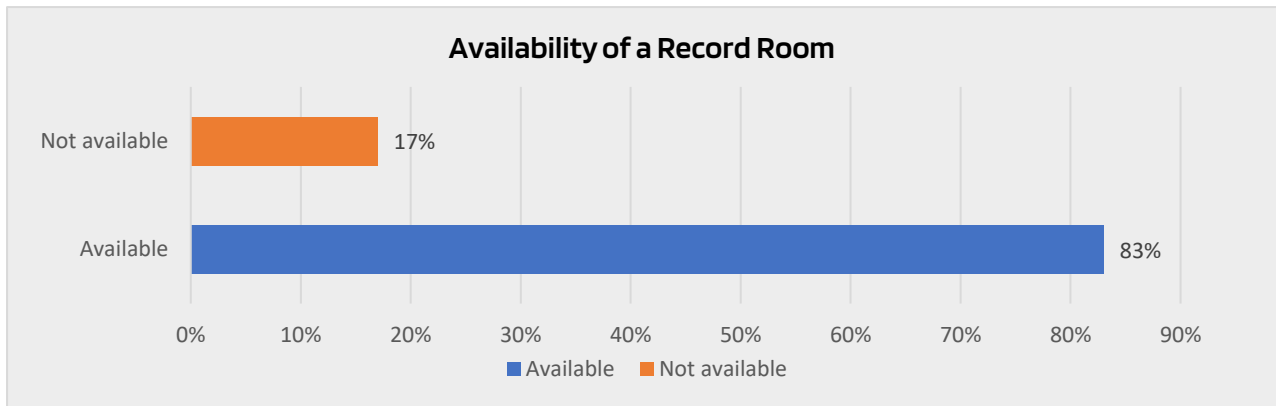
Figure 5. 4: Availability of Record Rooms

5.4.1. Maintenance Cost of the Record Room

Table 5. 5 presents the calculated maintenance cost of the Record Rooms in the Government Organizations. This cost was calculated on the basis of proportion of the floor area of the Record Room compared to the total floor area of the entire office premises and the actual maintenance cost of the entire premises in 2019. This computation is required for comparison for monitoring and evaluation.

Table 5. 5: Average maintenance cost of the entire office for the year of 2019

Organization Type	Actual 2019	Min	Max
Ministries	1,675,000.00	1,675,000.00	1,675,000.00
Departments	2,559,999.50	2,119,999.00	3,000,000.00
District Secretariats	NA	NA	NA
Divisional Secretariats	168,595.50	5,485.00	510,036.00
Provincial Councils	8,385,584.00	8,385,584.00	8,385,584.00
Local Authorities	685,357.50	134,150.00	1,236,565.00
Statuary Bodies	4,395,356.75	2,987,729.82	5,802,983.67
Overall	**2,168,032.79**	**5,485.00**	**8,385,584.00**

Note: Colombo Municipal Council (CMC) and Kesbewa Urban Council values were not taken into the calculation of the average value due to extremely values because of the size.

Table 5. 6: Size of the record room as a percentage of the entire office premises

Organization Type	Size of the Record Room as a Percentage of Entire Premises (%)		
	Average	Min	Max
Ministries	0.7	0.3	1.5
Departments	6.6	1.7	13.0
District Secretariats	1.5	1.0	2.0
Divisional Secretariats	5.7	1.8	10.5
Provincial Councils	3.2	2.9	3.6
Local Authorities	2.7	1.1	5.5
Statuary Bodies	5.7	5.7	5.7
Overall	**3.9**	**0.3**	**13.0**

Table 5. 7: Calculated maintenance cost of Record Rooms

Organization Type	Average size of record room as a percentage of entire premises	Average maintenance cost of entire premises	Cost of maintenance of record room
Ministries	0.7	1,675,000.00	11,725.00
Departments	6.6	2,559,999.50	168,959.97
Divisional Secretariats	5.7	168,595.50	9,609.94
Provincial Councils	3.2	8,385,584.00	268,338.69
Local Authorities	2.7	685,357.50	18,504.65
Statuary Bodies	5.7	4,395,356.75	250,535.33
Overall	**3.9**	**2,168,032.79**	**84,553.28**

5.4.2. Availability of a Dedicated Record Keeping Officer in the Organization

Table 5. 8: Availability of dedicated Record Keeping Officers at organizational wise

Organization	Available (%)
Ministries	38%
Departments	83%
District Secretariats	100%
Divisional Secretariat	100%
Provincial Councils	100%
Local Authorities	80%
Statuary Bodies	33%
Overall	**69%**

As shown in Figure 5. 5, 69% of the surveyed organizations have a dedicated officer to maintain old records and retrieve them whenever a document is needed for reference. Table 5. 8 provides the organizational-wise details of the availability of a dedicated Record Keeping Officers in the government organizations surveyed.
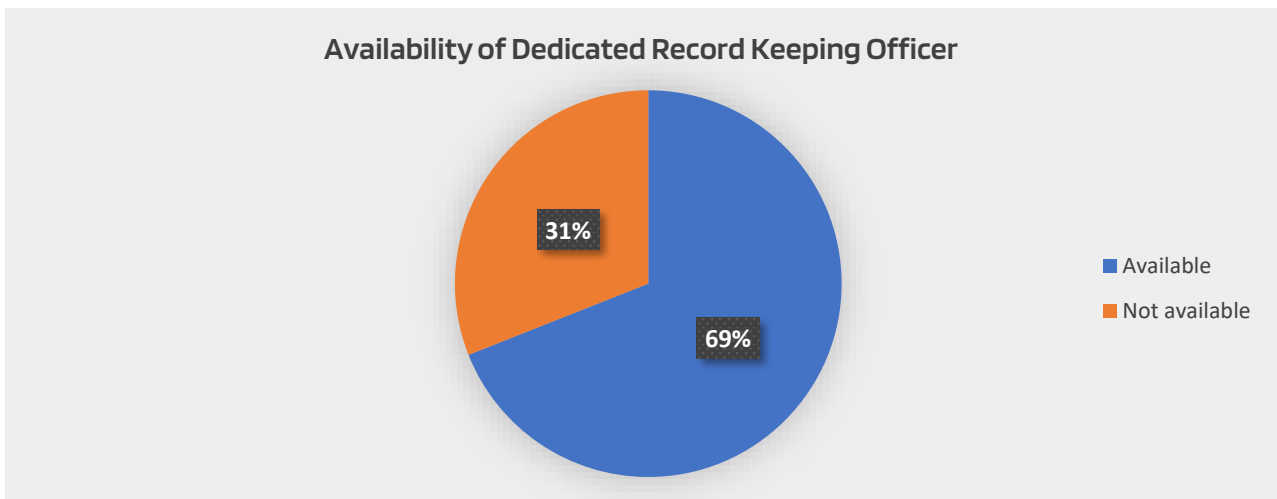
Figure 5. 5: Availability of dedicated Record Keeping Officers in the Government Organizations

5.4.3. Time Taken for the Retrieval of Past Documents from the Record Room

Average number of past documents retrieved per month

Table 5. 9: Number of documents retrieved during last month

Organization Type	Number of past records retrieved per month		
	Average	Min	Max
Ministries	94	0	200
Departments	52	25	100
District Secretariats	37	10	50
Divisional Secretariats	15	5	30
Provincial Councils	10	4	15
Local Authorities	28	0	50
Statuary Bodies	70	1	200
Overall	**45**	**0**	**200**

As observed from Table 5. 9 the surveyed organizations had retrieved an average of 45 documents during the past month from their Record Rooms varying from 10 to 94 documents.

Time taken to retrieve a document from the Record Room

Figure 5. 6 depicts the average time taken to retrieve a document from the Record Room. Around 55% of the time documents had been retrieved immediately, while 21% of the time it has taken less than 6 hours and 14% had taken more than a day. Time taken to retrieve a document depends on number of factors, but generally they are stored in a methodical manner and often handled by a dedicated person.

Time Taken to Retrive a Document from the Record Room

More than a day	14%
Less than 6 hours	21%
Less than 3 hours	3%
Less than an hour	7%
Immediately	55%
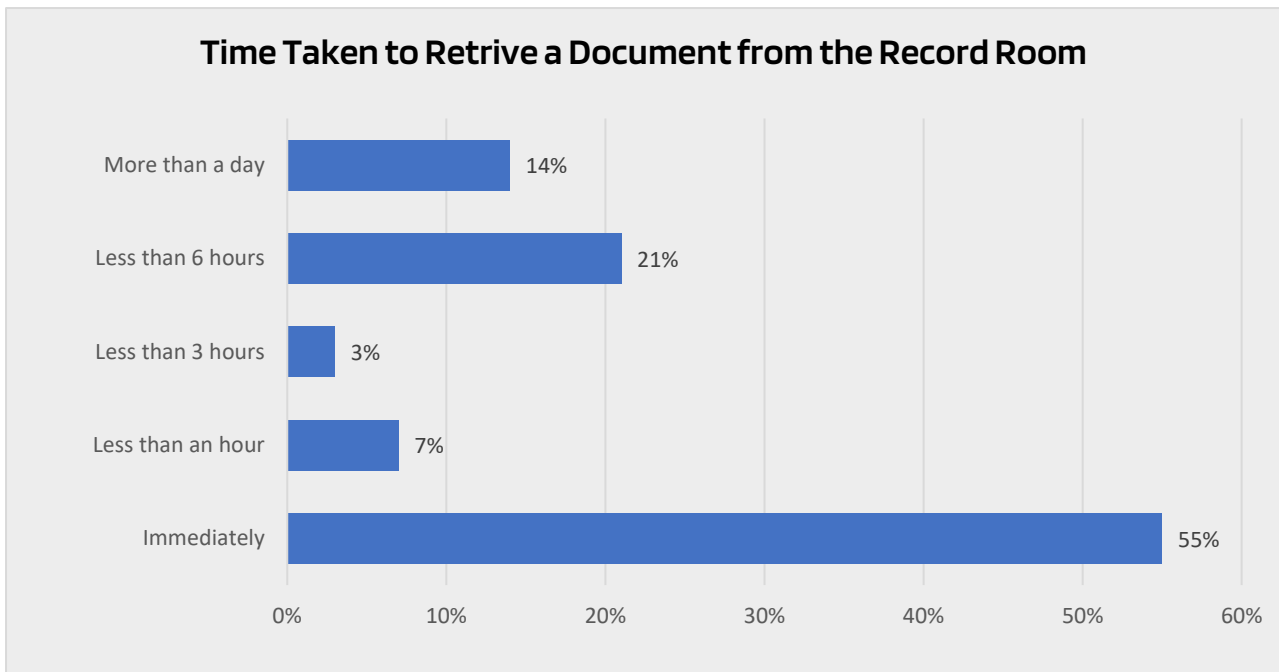
Figure 5. 6: Time taken to retrieve a document

5.5. Number of Letters/Emails Handled (Received and Dispatched) By the Organizations Per Month

Table 5. 10 shows that the "Average" number of letters in paper form received and dispatched by an organization per month and "Average" number of emails received and dispatched by an organization per month. It is observed, that on averages, surveyed organizations had handled more paper-based letters and documents than emails. The average number of paper-based letters received had been 2,884 letters while number of emails received stood as 2,220. Similarly, these organizations had sent on average 1,765 printed letters against 1,261 emails. More details are given in Table 5. 11.

Table 5. 10: Number of letters/emails received and dispatched per month

Type of correspondence	Received per month (No.)			Dispatched per month (No.)		
	Average	Min	Max	Average	Min	Max
Letters	2,884	150	14,000	1,755	0	4,500
Emails	2,220	2	18,055	1,261	0	10,835

Further Table 5. 11 shows the organizational-wise details of paper-based letters received and sent during the month. Accordingly, the District Secretariats have handled the highest volumes of paper-based documents (received 6,333 and sent 2,833). The lowest numbers are by the Provincial Councils.

Table 5. 11: Average number of letters received/dispatched by the organizations per month

Organization Type	No of letters received per month			No of letters dispatched per month		
	Average	Min	Max	Average	Min	Max
Ministries	2,167	1,000	4,000	2,267	1,000	4,000
Departments	3,300	2,600	4,300	2,717	1,850	4,300
District Secretariats	6,333	4,000	8,000	2,833	2,500	3,000
Divisional Secretariats	1,120	350	2,700	645	125	1,200
Provincial Councils	830	160	1,500	825	150	1,500
Local Authorities	1,740	200	4,500	1,330	0	4,500
Statuary Bodies	5,188	150	14,000	2,225	100	4,000
Overall Average/Min/Max	**2,884**	**150**	**14,000**	**1,755**	**0**	**4,500**

Table 5. 12 shows the organization wise details of receipts and dispatches of emails during the month. Accordingly, the District Secretariats had received the highest number of emails (6,967) and also dispatched the highest number (4,028) of emails per month. Lowest use of emails is recorded by the Divisional Secretariats as they deal mostly with the citizens and businesses in the area who are accustomed to paper-based responses from them.

Table 5. 12: Average number of emails received/dispatched by the organizations per month

Organization Type	Number of emails received per month			Number of emails sent per month		
	Average	Min	Max	Average	Min	Max
Ministries	1,212	62	3,000	500	40	1,260
Departments	1,450	60	5,000	783	150	2,000
District Secretariats	6,967	1,500	16,600	4,028	100	10,835
Divisional Secretariats	217	25	400	129	0	300
Provincial Councils	1,025	50	2,000	925	50	1,800
Local Authorities	3,726	2	18,055	2,023	0	10,055
Statuary Bodies	1,969	245	6,000	605	210	1,000
Overall	**2,220**	**2**	**18,055**	**1,261**	**0**	**10,835**

5.6. Availability of email address under gov.lk domain

The Section 4 of the cabinet approved 'Policy and Procedures for ICT usage in Government', (popularly known as e-Government policy of 2010) stipulates how emails are to be used by the government officers for official communication purposes and creation of official email addresses using the domain name gov.lk. Further, each organization was expected to have a common email address in the format 'info@organization.gov.lk' for public communication purposes.

Figure 5. 7 shows the availability of a common email addresses under gov.lk domain and accordingly, 80% of the surveyed organizations have such email addresses for public to communicate.

Table 5. 13 shows the availability of emails under gov.lk domain in among the surveyed organizations. All ministries, government departments and district secretaries have gov.lk email addresses while 20% Divisional Secretariats, 50% Provincial Councils, 80% Local Authorities and 17% Statutory Bodies surveyed do not have gov.lk email address. The common email address under gov.lk domain for public to communicate is managed by IT department and mails are directed to the relevant officers to give their responses.

Table 5. 13: Availability of email address under gov.lk domain

Organization Type	Available
Ministries	100%
Departments	100%
District Secretariats	100%
Divisional Secretariats	80%
Provincial Councils	50%
Local Authorities	20%
Statuary Bodies	83%
Overall	**80%**
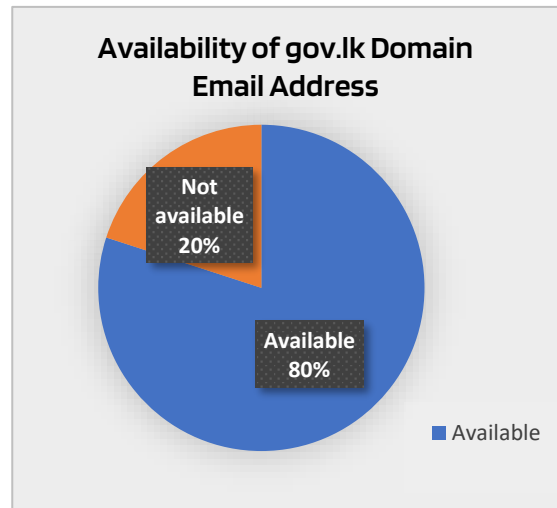
Figure 5. 7: Availability of gov.lk Domain Email Address

On average, 287 emails per month per organization had been received and organization-wise details are given in Table 5. 14.

Table 5. 14: Emails received to common email address per organization per month

Organization Type	Number of emails received per organization per month		
	Average	Min	Max
Ministries	438	150	1,000
Departments	503	5	1,000
District Secretariats	458	75	1,000
Divisional Secretariats	140	30	250
Provincial Councils	50	50	50
Local Authorities	158	0	300
Statuary Bodies	205	10	600
Average of Total	**287**	**0**	**1,000**

5.7. Private Email Addresses Used for Official Communication

As seen from Table 5. 15, on average of 66 officers of the total surveyed use private email addresses for official use. Highest numbers of private email addresses are being used by Local Authorities and the lowest usage is recorded by Statutory Bodies.

Table 5. 15: Usage of private email addresses by the government organizations for official communication

Organization Type	No. of private email addresses used		
	Average	Min	Max
Ministries	75	0	200
Departments	100	0	200
District Secretariats	54	15	100
Divisional Secretariats	31	0	90
Provincial Councils	20	4	35
Local Authorities	152	0	500
Statuary Bodies	8	0	20
Overall average	**66**	**0**	**500**

5.8. Type of Emails Used for Official Communication by the Staff

As indicated by user staff of government organizations in Figure 5. 8, overall use of gov.lk domain emails for official communication is only 10% while 71% uses other commonly available emails. Another 10% indicated that they do not use emails for official communications. Significantly 95% of Grama Niladhari Officers indicated that they do not use emails for official communications.
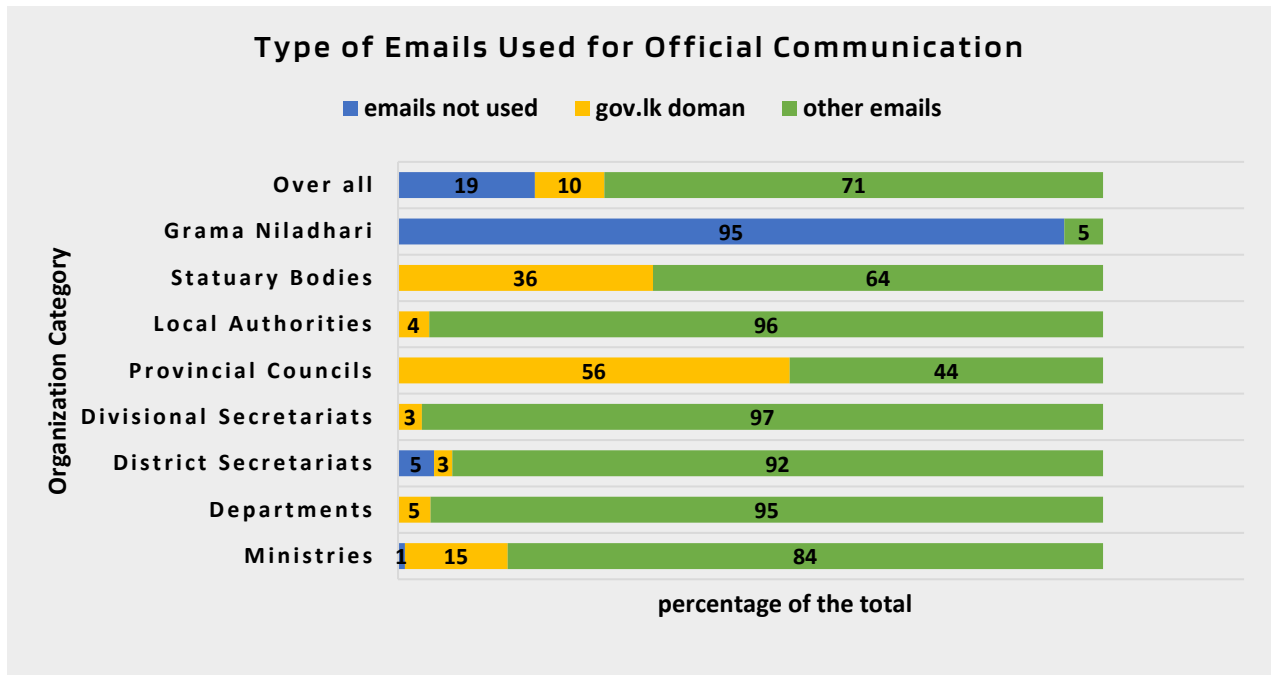
Figure 5. 8: Type of emails used for official communication by the staff

5.9. Use of Emails for Official Communication

Table 5. 16 provides the details of email use for official purposes by the staff of surveyed organizations. As indicted, average number of eligible users per organization is 193. Largest number of eligible users are in Ministries and the lowest is in Provincial Councils.

Table 5. 16: Average number of staff members eligible to use emails

Organization Type	Number of staff eligible to use emails		
	Number of staff members	Min	Max
Ministries	507	20	1,000
Departments	322	5	811
District Secretariats	123	60	250
Divisional Secretariats	36	3	100
Provincial Councils	30	25	35
Local Authorities	226	2	1,000
Statuary Bodies	126	35	252
Overall	**193**	**2**	**1,000**

Table 5. 17 shows the proportions of emails received per day in different languages. Overall, on average of 50% of the daily emails received are in Sinhala, while 2% emails were in Tamil and 49% of emails in English. Highest percentage of emails in Sinhala has been received by the District Secretariats (93%) and while lowest percentage was received by Statutory Bodies (10%). Highest percentage of emails in English is received by the Statutory Bodies and the lowest by District Secretariats. Meanwhile very few emails in Tamil have also been received by the organizations. This data was not available for Government Departments.

Table 5. 17: Average percentage of emails received and sent by language by different organization categories

Organization Type	As a Percentage of Total Email Received (%)			As a Percentage of Total Email Sent (%)		
	Sinhala	Tamil	English	Sinhala	Tamil	English
Ministries	24	4	72	46	0	54
Departments	NA	NA	NA	NA	NA	NA
District Secretariats	93	0	7	94	0	5
Divisional Secretariats	67	0	33	90	0	9
Provincial Councils	41	0	58	54	0	45
Local Authorities	85	1	13	82	1	16
Statuary Bodies	10	2	87	0	0	100
Overall	**50**	**2**	**49**	**68**	**0.3**	**31**

5.10. Frequency of Staff Using Emails for Official Communication

The survey results reveal that 59% of the staff uses emails daily for official communications and others use at different frequencies. Detailed in in Figure 5. 9.
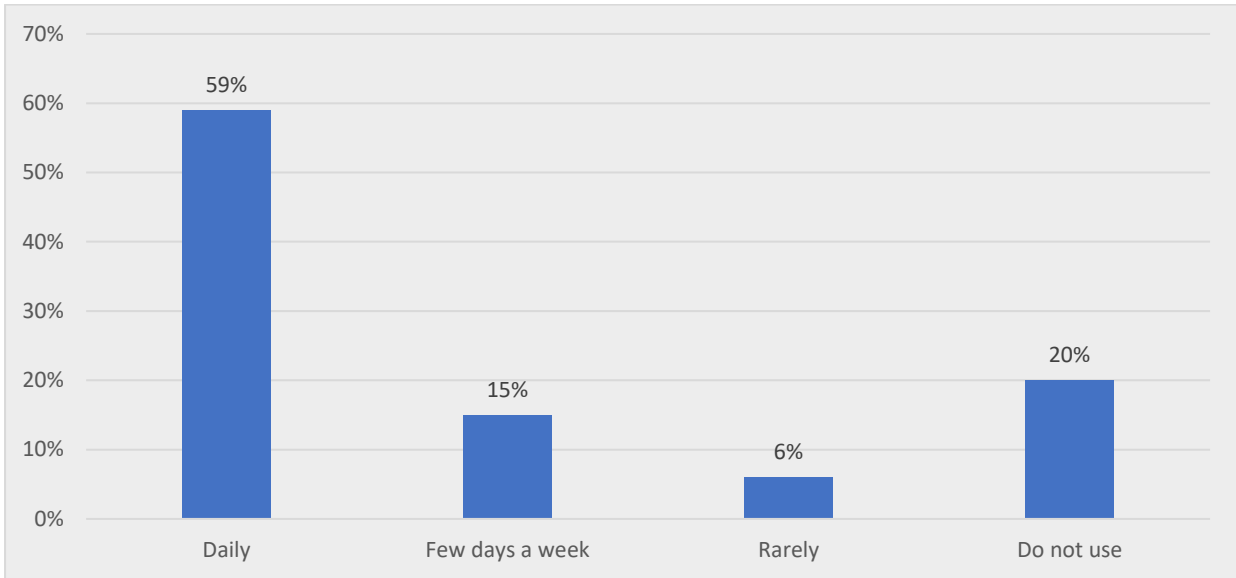
Figure 5. 9: Frequency of using Emails for official work

5.11. Awareness of The Benefits of Using Emails for Official Work

5.11.1. Speedy Communication

As indicated in Figure 5. 10 almost all the users of emails (99%) in the government organizations have confirmed that they are aware that the use of email communications facilitates "speedy communication" at all levels.

5.11.2. Costless Delivery of Communication

As seen from Figure 5. 11, 98% of the email users in the government organizations have expressed that they are aware that the use of email communication is costless to the organization unlike the paper-based communication.

5.11.3. Saving Cost of Stationary

As seen from Figure 5. 12, 98% of the email users surveyed in the government organizations were aware that the use of emails will save the cost on stationary.

5.11.4. Storage Efficiencies of Correspondence

As seen from Figure 5. 13, 98% of the email users in the government organizations were aware that the use of emails will reduce the storage of past correspondence, when they are stored in digital form.

5.11.5. Improved Convenience and Efficiency

As seen from Figure 5. 14, 98% of the email users in the GoSL organizations were aware that the use of emails will certainly improve the efficiency and convenience of communication in the government organizations. It eliminates the cost of making several drafts as experienced in paper-based communication and receiver gets the message immediately.

Figure 5. 10: Awareness of the benefits for official communication – Speedy Communication

Figure 5. 11: Awareness of the benefits costless Delivery of Communication

Figure 5. 12: Awareness of the Benefits Using Emails – Saving Cost of Stationary
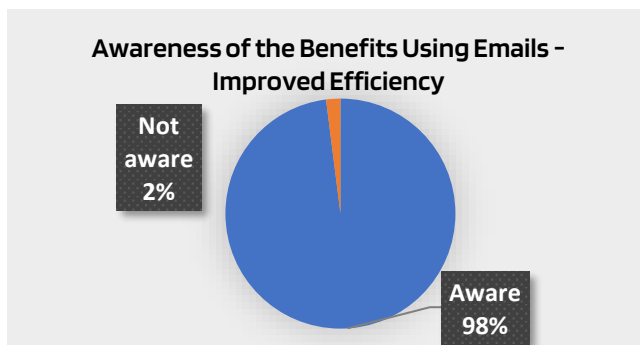
Figure 5. 14: Awareness of the benefits of using emails for official communication – Improved Efficiency and Convenience

Figure 5. 13: Awareness of the benefits using emails – Storage Efficiencies

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5.12. Printing of Emails and Attachments for Filing and Further Action

It was observed that most organizations get a printed hard copy of the emails to maintain paper-based files. Figure 5. 15 depicts the status of this practice adopted in the organizations surveyed. As seen, only 7% of the surveyed organizations do not print any of the emails but the actions are taken using the "Work Flow Management" system or using other methods to handle these communications. Another 19% did not express a clear idea on this matter and the balance organizations are printing all the emails or more than 75%, more than 50% or more than 25% of the emails as indicated in Figure 5. 14.
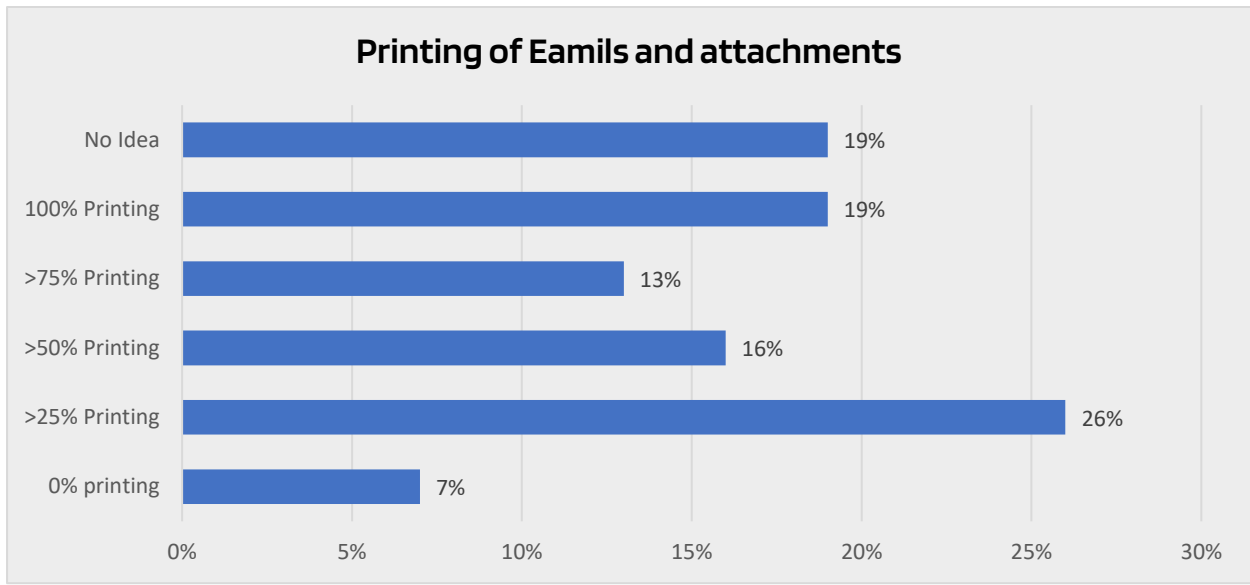
Figure 5. 15: Status of printing emails and attachments for further action

5.13. Availability of an Email Usage Policy for the Organization

As Figure 5. 17, depicts 71% of the organizations do not have a clearly defined organizational policy in place regarding the use of emails for official purposes.

Table 5. 18 presents the organization wise availability of an Email Policy in the organizations as expressed by the user respondents. As observed, 50% of the Ministries and Government Departments,

Table 5. 18: Availability of an Email Policy in the organizations

Organization Type	Available	Not Available
Ministries	50%	50%
Departments	50%	50%
District Secretariats	0%	100%
Divisional Secretariats	20%	80%
Provincial Councils	0%	100%
Local Authorities	20%	80%
Statuary Bodies	17%	83%
Overall	29%	71%

20% Divisional Secretariats and Local Authorities and 17% Statutory Bodies surveyed indicated that they

Figure 5. 16: Availability of an Email Policy for the Organization

have a policy for email usage for official purposes. However, District Secretariats, and Provincial Councils do not have an email usage Policy for the organization.

5.13.1. Type of email usage policy followed by the organizations

In 2010 government of Sri Lanka formulated a national policy for the use of emails for official use under e-Government Policy of 2010. Figure 5. 16 Indicates that 60% of the organizations continues to follow the e-Government Policy while balance 40% of organizations have introduced their own email policies.
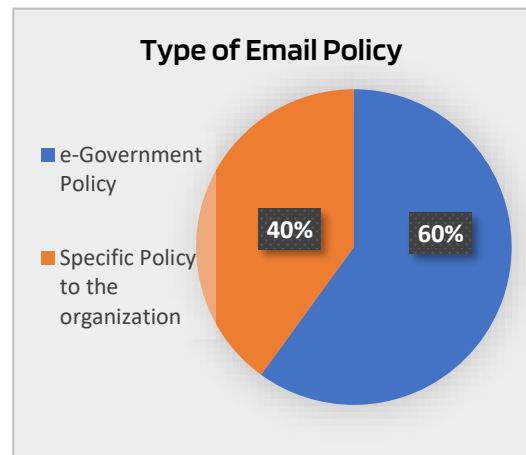
Figure 5. 17: Types of Email Policies of the Organizations

Table 5. 19 provides the organizational wise details of the type of email policies being implemented by them. All Divisional Secretaries, 75% of Ministries and 67% of Government Departments and are following the e-Government Policy. All Local Authorities and Statutory Bodies implement the Email Policies specific to their organizations. Further, this data is not available with District Secretariats and Provincial Councils.

Table 5. 19: Types of email policies in government organization

Organization Type	An email policy adopted in e-Government policy (%)	An email policy specific to the organization
Ministries	75	25
Departments	67	33
District Secretariats	NA	NA
Divisional Secretariats	100	0
Provincial Councils	NA	NA
Local Authorities	0	100
Statuary Bodies	0	100
Overall	**60**	**40**

5.14. Efficiency Level in Obtaining Services for Citizens and Businesses by Using Emails for Communication

As expressed by the heads of organizations interviewed, most of the senior citizens in their administrative areas are not familiar with email communication systems and also majority of them lack required IT skills and facilities to adopt the practice of using emails. However, most of the businesses such as service providers and banks and urban youth tend to communicate with them using emails.

5.14.1. Citizens' level of satisfaction with the paper-based correspondence currently received from the state organizations

Figure 5. 18 depicts the level of satisfaction of the citizens on the use of paper-based correspondence currently practiced by the government organizations. Majority 68% citizen surveyed are satisfied (Highly Satisfied + Satisfied + Moderately Satisfied) with the paper-based correspondence received from the government organizations. They consider a letter on a official letter head with the officers signature has a better legal recognition.
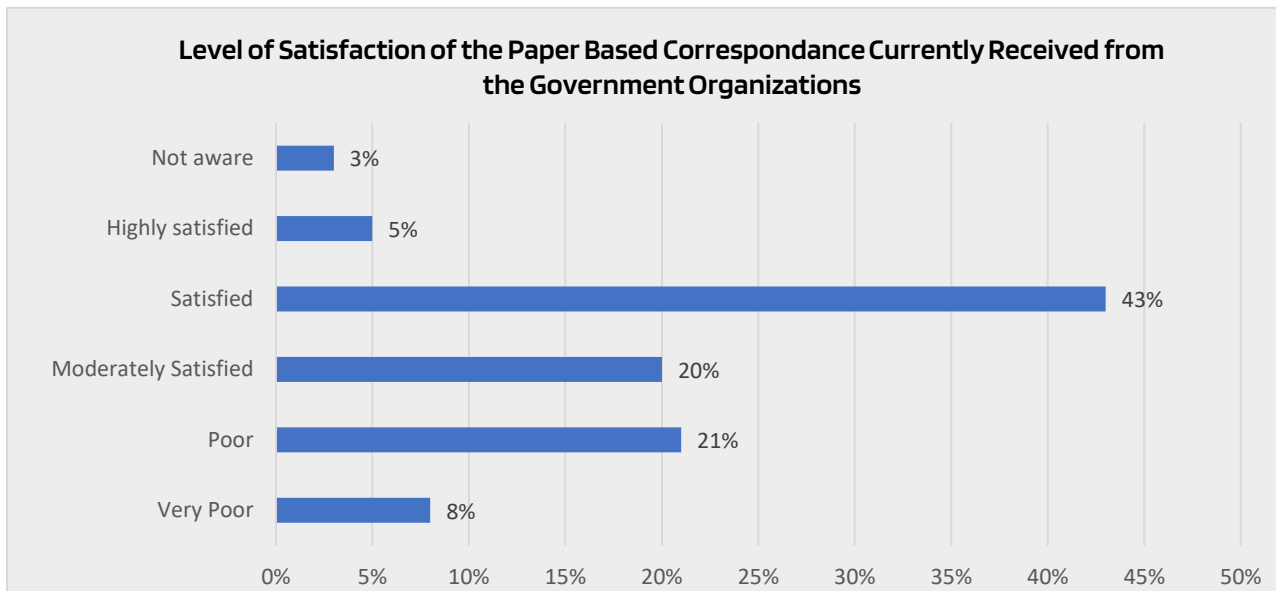
Figure 5. 18: Level of satisfaction of the paper-based correspondence currently receive from the government organization

Table 5. 20 presents the details of level of satisfaction related to the quality of delivery, timeliness, reliability and convenience of communication delivery to the citizens.

Table 5. 20: Level of satisfaction related to quality of delivery of communication to the citizens

Criteria	Very Poor	Poor	Moderately Satisfied	Satisfied	Highly satisfied	Not aware
Quality of Delivery	5%	11%	23%	54%	2%	5%
Timely delivery	14%	33%	23%	28%	0%	2%
Reliability of delivery	2%	12%	16%	52%	14%	4%
Convenience to citizen	9%	28%	19%	40%	3%	1%

5.14.2. Citizen communicating with government organizations using emails

Figure 5. 19 shows responses received by the surveyed citizens regarding the use of emails to communicate with government organizations. It was found that only 17% of the citizens have communicated with government organizations using emails.

5.14.3. Acceptance of email correspondence from the government organizations

Figure 5. 20 shows the citizens' level of acceptance of the email correspondence sent the government organizations. Around 62% citizens surveyed said they accept emails from the government organizations. However, 15% accept the emails sent from the government organization after the verification from the sender.

5.14.4. Knowledge of the citizen to communicate using an email

Figure 5. 21 shows the knowledge of citizens to communicate using emails. Around 70% of the surveyed acknowledge that they have the knowledge to use emails for communication.

5.14.5. Availability of facilities for citizen to communicate in email

Figure 5. 22 shows the availability of the tools and facilities such as computers and internet for citizens to communicate using emails, and according to the survey findings, 80% of them are equipped with facilities to communicate using emails.

Figure 5. 19: Status of citizen communicating with government organizations using emails

Figure 5. 20: Acceptance of emails from government organizations

Figure 5. 22: Availability of knowledge to communicate in emails

Figure 5. 21: Availability of knowledge to communicate in emails

5.14.6. Availability of email account for the citizen to communicate using emails

Figure 5. 23 shows the status of the availability of the email accounts among the surveyed citizens and accordingly 68% of them already have email accounts.
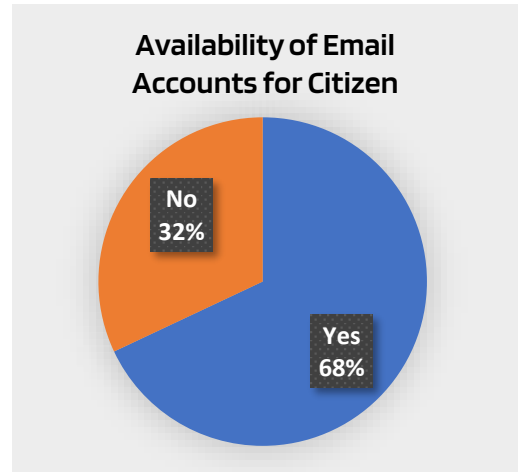
5.15. Convenience of Using Emails to Obtain Services

As given in Figure 5. 24, 47% has expressed that communicating with government organization using emails is convenient. However, 12% has expressed that there is no specific convenience in using emails.

5.16. Satisfaction Level of the Staff with The Facilities Provided by Government to Use Emails

As expressed by 57% the heads of the organizations, staff who are using emails are satisfied with the convenience of using emails for official communication, compared to using printed documents. Most of the required officers are provided with facilities to use emails even during lockdown periods to work from home. However, around 43% confirmed that the facilities in their offices are inadequate and some 13% indicated that their staff used their personal equipment and facilities to communicate through emails during lockdown period when work-from-home was implemented.

5.17. Ability to Work from Anywhere Using Government Email and Collaboration Tools

Many government officers have used emails to communicate with each other when they had to work from home during lockdowns according to the organization heads. Apart from that, they have used video communications, SMSs, telephones to contact each other. They have also used 'WhatsApp' service extensively by creating groups to keep everyone informed about the decisions taken by the organization.

5.18. Speed in Decision-Making Process

The heads of the organizations interviewed were also convinced that emails provide a speedy mode of communication where it could be delivered directly to the officer concerned to get a prompt response. However, some complained that often officers have to be reminded over phone to check the email, since the use of email culture is not well established in these organizations.

Figure 5. 23: Availability of email accounts for citizen

Figure 5. 24: Level of convenience to citizen due to the use of emails

Though emails deliver the message speedily to help the decision-making process, several others consultative processes are also involved before making final decisions. Hence, speedy decision-making process cannot be guaranteed by only by providing efficient email service alone.

5.19. Adopt Government Email Communication Instead of Paper-Based Communication

Majority of the heads of the organizations interviewed agreed that using a single authorized and dedicated government email and collaboration solutions will enhance the working efficiency and G2G communication while some organization are compelled to have G2C communications using printed documents because of poor IT literacy, skills and lack of facilities. However, in urban areas and among the younger generation, where IT literacy is high, email communication can be adopted easily. Organizations dealing with rural communities, for example, Department of Samadhi which has 200 Offices Island wide and around 27,000 officers dealing mostly with rural communities, are bound to use paper-based responses.

It was confirmed by almost 100% of the organizational heads interviewed that they use emails to communicate with other government organizations and for internal communication at present. Often, progress reports, monthly reports, project progress reports, meeting minutes, invitation to meetings, are sent by email while government circulations, instructions, are received by email. Official memos and letters are mostly circulated internally through emails.

5.20. Implementation of best practices in the email usage by the organizations

5.20.1. Number of security related incidents during the last year

Table 5. 21 presents the details of security related incidents reported during last year in their organizations. Types of incidents include hacking, malware, spam and unauthorized access.

5.20.2. Maintenance of security and incident management process:

Figure 5. 25 shows the maintenance status of security and incident management process in the organizations as reported by IT Administrators of the surveyed organizations. As seen, only 11% of organizations have introduced security and incident management process while 43% are do not have any and another 46% are not aware of this security and incident management process.

Table 5. 22 Shows the organization-wise status of maintenance of security and incident management systems. A salient feature is that 43% organizations do not have maintenance of security and incident management process and 46% organization are not aware of such process.

Table 5. 21: Number of email security related incidents reported during the last year

Organization Type	Number of Organizations	Number of occurrences
Ministries	8	1
Departments	7	1
District Secretariats	4	2
Divisional Secretariats	5	0
Provincial Councils	2	0
Local Authorities	6	2
Statuary Bodies	5	1
Overall	**37**	**7**

Maintenance of a Security and Incident Management Process

Not aware 46%
No 43%
Yes 11%

Figure 5. 25: Status of maintenance of the security and incident management process

Table 5. 22: Status of maintenance of security and incident process

Organization Type	Yes	No	Not aware
Ministries	0%	25%	75%
Departments	29%	14%	57%
District Secretariats	0%	75%	25%
Divisional Secretariats	20%	60%	20%
Provincial Councils	0%	50%	50%
Local Authorities	0%	83%	17%
Statuary Bodies	20%	20%	60%
Overall	**11%**	**43%**	**46%**

5.21. Level of satisfaction on security of the current email solutions used by the officials

Figure 5. 26 shows the level of user satisfaction regarding the security of the current email solutions used by them. Overall, 84% of the surveyed organizations are satisfied with the current level of security of the email solutions used by them. It may also possible that majority of them do not have a clear understanding of such issues since they have not experienced them. Table 5. 23 Shows the organization-wise levels of satisfaction regarding the security of the current email solutions used by them.

Level of Satisfaction with the Security of the Current Email Solutions

Excellent 14%
Good 38%
Average 32%
Poor 5%
Very Poor 11%
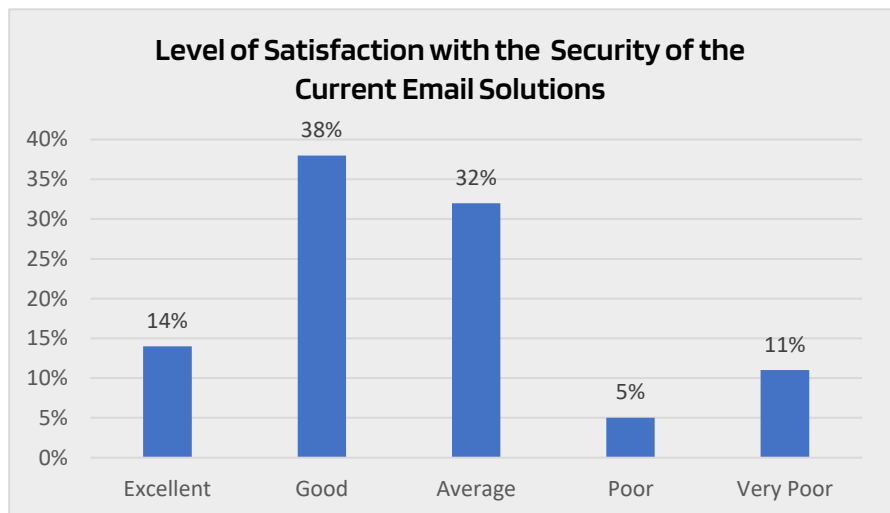
Figure 5. 26: Level of satisfaction with the security of the current email solution

Table 5. 23: Organization wise satisfaction on security of the current email solutions

Organization Type	Excellent	Good	Average	Poor	Very poor
Ministries	13%	50%	38%	0%	0%
Departments	29%	0%	43%	14%	14%
District Secretariats	0%	100%	0%	0%	0%
Divisional Secretariat	20%	60%	20%	0%	0%
Provincial Councils	0%	50%	0%	0%	50%
Local Authorities	17%	0%	50%	17%	17%
Statuary Bodies	0%	40%	40%	0%	20%
Total	**14%**	**38%**	**32%**	**5%**	**11%**

5.22. Attitudes Towards the Use of Email and Collaboration Solutions for Official Communication

The IT Administrators have expressed the general attitude prevails among the staff towards the following attributes.

1. Convenience by carry out day-to-day official work with the use of an official email,
2. Ability to receive quick responses for decision making, through emails to improve work efficiency.
3. Considerable reduction in communication time-sending and receiving messages
4. Reduction in communication costs with minimized use of a paper-based communication.

The attitudes of the staff on the above attributes are presented in the Table 5. 24. Accordingly, 65% of the IT Administrators are of the view that the staff is positive about all the above attributes of email communication. Some are in favor of less than four attributes above. Details are shown in Table 5. 25.

The IT Administrators have also expressed that even though the official email addresses and other related facilities are provided there may be other bottlenecks that could impede the adoption of new email solution. These include:

1. Negative attitude of some officials who would not have the opportunity to use an official government email address official communication,
2. Lack of computer skills, required literacy or equipment to use government email solution for official communication,
3. Fear of hacking the email account or losing the vital documents,
4. Limited capacity in working with computers,
5. Difficulty in managing archives securely, compared to paper-based communication,
6. Breakdown of email system at times- availability issues
7. Receipt of unwanted emails (spams, business promotions),

The following Table 5. 25 presents responses received for the expected bottlenecks mentioned above, as perceived by the IT Administrators of the surveyed organizations.

As seen, 23% of the respondents have not responded to this query, whilst 19% are of the view that bottleneck nos. 1, 2, 3, 4, 5 and 7 can have an impact on the members of staff who will use of government email system.

Table 5. 24: Attitudes of the staff on email and collaboration solutions

Attributes	Percentage
1	2%
1, 2, 3	5%
1, 2, 3, 4	65%
1, 3	3%
1, 3, 4	8%
1, 4	8%
3	3%
4	3%
Not answered	3%
Total	**100%**

Table 5. 25: Expected bottlenecks that can have an impact on the staff who will use the government email and collaboration solutions

Attributes	Percentage
1	3%
1, 2	5%
1, 2, 3, 4, 5, 7	19%
1, 2, 3, 4, 6	3%
1, 2, 4, 5, 6	5%
1, 2, 4, 6	5%
1, 2, 4, 6, 7	3%
1, 2, 5, 6	3%
1, 2, 6	3%
1, 4, 5	3%
2, 4, 7	3%
2, 6, 7	3%
3, 5, 7	3%
3, 7	3%
4	3%
4, 6	5%
5, 7	5%
Not answered	23%
Total	**100%**

5.23. User confidence in using the proposed government email and collaboration solution

Figure 5. 27 presents the various levels of confidence expressed by current email users towards adapting the proposed new email and collaboration solution. As seen 71% of the current users surveyed are confident of adopting the proposed email solution once it is implemented. However, 14% were of the view that they cannot express any opinion yet as they are not aware of the full technical details of the proposed email solution.
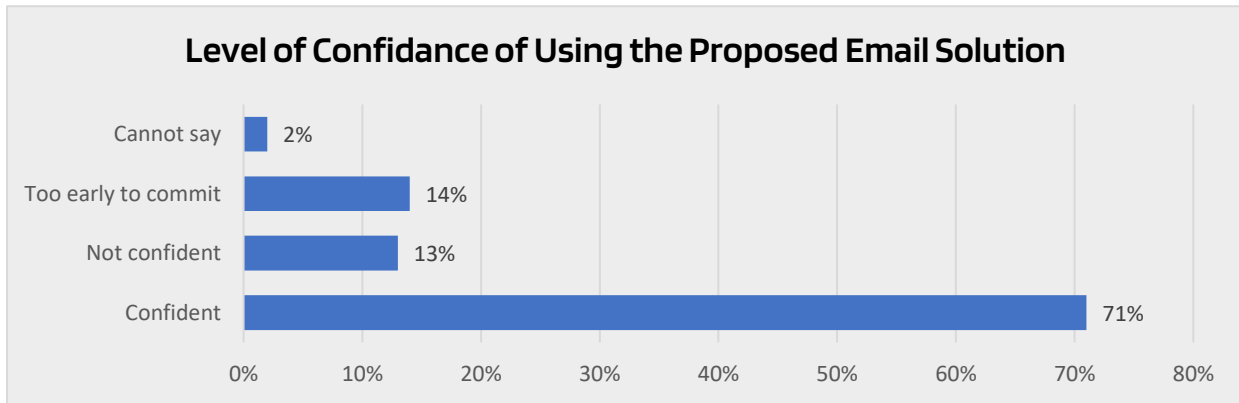
Figure 5. 27: Level of confidence of using proposed email solution

5.24. Electronic Transaction Act No 19 of 2006

This is an important piece of legislation that made provisions to the effective use of e-signature in electronic document including emails. Around 74% accepted the importance of e-signature to establish the proper authenticity, validity and recognition to government emails and the attached documents. Some of the organizations are already implementing this while around 26% acknowledged that their knowledge is limited.
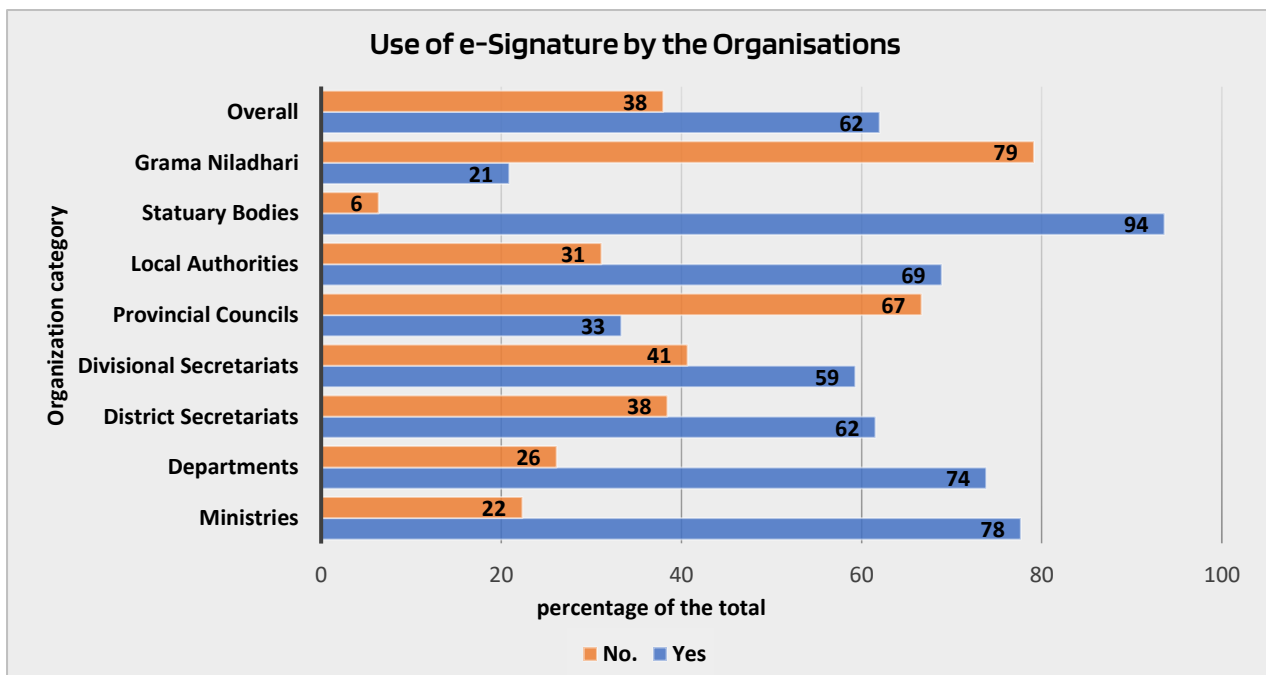
Figure 5. 28: Use of eSignature by the Government Organizations

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5.25. Some Concerns and Negative Reponses Anticipated by Heads of Organizations During Implementation of Government email solutions

The heads of the organizations interviewed were asked about possible negative responses and concerns anticipated from the staff and the public when government wide email solution is implemented.

At least 45% of them expect negative attitudinal problems to arise from the staff when mode of communication is to be changed from paper-based to electronic emails system. Also, around 22% highlighted the skill gaps existing at present among the staff to transform communication system to email.

Also, 30% has express that since most officials used to manage paper-based archives they may find it difficult to manage the email archives in a systematic and efficient manner for future reference. Also, some 26% have concerns about 'high availability' of the system and 43% is concerned about possible security threats like 'hacking'.

6. EXPANSION OF LGC 2.0 AND ESTABLISHMENT OF DISASTER RECOVERY SITE

The baseline study was undertaken to assess the present situation of the operations of LGC 2.0 and establish relevant baseline indicator values for monitoring the progress and measure the outcomes of the implemented initiatives later on. Considering the different categories of government organizations hosting various types of applications a representative sample was selected to conduct a baseline survey.
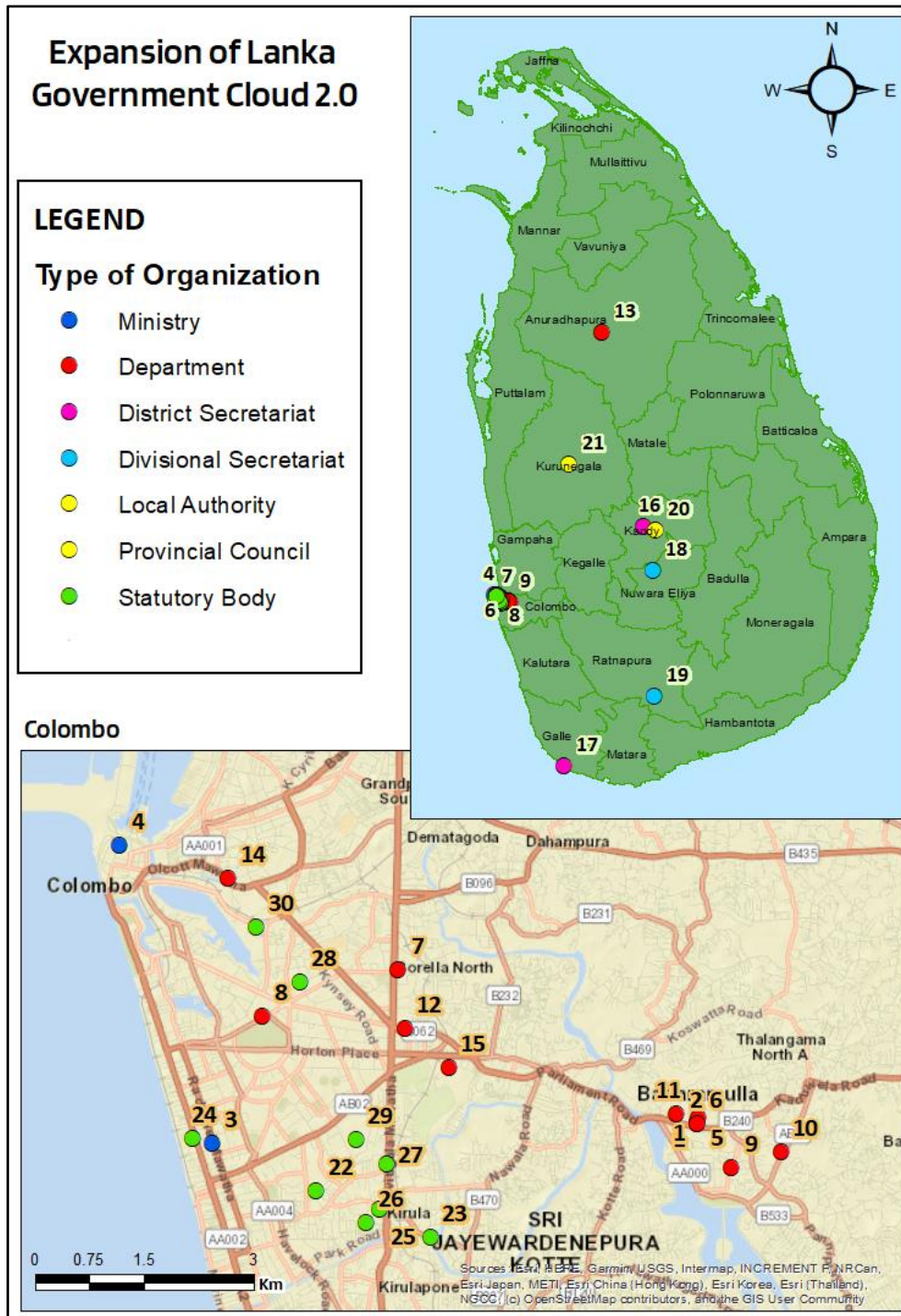
Figure 6. 1: Locations of organizations visited for LGC 2.0 Expansion

Table 6. 1. Organizations Visited for LGC 2.0 Expansion

Number	Type of Organization	Name of the Organization
1	Ministry	Ministry of Transport
2	Ministry	Ministry of Women and Child Development
3	Ministry	Ministry of Trade
4	Ministry	Ministry of Foreign Affairs
5	Department	Department of Samurdhi Development
6	Department	Department of Manpower and Employment
7	Department	Department of Prisons
8	Department	Primary Healthcare System Strengthening Project, MoH
9	Department	Department of Wildlife Conservation
10	Department	Registrar General's Department
11	Department	Department of Census and Statistics
12	Department	Department of Community Based Corrections
13	Department	Teaching Hospital Anuradhapura
14	Department	Sri Lanka Police
15	Department	Castle Hospital for Women
16	District Secretariat	Kandy District Secretariat
17	District Secretariat	Galle District Secretariat
18	Divisional Secretariat	Kotmale Divisional Secretariat
19	Divisional Secretariat	Kolonna Divisional Secretariat
20	Provincial Council	Provincial Council, Central Province
21	Local Authority	Wariyapola Pradeshiya Sabha
22	Statutory Body	Shrama Vasana Fund
23	Statutory Body	Marine Environmental Protection Authority
24	Statutory Body	Sri Lanka Tea Board
25	Statutory Body	Employee Trust Fund Board
26	Statutory Body	National Transport Commission
27	Statutory Body	Tertiary and Vocational Education Commission
28	Statutory Body	National Medicines Regulatory Authority
29	Statutory Body	Sri Lanka CERT	CC
30	Statutory Body	National Intellectual Property Office

For the Baseline Study data collection, two types of tools were used. Key informant interviews with the Head of the organization and semi-structured questionnaire survey with the chief IT administrator of the organization. While most of the interviews were conducted face-to-face, adhering to the strict health guidelines issued by the Ministry of health, few online interviews were conducted at the request of the participating organizations. Also, in one instance, several senior officers participated as a Focused Group discussion.

6.1. Profile of the Respondents
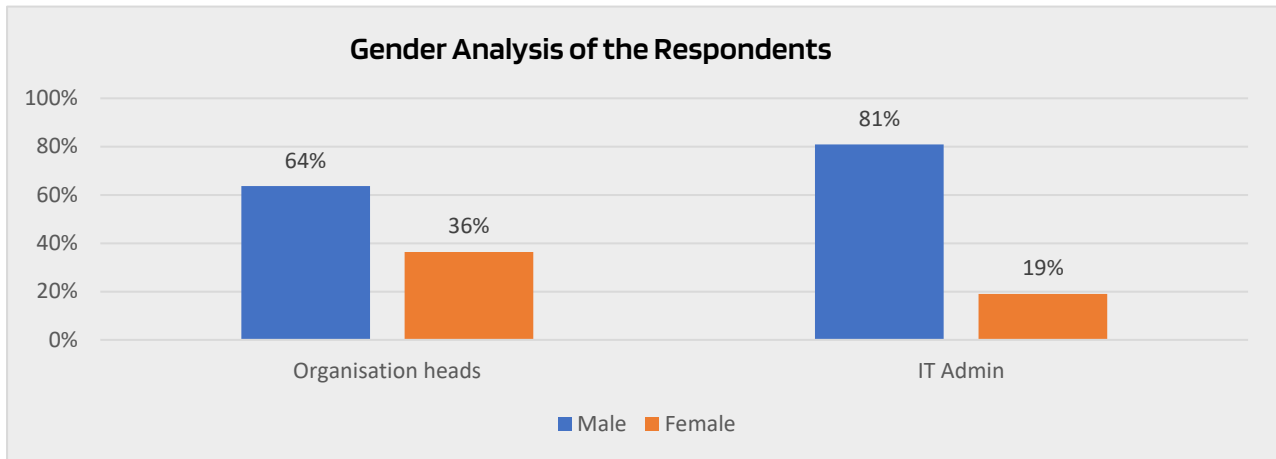
Figure 6. 2: Gender profile of the Respondents

As Figure 6. 2 shows majority 64% and 81% of the responding organizational heads and IT Administrators were males. Often, the interviews were held with the head of the organization or next-in-command available at the time when the survey team visited the organization.

6.2. Maintenance of LGC Hosted Applications of the Organization

It was observed that as much as 26% of the government organizations surveyed has outsourced their maintenance and operations of LGC related activities to outside IT service providers, often to the vendors who had developed and hosted the application in LGC. This had often happened when the organization could not recruit a suitably qualified and experienced person to the organization due to administrative and financial constraints. Hence, the officials of such organizations did not have an in-depth understanding of the quality of operations of the applications hosted in LGC.

6.3. Level of Satisfaction with the Overall Services Offered by LGC Management

A query was made to assess the level of organizational satisfaction with the overall efficiency of services provided by LGC management. It was observed that some organizations have hosted multiple applications while most of them had only the organization website hosted in LGC. From the Figure 6. 3, it is clear that almost 40% of the organizations are not satisfied with the present service quality of LGC and only 30% had expressed satisfaction with LGC services. Around 30% could not

Figure 6. 3: Level of satisfaction with the services offered by LGC management

express an opinion since they do not directly handle with LGC operations but work through an outsourced party.

6.4. Use of In-House Servers to Store Data and Applications
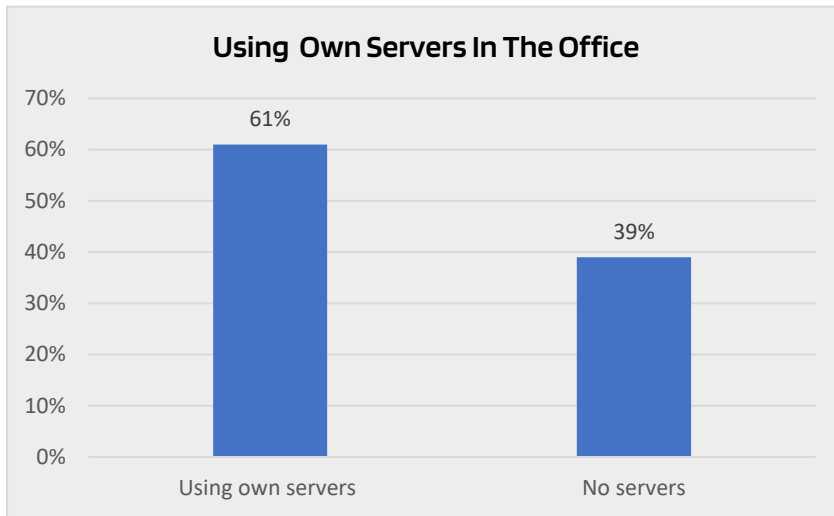
Figure 6. 4: Use of in-house Severs

One of the objectives of establishing LGC 2.0 was to reduce government costs of operating/maintaining individual data centers or server rooms in government organizations and eliminate the operating and maintenance costs of such facilities. However, Figure 6. 4 shows that 60% of the organizations still maintain their own servers while hosting some applications in LGC 2.0.

Some of the reasons given for maintaining own servers are:

- Organizations maintained these servers prior to the establishment of LGC and hence, they continued to use them.
- To store sensitive and valuable data since LGC 2.0 has no disaster recovery mechanism.
- To ensure uninterrupted 24x7 availability (LGC 2.0 is unreliable)
- To ensure 24X7 availability internationally.
- To store confidential information.

6.5. High Availability of the Service
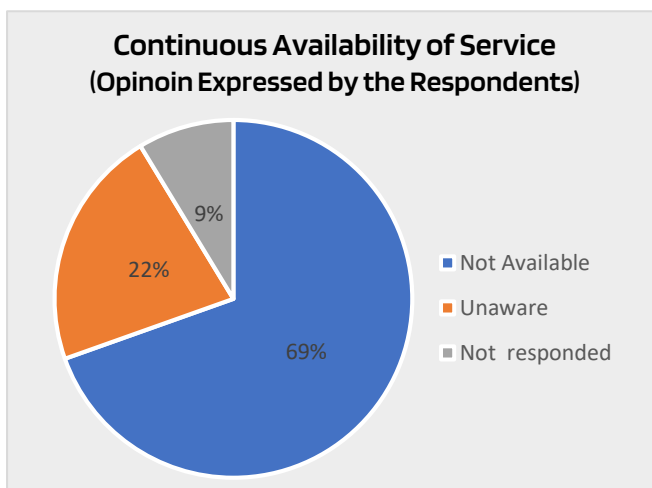
Figure 6. 5: Availability of the service

The organizations expect LGC to provide 99.99% availability of their systems and data hosted in LGC 2.0. However, as expressed by the organization, 69% complained about breakdowns of service. In some instances, this breakdown of services had caused much embarrassment to the organization that provide vital citizens' services on daily basis to around 700 persons. As a result, the organization has shifted their application to a private cloud. Organizations were unable to provide any statistics regarding these breakdowns and service interruptions but this is causing problems to most organizations.

6.6. Data Security

Data security is important when it comes to handling sensitive and confidential information of national interest. A seen from Figure 6. 9, majority 70% has expressed their satisfaction regarding data security and reliability since LGC is a dedicated government control Cloud infrastructure. However, few organizations (13%) have expressed their concerns based on the recent incidents related to information/data loss from an organization that has hosted data hosted LGC. Also, another organization mentioned about an attempted hacking incident of their application hosted in LGC, which is being currently investigated by the Police.

Data security (Opinoin expressed by the respondents)

- Satisfied
- Not satisfied
- Unaware
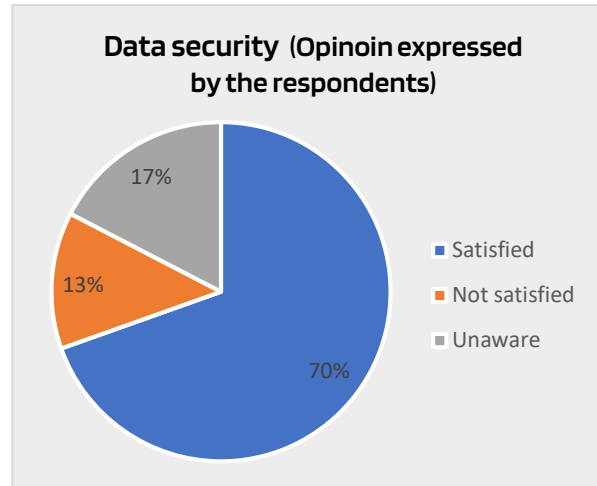
Figure 6. 6: Data Security

6.7. Quality of Help Desk support

Majority of the organizations (70%) were not satisfied with the complaint handling mechanism available at LGC available at present. They expect a proper ticketing system in place to record the complaint and solve it with the submission of an investigation report. Since majority of the Organizations does not have IT experts, they heavily depend on ICTA to resolve their problems. They also expect a dedicated person to contact and a hotline to make their complaints. They expect to confirm and include this in the MOU and ensure its 24x7 availability.

Adequacy of Help Desk Support % (Opinoin expressed by the respondents)

- Not adequate
- Unaware
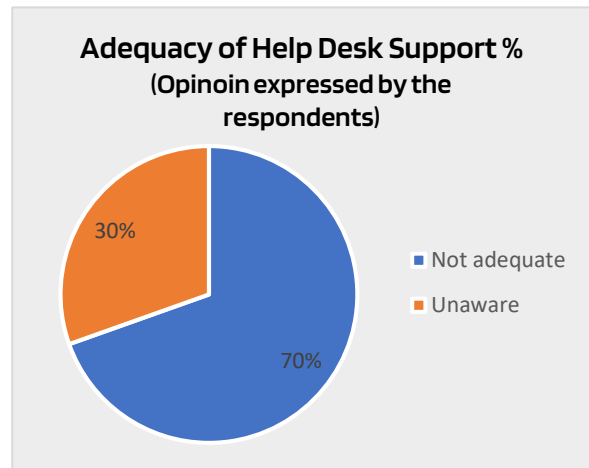
Figure 6. 7: Quality of Help Desk support

6.8. Cost saving to the Organization

Majority acknowledged the cost saving to the organization because of free hosting of their application in LGC. However, some respondents were not very clear about the cost that they would have to spend if they use a private cloud facility for hosting the application. Few organizations were able to value of service depending on the applications hosted in LGC. However, some organization with knowledgeable IT experts valued services offered by LGC up to Rs. 25 million. However, web hosting would cost around Rs. 20,000per year.

Cost saving to the Organisation
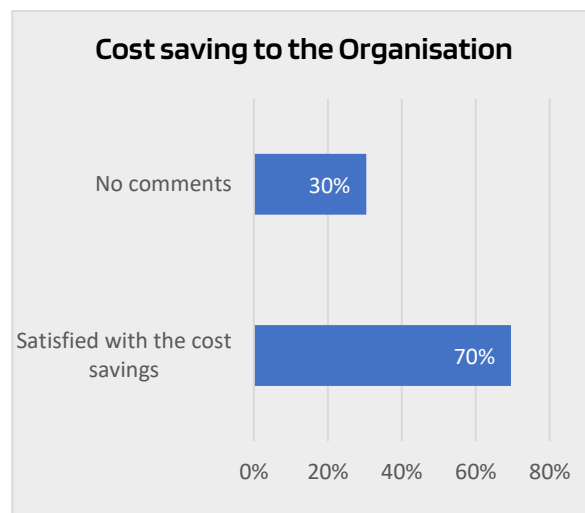
Figure 6. 8: Cost saving to the Organization

6.9. Applications hosted in other Clouds
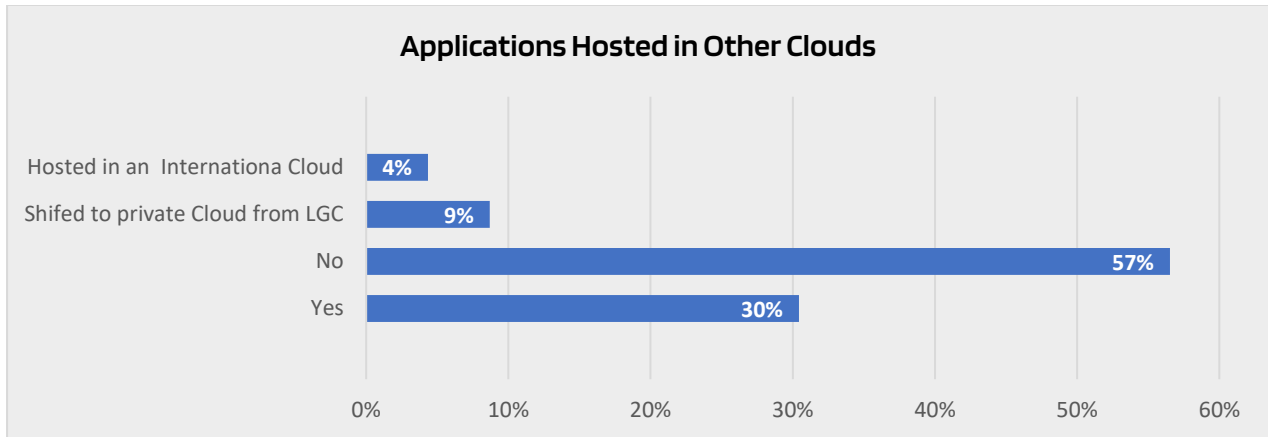
Figure 6. 9: Applications hosted in other Clouds

As seen from Figure 6. 9, around 30% of the surveyed organizations have reported that some of their applications were hosted in different private clouds due to various reasons such as LGC breakdowns, non-availability of a backup etc. One organization has hosted in a private cloud since they get this facility free-of-charge. One organization explained that they have a mandatory requirement to host their application in the world head office where 24X7 availably is required. Another two organizations have shifted their applications to a private cloud because of service disruptions experienced in LGC 2.0. It was also observed that, often when organizations hire private IT companies to develop their websites and other software and applications and expect them to maintain them, they usually host the applications in clouds selected by them without coming to LGC.

6.10. Organizations Planning to Host Applications in the Future
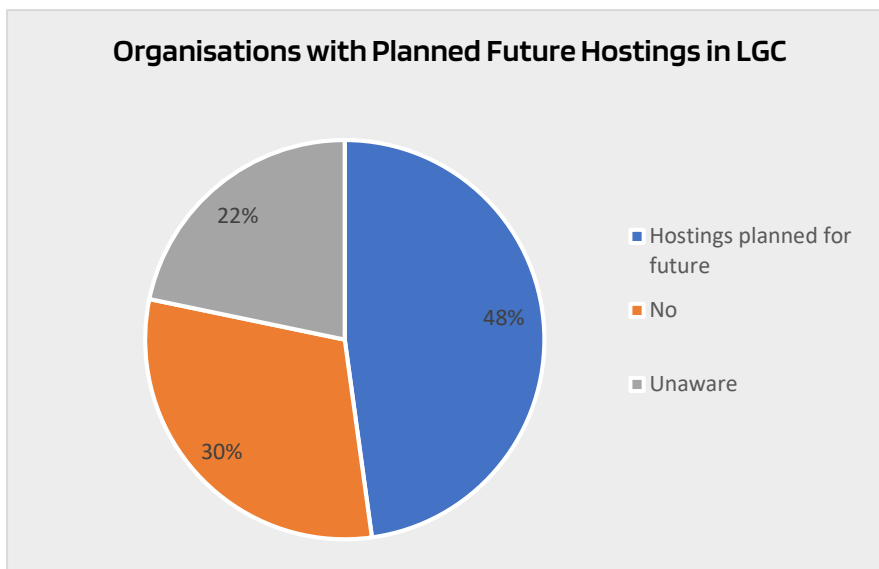
As indicated in Figure 6. 10, nearly 50% of the surveyed organizations have plans to host some additional applications in LGC 2.0 in near future. Another 22% of the Organizations that does not have IT experts depend on third party outsourced IT companies to guide them regarding their future requirements.

Figure 6. 10: Organizations planning to host applications in LGC 2.0 in Future

6.11. Connection to LGC

It was observed that almost 60% of the organizations use SLT internet connections to log into LGC 2.0 while another 25% use both LGN and SLT facilities and only 10% depend solely on LGN. The main reason for going in for other service providers is the poor quality of LGN connections.

6.12. Services provided in LGC

LGC has provided 399 services to various government organization through IaaS and 203 in cPanel. Some organizations have hosted systems developed by ICTA itself.

7. FINDINGS OF FORMS.GOV.LK – SUBMISSION OF GOVERNMENT FORMS ELECTRONICALLY

7.1. Background

Government organizations throughout the country collect and handle millions of paper-based application forms submitted by the citizens and businesses when requesting for various services from the organizations. These organizations are burdened with storing used forms and related documents in safe and secure manner for future reference. Further, these paper-based documents result in multiple data entry efforts at different points of processing the application leading to duplication errors which may be costly to correct. During COVID pandemic handling of paper-based documents and citizen visiting the government offices to submit forms were found to be risky and inconvenient to both the public and the staff of government offices.

Objective of this Digital Forms Solution is to facilitate the submission of government forms electronically and collect all the required data to provide the service digitally and accurately at the source and create a common platform for government staff to process them and store digitally. The project is expected to commence in 10 Divisional Secretariats initially and roll out to other government offices subsequently.

Baseline study was conducted focusing Divisional secretariats in the country to collect relevant information. On principle, Divisional Secretariats provides the same basic service requirements to the citizens and businesses in within their administrative area. All the 340 Secretariats in the country perform almost identical functions with few variations depending on the specific needs of the citizens in the area. The selected sample was extremely representative covering all most all the districts of the country. Since the project has not identified the 10 specific Divisional Secretariats for implementation, Baseline study sample covered 20 District Secretariats covering 22 administrative Districts of the country, as shown in Table 7.1.

Table 7. 1: District Secretariats Surveyed for Forms.gov.lk

Number	District	Name of the Organization	Number	District	Name of the Organization
1	Ampara	Uhana	12	Kilinochchi	Karachchi
2	Anuradhapura	Thalawa	13	Kurunegala	Rideegama
3	Batticaloa	Manmunai North	14	Mannar	Mannar Town
4	Colombo	Kesbewa	15	Matale	Ukuwela
5	Galle	Hikkaduwa	16	Matara	Matara
6	Gampaha	Mirigama	17	Mullaitivu	Maritimepattu
7	Hambantota	Tangalle	18	Nuwara Eliya	Kotmale
8	Jaffna	Jaffna	19	Puttalam	Wennappuwa
9	Kagalle	Rambukkana	20	Ratnapura	Kolonna
10	Kalutara	Kalutara	21	Trincomalee	Trincomalee Town Gravets
11	Kandy	Udunuwara	22	Vauniya	Vauniya
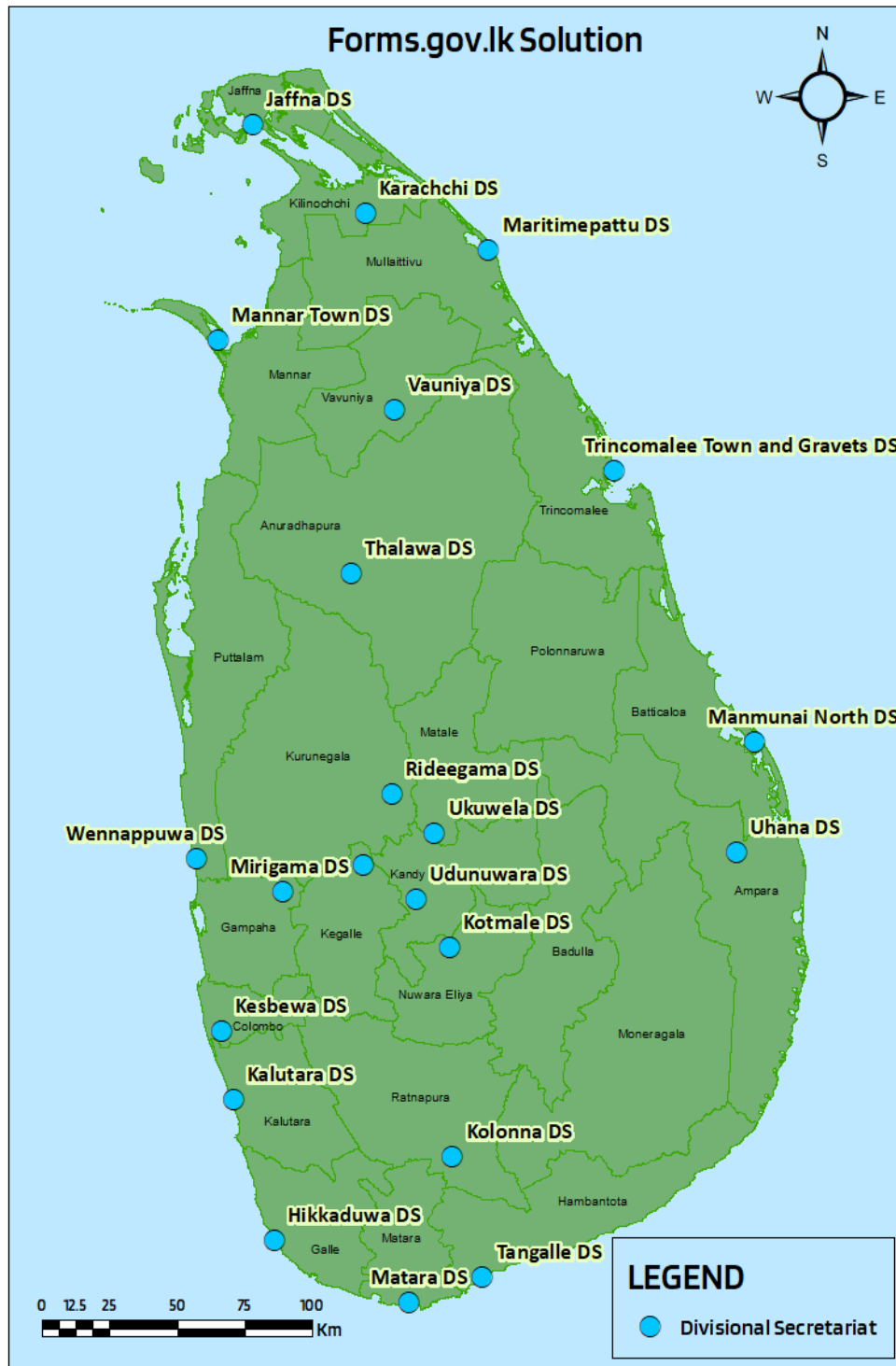
Figure 7. 1: Locations of the study sample of Forms.gov.lk

The baseline study was conducted to establish the present status of using application form to obtain public services by the citizens from a Divisional Secretariats with regard to the Form.gov.lk Solution. Heads of Organizations, IT Administrators and citizens were interviewed. Further, organization data/information were collected from various officers involved in handling the application forms to understand the present service delivery process. The data gathered from the sample of Divisional Secretariats are analyzed and presented in summarized form below.

The Gender profiles of the respondents are given in the Figure 7.2.
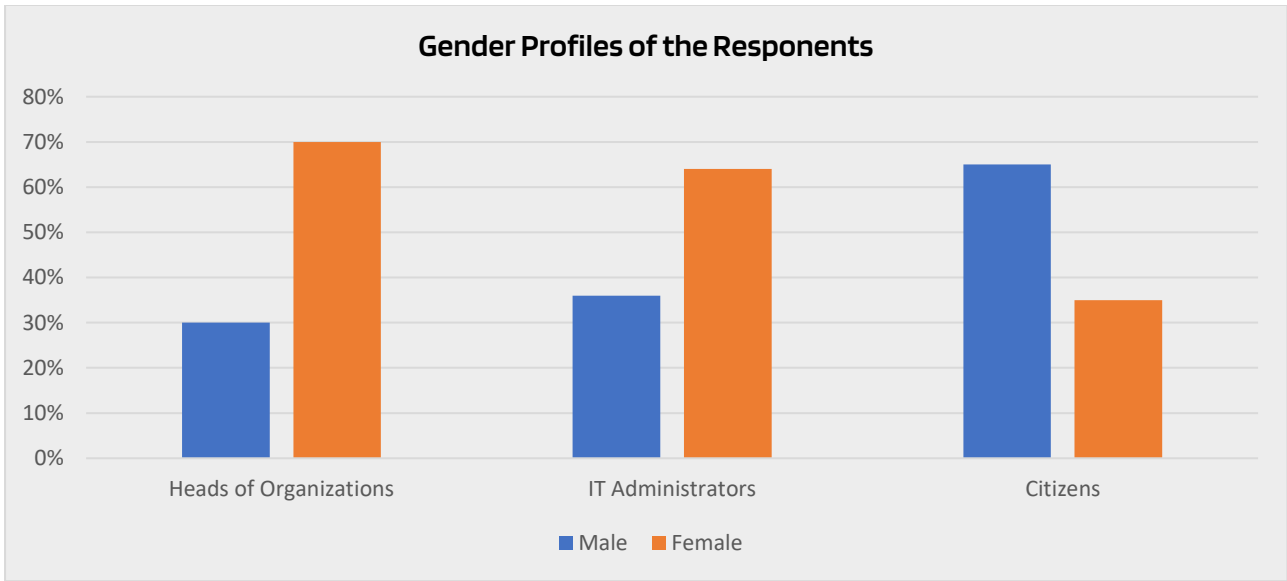
Figure 7. 2: Gender profiles of respondents

7.2. Views, Opinions and Perceptions of the Organization Heads

In-depth interviews were carried out with the Divisional Secretariats selected from different districts of the country. In the absence of the Divisional Secretary, next most senior officer participated in the discussion to provide the much-needed, in-depth qualitative information regarding the study components.

7.2.1. Designation of the Respondent
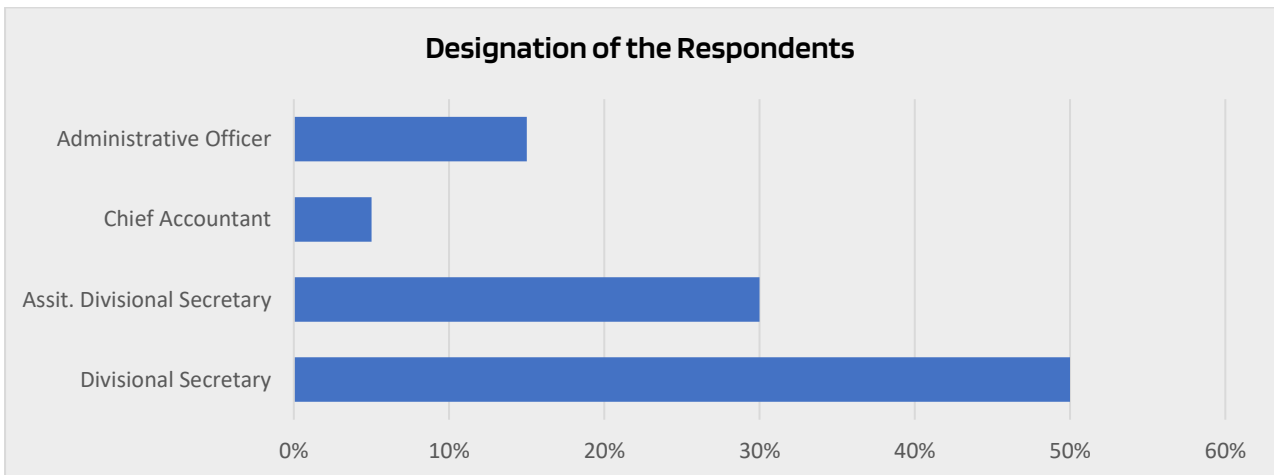
Figure 7. 3: Designation of the Respondent

As observed from **Figure 7. 3**, 50% of the respondents were Divisional Secretaries while another 30% consisted of Assistant Divisional Secretaries.

7.2.2. Functions of Divisional Secretariats

Divisional Secretariat provides large number of public services through its seven Divisions. Large number of citizens come to these offices daily to get various services and most of them come to get certified copies of birth, marriage and death and obtain annual revenue licenses for their vehicles. These eServices are conveniently issued to the public with minimum delay using an online delivery system. Depending on the population of the area, number of citizens visiting the office to submit the paper-based applications to obtain various services vary very widely. Often these application forms carry number of supporting documents and certifications from relevant organizations. In some cases, citizens have to make payments to receive these services. Most of the common application forms are available in the organization website and citizens could conveniently download and fill them before coming to the office. However, most of them collect the printed forms from Divisional Secretariats issued free.

However, during pandemic situation most of the usual services were not performed by the Divisional Secretaries and services were limited to providing essential services. These offices operated with limited staff reporting to work and following the health guidelines issued by the government. These essential services included issuing of permits to mobile delivery services of essential items, issuing of curfew passes, and delivery of essential items to quarantine areas. In some offices citizens had been taken inside in small batches to attend to their work. In addition, most of the staff had created 'WhatsApp' groups to keep the connections with citizens, co-workers and superiors.

7.2.3. Opinion About the Usefulness of Digital Forms Submission by the Citizens

All the responding heads unanimously agreed that Divisional Secretariat is the key government organization in the area which provides numerous basic but essential services to the citizens and businesses in the area. Often citizen has to submit a completed paper-based application form with required supporting documents at the respective counters and make their payments to obtain the service. Further, government institutions, upon processing the application respond through a paper-based documents to their clients. Therefore, these institutions are burdened with handling, maintaining and storing these used-up paper documents in a safe and secure manner for future references. Government organizations are incurring very high annual costs for printing, administration of stationery and storage of used forms.

The respondents were in total agreement that an efficient system of transforming the paper-based application forms submission into a digital mechanism is extremely cost effective, convenient and secure. This enables the general public and businesses to submit their applications online when obtaining services which is convenient and cost effective and minimize their requirement to visit the institutions. Also using such digital data, staff could conveniently process the application to provide the required service efficiently. Storing these data digitally eliminates the burden of storing papers and increase the efficiency of sorting them when required. Further, they also agreed that such digitally available data could be easily processed to generate various administrative reports and forecast emerging trends in service requirements. They also expressed the advantage of a system of this nature where the staff can work from home to deliver the service in such a need arise.

However, such a transformation needs correct equipment and training to the staff as well as creating proper awareness among the public. Also, they consider that it is extremely vital to do a proper feasibility study encompassing all the stakeholders to identify different needs, capacities and technicalities. In essence, once

properly established, public should be able to forward their applications conveniently from home without physically visiting the office.

7.2.4. Concerns Expressed by the Respondents

Although the respondents did not have a very clear picture of the online form submission initiative (Forms.gov.lk) and its processes, they expressed some concerns about the implementation of the initiative. Some of them are include below:

- Present level of competency and ICT skills of the staff to implement such an innovative initiative.
- Availability of required equipment.
- Literacy levels and IT skills of the citizens to use the proposed platform to submit their applications.
- Attitudes of the public to change the current way of handing applications at the counter.
- Since most of the application forms used now are standard forms used by all the divisional secretariats in the country creating own customs forms by individual offices can raise some issues both administratively and legally. They proposed such changes to existing forms be done centrally not by individual organizations.
- Since the organization is responsible for the data they have collected, security and safety of the digital data collected through the applications have to be ensured.
- Right to Information Act requires the maintenance of documents for 12 years. Most of the documents stored at present are in hard form.

7.2.5. Economic Benefits Anticipated from the Proposed Initiative

The following economic benefits are expected by the respondents on successful implementation of the initiative.

- Citizens and Businesses conveniently can access and submit forms digitally without visiting government institutions.
- Reduction of paper usage and storage.
- Significant reduction of printing cost.
- Significant improvement of the quality and efficiency of service delivery.
- Improve convenience and cost reduction to citizens and businesses when obtaining services.
- Ability to work from anywhere

7.3. Number of Services Provided Through Submission of Applications

Table 7. 2: Number of Common Public Services provided through submission of applications forms by Divisional Secretariats per month

	Service Name	No of applications/services received per month per organization		
		Average	**Minimum**	**Maximum**
1	Annual Vehicle Revenue License service[1]	2838	400	7500
2	Issuance of copies of Birth, Marriage and Death Certificates	1851	188	9000
3	Registration of a Birth, Marriage and Death	910	68	5000
4	Issuance of Life Certificate for pension holders	285	5	875
5	Grant of Rs. 20000 / = allowance for pregnant mothers	87	2	300
6	Issuance of viable relief service for low income elderly persons over 70 years	58	2	300
7	Issuance of Registration of a business certificates	53	7	270
8	Issuance of elder's identity card	49	1	450
9	Issuance of Annual Revenue Certificate	48	3	200
10	Issuance of Rail Warrants for widows, orphans and pension holders	45	1	300
11	Issuance of permits to cut a tree	35	5	100
12	Issuance of permits to transport timber	26	5	70
13	Free lens service for senior citizens over 60 years	24	1	150
14	To change a name of a person	21	2	100
15	Widows' & orphans' pension service	21	1	200
16	Self-employment assistance for a single parent	21	1	200
17	Life assistance for disabled persons	17	1	100
18	Social service assistance for special occasions disabled	9	1	30
19	Obtain land Valuation Certificate	7	1	21
20	Self-employment assistance for the disabled	5	1	15
21	Providing housing assistance to disabled persons	5	1	15

Note. 1. No filled form is required to obtain Annual Vehicle Revenue License

As seen from Table 7. 2, the baseline study was able to identify the common and mostly in demand services obtained by the public from Divisional Secretariats which required a submission of a printed standard application, except for obtaining Annual Vehicle Revenue License. Most of these forms were available at the Divisional Secretariats and issued free of charge. As seen, the numbers fluctuate very widely depending on the area. However, apart from obtaining Annual Vehicle Revenue License which is issued on submission of relevant required documents, most of the citizens come to obtain certified copies related to civil registrations. There were some specific applications limited specific Divisional Secretariats.

7.4. Availability of Application Forms in the Websites of the Divisional Secretariats

Most of the Divisional Secretariats provide commonly used application forms, especially services related to civil registrations in their websites and the public could conveniently download and fill them up when they come to get the service. The availability of such forms is described in Figure 7. 4.

Number of such forms available in the websites of the surveyed Divisional Secretariats for downloading, varied from zero to 24. Though the websites had links to number of applications forms, only limited numbers of applications were actually available for downloading. When inquired from citizens who had come to get services, none of them had obtained the application from the web. They all had collected the already printed forms from office counter. Some complained that sometimes available forms in the websites are outdated ones and as such they collect the forms from office.
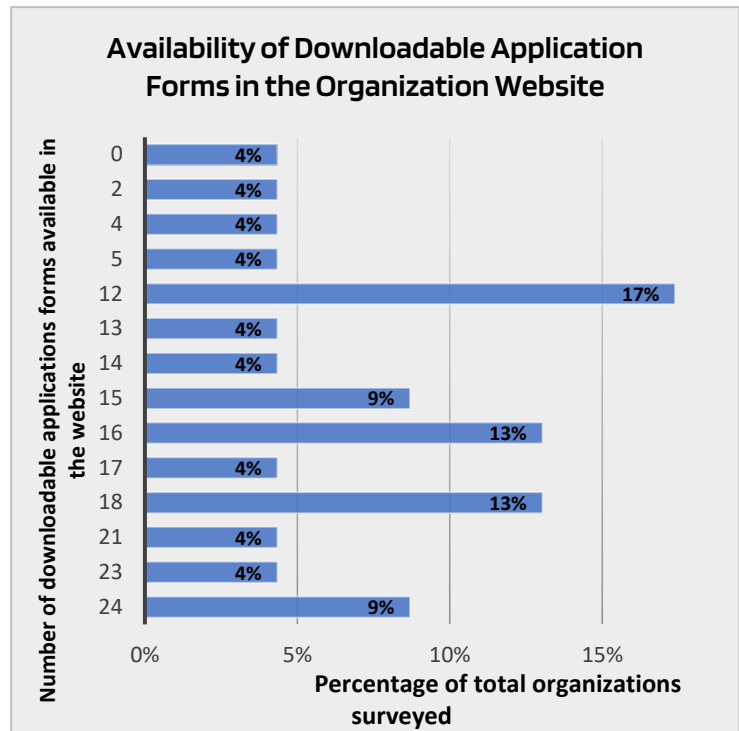
Figure 7. 4: Availability of application forms in the website of the Divisional Secretariat

7.5. Requirements to have Prior Recommendations from Other Institutions or Officers Before Submitting the Application

Certain services provided by the Divisional Secretariats required prior recommendations from other related institutions or officers before submitting the application form to obtain the service. Sometime those recommendations are given on the same application form. Often such recommendations are required from officials such as Grama Niladharies, Land officers, Samurdhi officers, Agricultural Research Assistants, Public Health Inspectors, and medical doctors. The number of services that need such approvals varied from 11 to 26 applications in the study sample and details are shown in Figure 7. 5. Around 27% of the Divisional Secretariats surveyed had 18 such services while 5% had 26 such services.
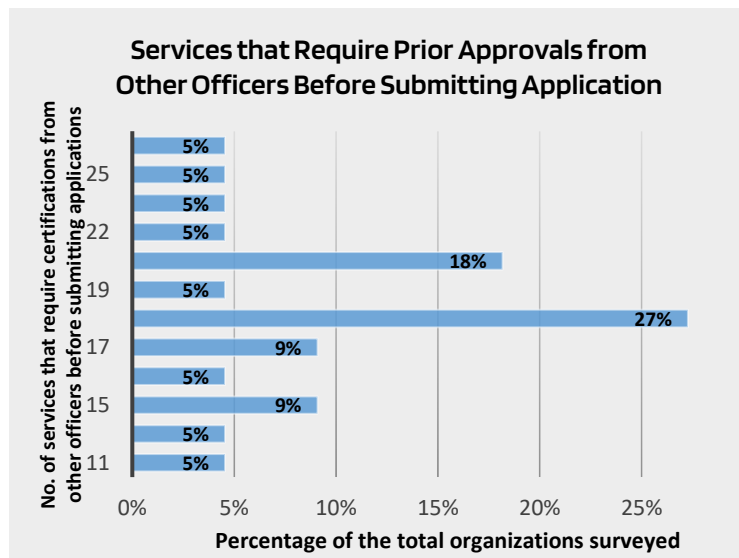
Figure 7. 5: Requirements to have prior recommendations from other institutions before submitting the application

7.6. Requirements of Supportive Documents to Submit Along with the Application

As shown in Figure 7. 6 , survey found that number of public services provided by Divisional Secretariats required additional supportive documents to be submitted together with the application form to obtain the service. Around 36% of the surveyed Divisional Secretariats had 18 services that required such supportive documents, while another 5% had almost 26 such services.

Applications that need other supporting documents to get the required service

No. of services that need suppoting documents to submit applications	Percentage of total organizations surveyed
26	5%
25	5%
22	5%
20	14%
19	18%
18	36%
17	5%
14	5%
11	5%
6	5%
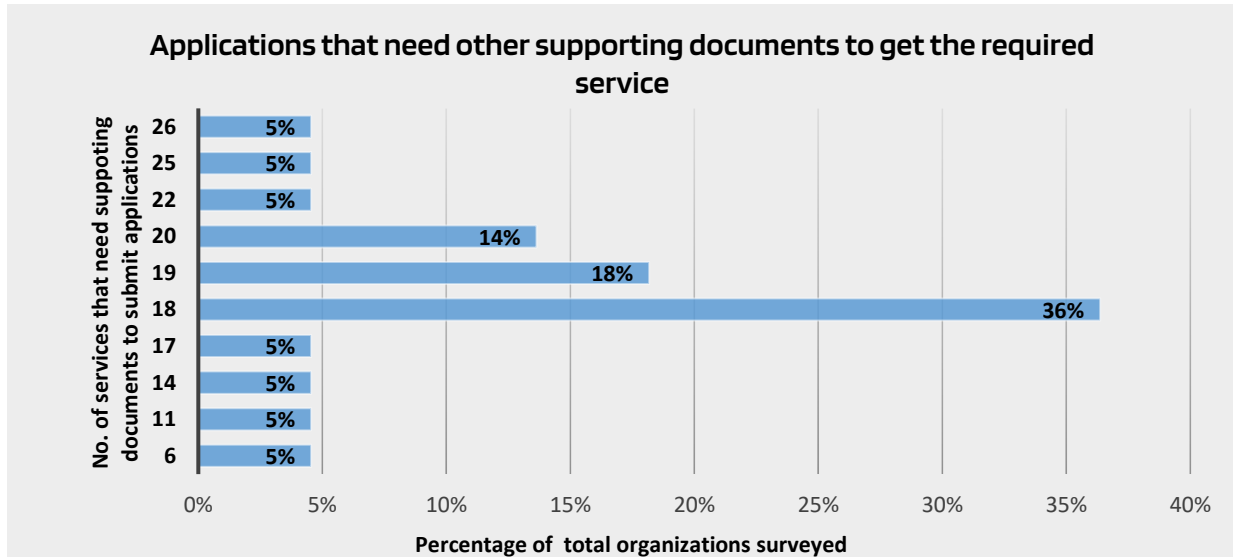
Figure 7. 6: Requirements of Supportive documents to submit the application

7.7. Number of Citizen/Business Services that Required a Specific Payment to be Made at the Time of Submitting the Form

Figure 7. 7 shows the number of services that requires a stipulated payment to process the application form. Almost 41% of the Divisional Secretariats surveyed had 7 such services that require payments while another 5% had 13 such services.

Citizen Services that Do Not Need Payments to Get the Service

No. of citizen services that required a payment to process the application	Percentage of the total organizations
13	5%
9	18%
8	23%
7	41%
6	5%
5	5%
4	5%
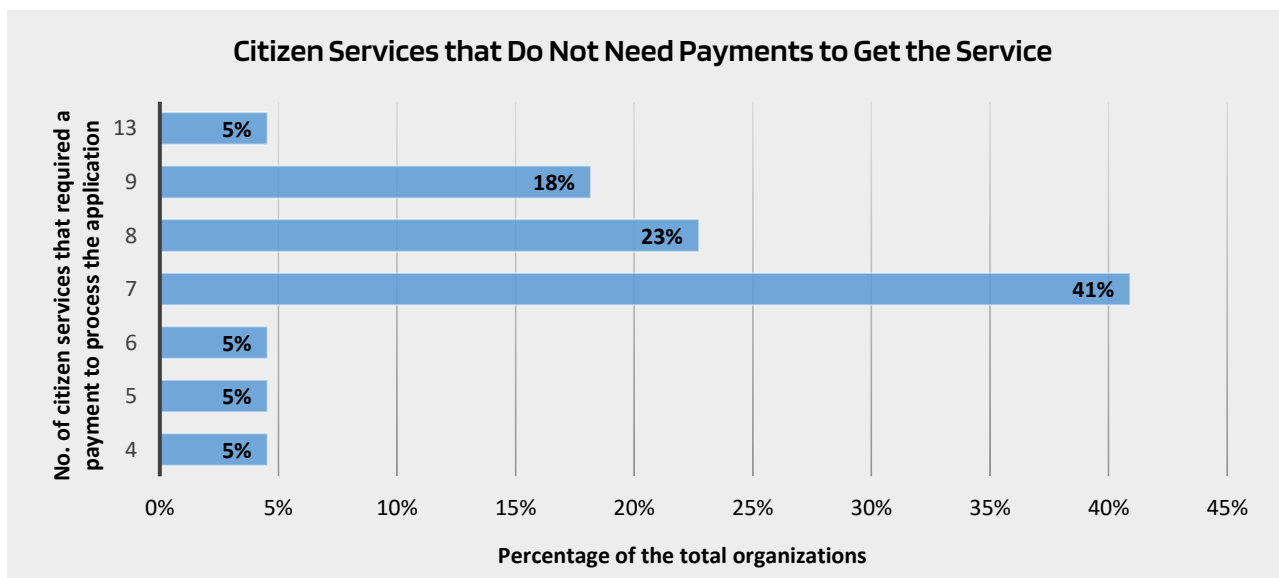
Figure 7. 7: Requirement of making specified payment to Divisional Secretariat when submitting an application form

7.8. Cost of Printing Paper-Based Applications by the Surveyed Divisional Secretariat

Divisional Secretariats incur large sums of money to print these required application forms issued to the public free of charge to be used when requesting for a particular service. The survey collected the annual printing costs involved in printing these forms. Table 7. 3 provided the summary of these costs.

Table 7. 3: Annual cost of printing paper-based forms/applications per organization

Year	Average	Minimum	Maximum
2019 (Actual Cost) LKR	1,081,608.00	486,651.00	1,669,000.00

As seen from the table, the annual costs incurred by a Divisional Secretariat vary very widely depending on the population and number of services offered by the Secretariat.

7.9. Complains Received Regarding Issues Related to Downloadable Forms

IT administrators of the organization expressed that they received several public complaints regarding downloadable applications available in their websites. Some of them are:

- Non-availability of forms in the websites,
- The Forms available in the website are not currently used forms. As such when they download and submit to the Divisional Secretariat, such applications are rejected.
- Some prescribed forms in the web sites are actually not available, in the web to download. Only the links are shown.

7.10. Updating the Websites of the Divisional Secretariats

Figure 7. 8 shows the frequency of updating official websites of the surveyed Divisional Secretariats. 59% Divisional Secretariats reported that they update their websites weekly, 32% monthly and 9% quarterly.
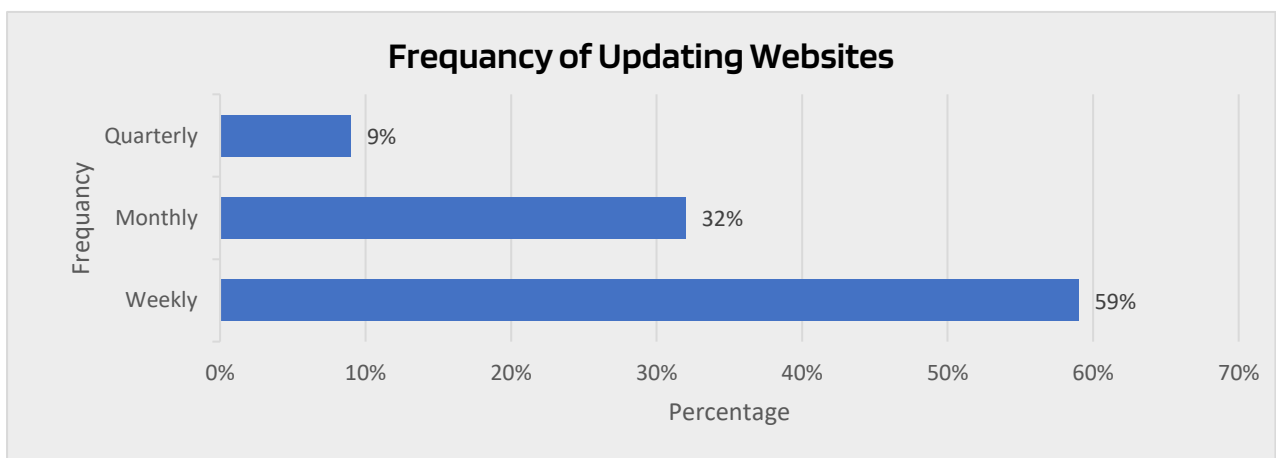
Figure 7. 8: Frequency of updating web sites of the Divisional Secretariats

7.11. Requirement of a Submission of an Application Form for the Citizens Who Visited the Organization to Get Some Services

A sample of citizens were surveyed to get the public opinion on the issues related to submission of forms to get services from the organization.

As expresses by 52% of the visitors interviewed said that they were required to furnish an application form to obtain the required service and for the balance 48% mentioned no requirement of application for the services they came for.

Further analysis indicates that 56% of the citizens who did not submit an application from had come to obtain a vehicle revenue

Requirement of submission an application for the citizen visited the organization

- Yes
- No

48%

52%
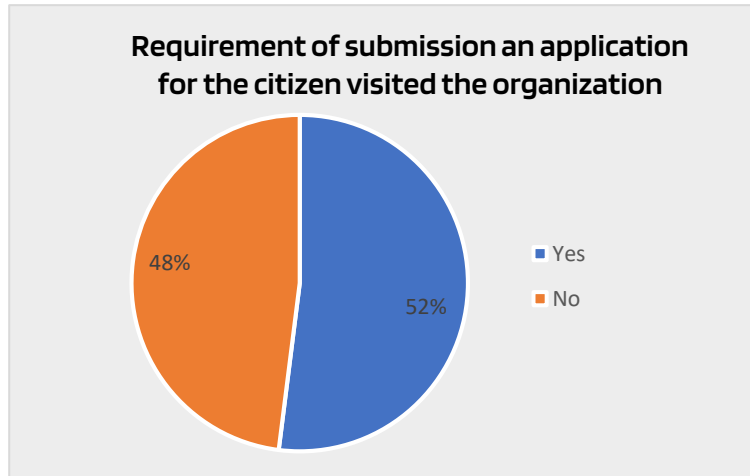
Figure 7. 9: Submission of an application to obtain the services

license and others had come to make payments, fines or meet an official. Similarly, of the 52% who had submitted an application form to get a service majority 64% had come to get a copy of a birth, marriage or death certificate. Except for one citizen who had downloaded the application form from the websites, others have obtained the printed application from the reception of the Divisional Secretariat.

7.12. Cost Incurred Per Citizen to Obtain the Service and Travel Time

Table 7. 4: Cost incurred per citizen to obtain the service and Travel time

	Description	Average	Minimum	Maximum
1	Cost of travelling (LKR)	206.00	0	3000.00
2	Loss of income	1149.00	0	6000.00
3	Total cost	1355.00		

These calculations were based on average values obtained from the citizens who had come to the Divisional Secretariat at the time survey was in progress. Travelling cost raged from Rs.3000 to no cost with average cost being Rs. 206. This depended on the distance and mode of travelling. Of the surveyed 75% mentioned that they did not lose any income by coming to get the service. The average loss of income of the balance, worked out to be Rs. 1,149 per person.

The average travel time taken by a citizen to visit the Divisional Secretariat was found to be 63 minutes.

7.13. Time Taken to Obtain the Service

Figure 7. 10 depicts the time taken to obtaining the citizen's service. As expressed, 60% of citizens had obtained the service on the same day, another 10% have to come on another day and the balance 30% cannot say the number of days it will take to complete the day.
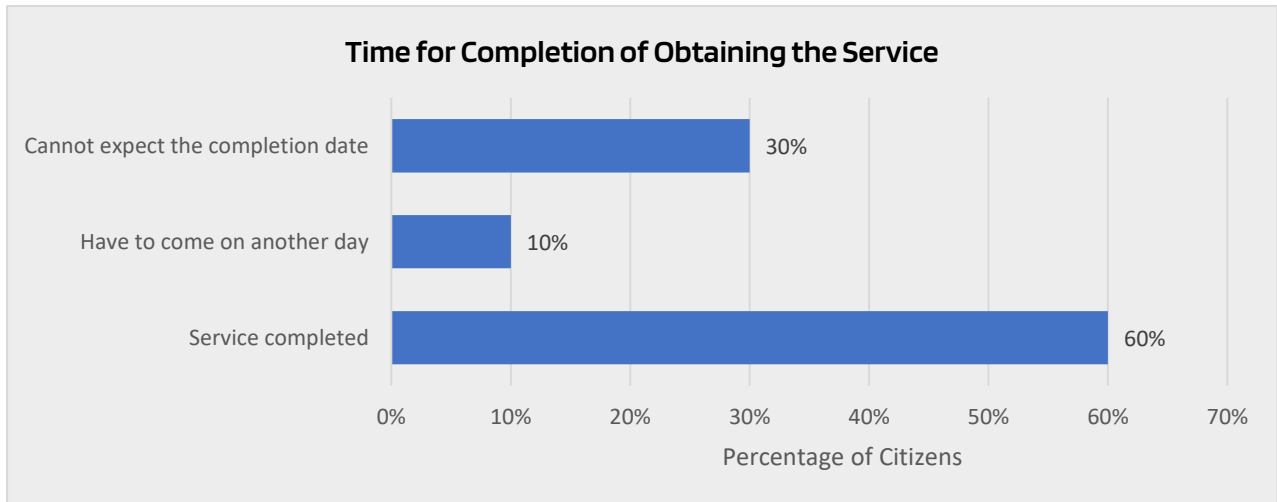
Figure 7. 10: Cost incurred per citizen to obtain the service and Travel time

8. SUMMARY OF FINDINGS CONCLUSIONS AND RECCOMENDATIONS

The baseline study was conducted as an initial step of Monitoring and Evaluation of implementation of four projects implemented by ICTA under Contingent Emergency Response Components (CERT)of the World Bank to develop a platform to facilitate Work-From-Home for government officers to provide uninterrupted services to serve citizens. The objective of the baseline study was to understand the present status of the government organizations with respect to four initiatives ICTA is planning to implement. The four projects and key outputs are:

1. To establish Government-wide email and collaboration solutions to create 100,000 email accounts for GoSL officials.
2. To establish 100 video conferencing facilities in GoSL organizations.
3. To create a platform for digitizing Government Forms in 10 Divisional Secretariats in the country.
4. To expand Lanka Government Cloud 2.0 and establish a disaster recovery site.

8.1. Government Video Conferencing Facility

The findings of this extensive study are detailed in previous sections and important findings of the study for Government Video Conferencing Solution.

8.1.1. Summary of Findings of Video Conferencing Solution

Table 8. 1: Summary of findings of Video Conferencing Solution

	Indicator	Value
1	Average number of internal physical meetings held by a government organization per month	9
2	Average number of participants attending an internal physical meeting	33
3	Average number of internal online meetings held per month by an organization.	7
4	Average number of meetings held outside the office per month by an organization.	9
5	Average number of physical meetings held by an organization in the office with outside officials	7
6	Average number of participants attending the physical meeting held by an organization in the office with outside officials.	18
7	Average number of online meetings held in the office with outside officials	8
8	Average travel distance for attending a meeting outside the office	55 Km
9	Average travel cost incurred per meeting when by the organization when attending a meeting outside the office	LKR. 2,206
10	Average distance travelled by outside officials when attending a meeting held in the office	54 Km
11	Calculated travel cost incurred in attending outside meeting	LKR 2,034
12	Average time spent on travelling to attending a meeting outside the office	90 Minutes
13	Total man hours spent on travelling when attending meetings held outside the office per month	10 hours

14	Average travel time for outside official to attend a meeting in the organization.	106 Minutes
15	Average number of outside officers attending per meeting	51
16	Total travel time spent by all the outside officials on travelling when attending meetings outside per month	577 hours
17	Number of government organizations using Meet.gov.lk Video Conferencing Facility	10% (initially)
18	Proportions of different types of Video Conferencing Facilities used by the organizations	• Zoom – 54% • WhatsApp – 54% • Google Meet – 14% • Microsoft Teams – 11% • Face Book Messenger – 6%
19	Proportions of organizations fully skilled to operating a Video conference	50%
20	Proportions of officials satisfied with the holding physical meetings considering active participation of all attendees, achievement of meeting objectives, and post meeting actions taken by the participants	98%
21	Proportions of officials satisfied with the online meetings considering active participation of all attendees, achievement of meeting objectives, and post meeting actions taken by the participants	97%
22	Proportions of officials satisfied with quality of present video conferencing facilities in relation to the features like audio and video quality, lip synchronization and video resolution.	92%
23	Proportions of officials who are aware of the technology used in voice and video transmission	46%
24	Proportion respondents willing to participate in Video Conferencing	98%
25	Proportion of citizens that expect satisfactory service delivery after the implementation of a government video conference facility	73%

8.1.2. Conclusions from The Findings

1. Present practice of holding physical meeting are costly and wasteful considering the valuable time of the senior administrators spent on travelling to attend these meetings. Sometimes full day is lost for travelling. Even two days are required for officers to come from Jaffna and return.
2. Most of the respondents agreed that if the meeting could be held virtually, using the most advanced technology they could save the travelling time and associated costs involved.
3. However, they firmly believe that certain meeting such as tender meetings need to be held physically.
4. Senior officers also hold meetings in their offices with the participation of officers from other areas. This too incur heavy financial costs and loss of valuable time of so many officers. These costs and time could be saved could be if the meeting could be held virtually.
5. If video conferencing facilities are available, they could have frequent virtual meetings and reduce the delays of decision making.
6. Majority of officers interviewed also agreed that this saved time and money could be used productively to provide speedy services to the public.
7. This facility was found to be extensively used during the pandemic to provide uninterrupted citizens' services.
8. It was also found that with the technology in place, office management processes can be organized to provide effective and efficient services to the public.

9. Senior officers also agree that if the video conference room are established with correct technologies to give uninterrupted, clear audio and video receptions, that will improve the working convenience and satisfaction.
10. They expect an efficient help desk support and effective training of IT staff to handle the platform without any breakdowns.
11. It is also found that policy framework is required to promote efficient use of these facilities to provide better service to the public.

8.1.3. Recommendations

1. Develop a high-quality Video conference platform to suit the user requirements.
2. Create an efficient help desk support and effective training programme for IT staff to handle the platform without any breakdowns or quality drops.
3. Develop a policy framework to promote efficient use of these facilities to provide better service to the public.

BASELINE STUDY REPORT
Carrying out Baseline Study and Outcome Evaluation of the World Bank Supported CERC Digital Transformation Projects
to Create Home-based Work Platform, Implemented by ICTA

8.2. Government-Wide Email and Collaboration Solution

The findings of this extensive study are detailed in previous sections and important findings of Government-wide email and collaboration solutions are summarized in Table 8. 2.

8.2.1. Summary of findings of Email and Collaboration Solution

Table 8. 2: Email Solution Key Findings

	Indicator	Value
1	Proportion of emails used in total communications used in Government Organizations	38%
2	Average annual cost spent on communication stationary used by a government organization	Rs. 32,315,851.08
3	Proportion of the government organizations maintaining a dedicated Record Rooms to store the used documents	83%
4	Annual average maintenance cost of a Record Room	Rs. 80,836.65
5	Availability of dedicated Records Keeping Officers in organizations	69%
6	Number of past records retrieved per month	45 documents
7	Proportion of documents retrieved almost immediately from the record room	55%
8	Average number of paper-based letters received per month per organization	2,884
9	Average number of paper-based letters sent by an organization per month	1,755
10	Average number of emails received by a government organization per month	2,220
11	Average number of emails sent by an organization per month	1,261
12	Proportions of government organizations maintaining a gov.lk domain email address for public to communication	80%
13	Average number of emails received by gov.lk domain email address from the public per month per organization	287
14	Average number of private emails used in a government organization for official communication	66
15	Proportions of emails received by an organization per day in Sinhala, Tamil and English	49% Sinhala 2% Tamil 49 % English
16	Proportions of emails sent per day in Sinhala, Tamil and English	68% Sinhala, 0.3% Tamil, 31% English
17	Proportions of government officers using gov.lk domain-based emails for official use	10%
18	Proportions of government officers using emails for official communication daily	59%
19	Proportions of government offices printing more than 50% of the email communications and attachments for filing for further reference	48%
20	Proportions of government user officers aware of the benefits of using email	98%

21	Proportions of government offices using the e-Government Policy for official use of emails	18%
22	Proportions of government offices having a policy for official use of emails	29%
23	Proportions citizens satisfied with the current paper-based correspondence received from the government organization	68%
24	Proportions citizens communicating with government using emails	17% of citizen
25	Proportions citizens having the knowledge to communicate using emails	70%
26	Proportions citizens having an email account	80%
27	Proportions citizens accepting the convenience of using emails for communication	47%
28	Proportions the staff satisfied with the use of emails for official purpose	57%
29	Proportions the staff accept the ability to work 24x7 from anywhere using government email address	100%
30	Number of security incidents reported last year	37 incidents

8.2.2. Conclusions from the findings

1. Present practice of paper-based communication methods are costly and cumbersome to handle and need to be replaced with a cost effective, secured and convenient system using an up to date digital technologies.
2. Although government organizations are using emails to communicate with other government organizations, majority communications are paper-based.
3. Most of the staff still use various other email systems for official communication purposes. This is not a healthy situation and security of the sensitive government data and information is at a risk.
4. There is an urgent need to establish a single, secure and dedicated email and collaboration solution for the official use of the government officials.
5. Though an e-Government policy was formulated in 2010, this is not implemented fully by all the government organization.
6. The IT skills and knowledge in most government organizations are not adequate to achieve a successful digital transformation in the government sector.
7. Most organizations do not have Chief Innovation Officers and some do not have proper IT administrators to provide much needed technical backup support to the organization staff.
8. The citizens are still used to the old systems of depending on printed letters on official letter heads with the signature and rubber stamp of the organization head. They are skeptical about accepting the authenticity of an email.
9. Most of the staff in government organization did not have a clear understanding of the provisions of Electronic transactions Act and the use of e-signature in electronic documents.
10. Some citizens, especially the younger ones are more inclined to use emails for communication since they can access them from their smart phones.
11. Some government officers have used emails to communicate and perform their urgent tasks from home during lockdown period.

8.2.3. Recommendations

1. Develop a secure, user-friendly, government-wide email and collaboration solution to meet all current and future needs of the government.
2. Develop a policy to govern the use of email in the government organizations.
3. Provide adequate training to users on security aspects and use of collaboration tools.
4. Establish an effective help desk support system to resolve user issues.

8.3. Expansion of Lanka Government Cloud 2.0 and Establish a Disaster Recovery Site

The findings of this extensive study are detailed in previous sections and important findings of Expansion Lanka Government Cloud 2.0 and establish a disaster recovery site are summarized in Table 8. 3.

8.3.1. Summary of findings of Expansion of LGC 2.0

Table 8. 3: Summary of findings of Expansion of LGC 2.0

	Indicator	Values
1	Number of government organizations using LGC 2.0 to host data various application	No. of Organization-266 Web hosting-158
2.	Proportion of government organizations not satisfied with the overall services offered by LGC 2.0	40% (Not satisfied)
3.	Proportion of organizations maintaining their own servers while hosting applications in LGC 2.0	60%
4	Proportion of LGC 2.0 users not satisfied with the "High availability of the service".	69% (They complained about breakdowns.)
5	Proportion of users satisfied with data security of LGC 2.0	70% -satisfied
6	Proportion of users satisfied with the quality of Help Desk support	10%
7	Proportion of users satisfied with the costs saved to the Organization because of using LGC 2.0	70%
8	Proportion of government organizations while using LCG 2.0 also have Applications hosted in other Clouds	30%
9	Proportion of government organizations who have shifted their application from LGC2.0 to a private Cloud because of operational issues	9%
9	Proportion of government organizations planning to host more applications in future	48%
10	Proportion of government organizations expect to have a Disaster recovery site for LGC 2.0	100%

8.3.2. Conclusions from the findings

1. LGC 2.0 provided a cost-effective cloud serve to the government organizations.
2. The knowledge of the LGC 2.0 operations is minimal for some IT staff since all cloud-based applications are handled by an outsourced third-party company.
3. Opinion about the quality of services offered by LGC 2.0 is unsatisfactory.
4. Some organizations have removed their applications and hosted in other clouds because of breakdowns.
5. Some Organizations do not want to host critical applications because it has no Disaster recovery site.
6. Quality of Help Desk support provided by LGC 2.0 is not satisfactory.
7. Most of the organizations have plans to host more applications in future.

8.3.3. Recommendations

1. LGC should establish industry standard efficient, user-friendly cloud service eliminating current shortcomings to meet the increasing future demands of government organizations.

2. Establish an efficient, effective and professional support and maintenance team and proper ticketing mechanism to monitor the quality of complaint-handling mechanism.

3. Educate the organizational heads and IT staff and establish good rapport between ICTA and the government organizations.

8.4. Forms.gov.lk – Submission of GoSL Forms Digitally

The findings of this extensive study are detailed in previous sections and important findings of the study of Government digital form initiative are given below.

8.4.1. Summary of Findings: Forms.gov.lk

Table 8. 4: Summary of Findings: Forms.gov.lk

	Indicator	Values
1	Number of common public services provided by surveyed Divisional Secretariats	21
2	Number of public services that require submission of an application forms to obtain the service	20
3	Number of pre-defined application forms for public services	20
4	Number of applications available in the websites to be downloaded by the service seeker –maximum availability	24
5	Number of applications that require prior recommendations from other institutions/officers before submitting applications	21
6	Number of applications that require supportive documents to submit the application	25
7	Number of applications that require a payment to be made at the time of submitting the application form	15
8	Average cost of printing paper-based application forms (Average per organization per year)	• Average SLRs. 1,081.608 • Minimum SLRs.486,651 • Maximum SLRs.1,699,000
9	Frequency of updating the websites of the Divisional Secretariats	• 59% update weekly, • 32% monthly and • 9% quarterly

8.4.2. Conclusions from the Findings

1. District Secretariat plays a pivotal   role in the regions providing numerous essential services to the citizens and businesses in the area.
2. The size of the Secretariat varies depending on the population in the area.
3. Traditionally public visit the Secretariat physically to handover the application form to get the required service.
4. Divisional Secretariats in the country more or less provide identical public services using standard application forms.
5. Divisional Secretariats annually spend considerable amount of money on printing forms and storing and maintain used paper-based applications and documents.
6. Some important application forms are available in the organization website for the public to download without visiting the Secretariat physically.
7. Most of the paper-based application forms are handled and processed manually by the staff, sometimes going through several officers.
8. Sometime public has to visit the several times to get the service. Eg. First to get the form again to submit the application and finally to get the response letter.

9. Digital form submission is an innovative, challenging, and transformative initiative that can have many benefits to the government, citizen and the society.
10. This initiative needs in-depth study to understand the social environment and assess the readiness of the citizen and staff to undertake such a challenging transformation.
11. The Divisional Secretaries and the staff do not have a clear understanding to this project and hence need to create awareness before undertaking the project.
12. Similarly, Citizens and businesses have to be effectively educated to get their support to implement the system

8.4.3. Recommendations
1. Undertake a proper feasibility study in collaboration with all stake holders to understand how systems work at present and how to transform them into digital systems.
2. Undertake a trial run in few locations and train the staff and create awareness among the public to accept the change.
3. Establish an effective help desk support to resolve any emerging operational problems.
4. develop a monitoring system to identify bottlenecks and ensure achieving expected outcomes.

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ANNEXURES

Annexure 1: List of Reviewed Documents for Desk Review

No	Name	Published / Created by
Documents from CERC Project Implementation		
1.	Concept Paper – Cross Government Email and Collaboration Solution for the Government of Sri Lanka	ICTA
2.	Concept Paper – Video Conferencing Facilities to Ministries and Government Institutions	ICTA
3.	COVID 19 - CONTINGENT EMERGENCY RESPONSE COMPONENT - CERC Environmental and Social Framework (ESMF)	ICTA + other 4 ministries
4.	Digital Economy Strategy of Sri Lanka 2020 – 2024	ICTA
5.	Digital Government Strategy of Sri Lanka 2020 - 2024	ICTA
6.	Digital Services Strategy of Sri Lanka 2020-2024	ICTA
7.	E-mail Adoption Approach	ICTA Transformation Team
8.	Government Digital Forms Solution – Forms.Gov.Lk (Power point presentation)	ICTA
9.	LGC 2.0 - Tenet Infrastructure	https://lgc.gov.lk/
10.	LGC 2.0 Implementation - Scope of Work	ICTA
11.	Log Frame Analysis - LGC 2.0	ICTA
12.	Logical Framework – Cross Government Email and Collaboration Solution for the GoSL	ICTA
13.	Logical Framework - Implementation of a Software as a Service platform for the Government for Online Forms submission (Forms.Gov.lk)	ICTA
14.	Logical Framework – Video Conferencing Facilities to Ministries and Government Institutions	ICTA
15.	MOU between ICTA and Gov Organizations leveraging on LGC 2.0 WEB	https://lgc.gov.lk/
16.	MOU between ICTA and Gov Organizations leveraging on LGC IaaS	https://lgc.gov.lk//
17.	Project Proposal - Implementation of a Software as a Service platform for the Government for Online Forms submission (Forms.Gov.lk)	ICTA
18.	Project Specific Report – Forms.Gov.Lk	ICTA
19.	Site Survey for Video Conferencing	ICTA Vid Con Project Team
20.	Terms of Reference for ICTA CERC M&E Assignment	ICTA
21.	Video Conference Transformation Approach	ICTA Transformation Team
22.	Video Conferencing Platform - User Manual	ICTA
Documents Related to the Project Background		
23.	Broadband Policies for Latin America and the Caribbean; A Digital Economy Tool Kit	OECD, IDB 2016
24.	Digital Transformation and Public Service Delivery in Brazil; by Fernando Filgueiras, Flavio Cireno and Pedro Palotti	Latin American Policy, 2019 Policy Studies Organization
25.	E-Government Survey 2018; United Nations	UN
26.	Enumerator Training Case Studies	World Bank Group
27.	Environmental and Social Management System Implementation Handbook	IFC - World Bank Group
28.	Government Organizations Visitors Survey 2011	ICTA
29.	Making Connections Between Citizens, Data and Government (DOI: 10.3233/IP-2010-0205)	Information Policy · April 2010
30.	Manage Successful Surveys - Enumerator Training	Joanna Bertfielt for WB Group
31.	OECD Public Governance Policy Paper No. 3. Digital Government Index; 2019 Results	OECD
32.	Revolutionary e-Government Strategies across Asia Pacific by Alcatel Communication Review	
33.	Singapore e-Government – 2015; Info-communication Development Authority, Singapore	Info-communication Development Authority, Singapore

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34.	Successful E-Government in Singapore; by Weiling Ke and Kwok Kee Wei	By Weiling Ke and Kwok Kee Wei
35.	SurveyCTO Users' Guide for Field Staff	DIME, World Bank
36.	Training Data Collectors	World Bank Group
37.	World Bank Group Evaluation Principles	World Bank

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Annexure 2 – M&E MATRIX for Form.gov.lk

Description	Results	Indicators	Unit of Measure	Type / Instrument
Form.gov.lk – Submission of Government Forms Electronically				
Final Outcomes				
Citizens and Businesses submit information digitally and accurately to obtain services	Increased effectiveness of forwarding applications digitally to government officers	• Number of citizens/businesses submitted applications successfully through Forms.gov.lk per month • Number of citizens/businesses satisfied with the ease of submitting forms through Forms.gov.lk	Number of citizens/businesses Number of citizens/businesses	Outcome / Org. Questionnaire/ Citizen Survey
Saving travel time, travel cost and operational cost	Travel time in obtaining services	• Time taken to submit the application and complete the service • Number of times visited to complete the service	Time taken to complete the service - hours Number of times	Baseline and Outcome / Org. Questionnaire/ Citizen Survey
	Travel cost in obtaining services	• Cost for the visit to submit the forms	Travel cost - Rs. Number of times	Baseline and Outcome / Citizen Survey
	Operational cost in obtaining services	• Cost of printing of downloaded forms and postal cost for submission of an application	Cost for printing	Baseline and Outcome / Citizen
	Improved effectiveness of service delivery	• Number of services provided through submission of applications • Number of applications that can be submitted through Forms.gov.lk platform • Number of applications that required additional supportive documents for processing through Forms.gov.lk • Number of services that require prior recommendations from relevant officials for processing through Forms.gov.lk • Number of services that required payment in advance to process the service	Number of applications Number of applications Number of services require supportive documents Number of services require supportive documents Number of services require prior payment	Baseline and Outcome / Org Questionnaire Outcome / Org Questionnaire Baseline and Outcome / Org Questionnaire Baseline and Outcome / Org Questionnaire
	Reduced internal operational costs significantly	• Reduction in paper storage space and storage cost relating to space used for storing used applications and new applications • Cost of printing forms and other stationary in the organization	Storage space Cost of printing	Baseline and Outcome / Org. Questionnaire Baseline and Outcome / Org. Questionnaire
	Improved efficiency in the processing of service applications	• Reduction of time taken to deliver services in the Divisional Secretariat • Reduction in cost of obtaining each service by the citizens	Time taken to deliver service Cost for obtaining services	Baseline and Outcome / Org. Questionnaire, Citizen Baseline and Outcome / Citizen
Intermediate Outcomes				
Satisfaction with Forms.gov.lk platform	Increased satisfaction with the submission and processing of forms through Forms.gov.lk	• Number of staff satisfied with the processing of digitally received forms • Number of citizens/businesses satisfied with the submission of digital forms	Number of heads and officials	Outcome / User Questionnaire & Org. Questionnaire, KIIs
Immediate outcomes				

Description	Results	Indicators	Unit of Measure	Type / Instrument
Use of Forms.gov.lk platform for digital data collection and storage	Forms.gov.lk platform adopted and accepts digital forms from citizens and businesses	• Number of organizations using Forms.gov.lk platform • Number of forms received through the Forms.gov.lk system per week	No of organizations No of forms received No of organizations	Outcome / Org. Questionnaire, KIIs
Security and authenticity	Established required security and authenticity of the documents submitted	• Number of digital forms submitted with e-signature • Number of citizens/businesses willing to submit digital forms to obtain their services	Number of digital forms Number of citizens/businesses	Outcome / Org. Questionnaire, Citizen. KIIs
Awareness, knowledge and skills on Forms.gov.lk system gained by participating in various training and change management programs	Increased awareness of the Forms.gov.lk platforms	• Number of government officials fully aware of functions of Forms.gov.lk platforms • Number of citizen/businesses fully aware of functions of Forms.gov.lk platforms	Number of government officials / citizens	Outcome / User Questionnaire, Citizen Questionnaire
	Improved attitudes towards the use of Forms.gov.lk platforms	• Number of government officials with positive attitudes towards Forms.gov.lk platform • Number of citizen/businesses with positive attitudes towards Forms.gov.lk platform	Number of government officials / citizens	Outcome / User Questionnaire, Citizen Questionnaire
	Improved knowledge and skills to operate the Forms.gov.lk platforms	• Number of government officials with fully skilled to operate Forms.gov.lk platform • Number of citizens/businesses with fully skilled to submit forms digitally through Forms.gov.lk platform	Number of government officials / citizens	Outcome / User Questionnaire, Citizen Questionnaire
Outputs				
Establishment of highly reliable secure digital platform for digital data collection and storage	Established Forms.gov.lk platform for digitizing the government forms	• Percentage completion of Forms.gov.lk platform	Completion of platform	Monitoring / Monthly Data Collection Form
	Connected 10 selected Divisional Secretariats to Forms.gov.lk platform	• Number of organizations connected to Forms.gov.lk platform • Number of Divisional Secretariats have signed policy agreements (MOUs) with ICTA	Number of organizations Number of DSDs	Monitoring / Monthly Data Collection Form
	Installed required software to operate Forms.gov.lk in 10 Divisional Secretariats	• Number of Divisional Secretariats • Number of software installed	Number of DSDs Number of software	Monitoring / Monthly Data Collection Form
Technical information and operational procedures	Completed technical information and operational procedures for Forms.gov.lk	• Percentage of completion of operational manual for the use of Forms.gov.lk platform • Availability of support and helpdesk	Percentage of completion Level of availability	Monitoring / Monthly Data Collection Form
	Conducted awareness programs	• Number of awareness programs conducted • Number of government officials trained • Number of citizens participated for awareness programs conducted by Divisional Secretariats	Number of training sessions Number of participants Number of citizens	Monitoring / Monthly Data Collection Form, Org. Questionnaire

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Annexure 3 – M & E MATRIX FOR Implementation of Zone - 2 for LGC 2.0

Description	Results	Indicators	Unit of Measure	Type / Instrument
Expansion of Lanka Government Cloud 2.0 and establishment of a disaster recovery site (Zone 2)				
Final Outcomes				
Reduction of government cost for operating/maintaining individual data centers	Reduced government cost for operating / maintaining individual data centers/server rooms at government organizations	• Number of organizations hosting their service applications, websites and databases in LGC 2.0 • Number of organizations migrated their service applications, websites and databases from commercial clouds to LGC 2.0	Number of organizations Number of organizations	Baseline and outcome /IT Adm. Baseline and Outcome / IT Adm.
Intermediate Outcomes				
High Availability of LGC 2.0	Increased High Availability of LGC 2.0	• Number service interruptions to the services hosted in LGC 2.0 • Number of officials satisfied with the services hosted in LGC 2.0	Number of interruptions Number of officials	Baseline and Outcome / IT Adm. Baseline and Outcome / /KII
Immediate outcomes				
Awareness and attitudes	Increased awareness of enhanced facilities of LGC 2.0	• Number of government officials aware of the improved LGC 2.0 functions (Back up – Disaster recovery site, High Availability (HA) of hosted applications, etc.)	Number of officials	Outcome / User Questionnaire
	Improved attitudes towards enhanced facilities of LGC 2.0	• Number of government organizations with positive attitudes regarding enhanced facilities (Back up – Disaster recovery site, High Availability (HA) of hosted applications, etc.)	Number of organizations	Outcome / Org. Questionnaire, KIIs
Single Web Portal for LGC 2.0 and LGN 2.0	Enabled single web portal for LGC 2.0 and LGN 2.0	• Availability of single web portal for LGC 2.0 and LGN 2.0 • Number of organizations using the web portal for their operations	Percentage availability of web portal	Outcome / Org. Questionnaire
Outputs				
Lanka Government Cloud 2.0 with the establishment of Zone 2 is the main government owned digital infrastructure to facilitate all hosting requirement of the government	Established a highly secured reliable cloud infrastructure ensuring High Availability (HA) for all the hosted applications in IaaS and PaaS clusters of the existing LGC 2.0	• Percentage completion of the Zone 2 of LGC 2.0 • Number of government organizations obtaining services from LGC 2.0 • Number of services given through IaaS, SaaS and PaaS	Percentage completion Number of organizations Number of services	Monitoring / Monthly Data Collection Form Monitoring / Monthly Data Collection Form
	Established Zone 2 of the LGC 2.0 with all the hardware requirements (Bare-metal servers, switches, routers, firewalls, etc.).	• Percentage completion of installation, configuration and commissioning of Bare-Metal servers • Percentage completion of supply, installation & configurations of Application Stack • Percentage completion of procurement of a Service Provider to Provide Co-location services	Percentage completion Percentage completion	Monitoring / Monthly Data Collection Form Monitoring / Monthly Data Collection Form

Description	Results	Indicators	Unit of Measure	Type / Instrument
	Established Zone 2 of LGC 2.0 with all the support and maintenance facilities.	• Percentage of progress of the establishment of the support and maintenance facilities of the Zone 2 • Percentage completion of single website for government network infrastructure	Progress of establishment Percentage completion of website	Monitoring / Monthly Data Collection Form Monitoring / Monthly Data Collection Form
	Training and capacity building of technical staff of the LGC 2.0	• Number of training programmes conducted • Number of officials trained	Number of training programmes Number of officials trained	Monitoring / Monthly Data Collection Form, Org. Questionnaire
	Conducted awareness programmes for the users (government organizations) of LGC 2.0	• Number of organizations participated in awareness programmes • Number of participants in awareness programmes • Percentage of completion of awareness materials (videos, guides, etc.)	Number of organizations Number of officials Completion of materials	Monitoring and Outcome / Monthly Data Collection Form, Org. Questionnaire

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Annexure 4 – M & E MATRIX FOR Video Conferencing facilities to the Government Institutions

Description	Results	Indicators	Unit of Measure	Type / Instrument
Government wide Video Conferencing Facility				
Final Outcomes				
Reduced travel time and cost involved in attending official meetings held outside the office	Reduced travel time for official meetings held outside the office	• Total travel time to participate in official meetings held outside the office per month • Total travel time(cumulative) of all the official-participants (outside) joining the meetings held in the office per month	Travel time - hours Travel time-hours	Baseline and Outcome / Org. Questionnaire/KIIs
	Reduced travel cost for meetings held outside the office	• Total travel cost involved in participating in official meetings held outside the office per month • Total travel cost for participants (outside) joining the meetings held within the office per month	Travel cost-SLRs. Travel cost-SLRs.	Baseline and Outcome / Org. Questionnaire/KIIs
	Reduced cost for conducting meetings within the office	• Total incidental costs involved in conducting meetings within the office premises per month (refreshments, stationary, etc.)	Incidental costs-SLRs	Baseline and Outcome / Org. Questionnaire, KIIs
Increased employee satisfaction	Improved satisfaction of the employees with the performance of video con facilities	• Number of officials accepted that they feel more convenient and has improved day-to- day work because of video conference facilities • Number of officials surveyed accepted that video conferencing facility has allowed employees to collaborate with each other seamlessly and securely • Number of officials accept that video conferencing facilities would improve the service delivery during an emergency situation and increased the collaboration among government departments • Number of officials satisfied with their skills and competencies gained from training sessions on video conferencing platform	Number of officials Number of officials Number of officials Number of officials	Baseline and Outcome / User Questionnaire Baseline and Outcome / User Questionnaire Baseline and Outcome / User Questionnaire Outcome / User Questionnaire
Improved ability to work from home	Improved convenience with the facility to work-from-home	• Number of officials accepted that with the video conference facilities they were able to work-from-home and still stay connected to their co-workers and staff • Number of officials accepted that remote working environment created by the video conferencing facilities improved the quality of life and reduced the work-related stress	Number of officials Number of officials	
Faster decision-making process	Increased efficiency and speed of the decision -making processes	• Number of meetings held with internal staff (online) during a month • Number of meetings held with external staff (online) during a month • Percentage of staff satisfied with the effectiveness of these online meetings • Percentage of meetings recorded by the host	Number of meetings Number of meetings Number of staff members Number of meetings	Baseline and Outcome / Org. Questionnaire Baseline and Outcome / Org. Questionnaire Baseline and Outcome / User Questionnaire Baseline and Outcome / Org. Questionnaire

Description	Results	Indicators	Unit of Measure	Type / Instrument
Citizens and businesses are served effectively through speedy decision-making process.	Increased effectiveness of service delivery to citizens and businesses	• Number of services delivered per day (most 5 important citizen/business services provided by the organization) • Average time taken to deliver for each of these 5 services	Number of services Time taken to deliver services	Baseline and Outcome / Org. Questionnaire Baseline and Outcome / Org. Questionnaire
Intermediate Outcomes				
Increased satisfaction with the V Con Facility	Improved satisfaction of the users with the V Con system	• Number of organization heads and officials satisfied with the performance of V Con Facility	Number of heads and officials	Outcome / User & Org. Questionnaire, KIIs
Satisfied with the performance of the available V Con service	Organizations adopted V Con platforms	• Number of organizations that have adopted V Con platforms and conduct online meetings successfully • Number of employees using V Con facility successfully	Number of organizations Number of employees	Outcome / Org. Questionnaire, KIIs
Immediate outcomes				
Security and authenticity	Improved security and authenticity	• Number of security related issues (unauthorized access, hacking incidents, etc.) • Levels of user authentications for entering into the session (single factor authentication, two factor authentication) • Level of personal willingness to participate at VC sessions for official work (Likert scale)	Number of issues / types Percentage of authentication types Percentages of willingness	Outcome / Org. Questionnaire, Outcome / Org. Questionnaire, Baseline and Outcome / User Questionnaire,
Improved awareness, attitude and skills on the use of video com technology for conducting official meetings	Increased user awareness of the V Con platforms	• Number of users fully aware of functions of V Con Platforms	Number of users	Baseline and Outcome / User Questionnaire
	Improved attitudes towards the use of V Con Facilities	• Number of users with positive attitude towards the use of V Con Facility	Number of users	Baseline and Outcome / User Questionnaire
	Improved skills to operate the V Con Facilities	• Number of users with fully skilled to operate V Con Facilities	Number of users	Baseline and Outcome / User Questionnaire
Outputs				
Established of Video Conferencing platform and conference room facilities for conducting online official meetings	Established video conferencing platform and fully equipped conference rooms in selected 100 organizations (units) by end of 2021	• Fully equipped video conference room established	Number of rooms	Monitoring / Monthly Data Collection Form
Completed change management, adoption & capacity building programmes successfully	Conducted capacity building and change management programmes for relevant government officials who are using V Con Facilities	• Number of training sessions conducted • Number of officers trained	Number of officers	Monitoring / Monthly Data Collection Form
	Completed hands-on-training on the use of Video Conferencing Facilities to relevant staff	• Number of hands-on-training sessions conducted • Number of officers participated in hands-on-training sessions	Number of training sessions Number of participants	Monitoring / Monthly Data Collection Form

Annexure 5 – M & E MATRIX FOR Cross-Government Email collaboration solution

Description	Results	Indicators	Unit of Measure	Type / Instrument
Email and Collaboration Solutions				
Final Outcomes				
Reduction of cost of communication and storage	Reduced cost for paper-based correspondence in the government organizations	• Total cost of printing letterheads; Actuals in 2019 and 2020 and Estimated in 2021 • Total cost of other communication stationery • Number of organizations use a record room facility for safe keeping of paper-based correspondence	Cost of printing letterheads Cost of stationary Number of organizations	Baseline and Outcome / Org. Questionnaire
Efficient and convenient service delivery	Increased efficiency in obtaining services for citizens and businesses by communication using emails	• Number of citizens and businesses confirming increased efficiency by using emails	Number of citizens and businesses	Baseline and Outcome / Citizen Survey
	Increased convenience in obtaining services for citizens and businesses by communication using emails	• Number of citizens and businesses confirming increased convenience by using emails	Number of citizens and businesses	Baseline and Outcome / Citizen Survey
	Reduced complains and issues related to communication with G2G, G2C and G2B	• Number of complaints received from citizens and businesses per month regarding email communication • Level of citizens/businesses satisfaction relating to quality of email communication (timely delivery, reliability of delivery, convenience)	Number of complaints and types Percentage of satisfaction levels	Baseline and Outcome / Org. Questionnaire Baseline and Outcome / Citizen Survey
Acceptance of email communication by citizens/businesses	Increased number of citizens and businesses using email for communicating with the government organizations	• Number of citizens communicating using emails • Number of businesses communicating using emails • Number of businesses accepting government email communication	Number of citizens and businesses	Baseline and Outcome / Citizen Survey
Government employees provided with e-mail accounts have effectively adopted for official communication	Government officials adopted the use email for their day-to-day communication processes	• Number of official emails send per week • Number of official emails received per week • Number of unopen emails in the official mail box	Number of emails	Baseline and Outcome / User Survey
Employee satisfaction with the government email platform	Improved satisfaction of the employees with the facilities provided by government email solutions	• Level of satisfaction of the email users with the government email facility and collaboration tools (chat, document sharing, calendar, contact list, storage capacity, security, spam filters) • Number of security related incidents (unauthorized access, hacking incidents, spams, malware, etc.)	Percentage of satisfaction level Number of incidents	Outcome / User Survey Outcome / Org. Questionnaire
	Improved satisfaction of the employees with the performance of email and collaboration solutions	• Availability of email facility (24x7) • Level of satisfaction of the email users with the user interface of government email solution	Percentage of availability levels Percentage of satisfaction levels	Baseline and Outcome / Org. Questionnaire Baseline and Outcome / User Survey

Description	Results	Indicators	Unit of Measure	Type / Instrument
Ability to work from anywhere	Enabled work from anywhere using government email and collaboration tools	• Number of government officials confirming using emails system from outside the office	Number of government officials	Baseline and Outcome / User Survey
Intermediate Outcomes				
Speedy communication: G2G, G2B, and G2C with government email solution	Improved the speed of decision-making process	• Number of heads/executive level employee accepted that the decision-making process has improved after adopting government e-mails solution • Reduction of time taken to obtain services / response	Number of heads and officials Time taken to obtain service	Baseline and Outcome / User & Org. Questionnaire, KIIs Baseline and Outcome / Citizen & Org. Questionnaire
Use of new official email account	Adopted government email communication instead of paper-based communication	• Number of officials use email communication instead of paper-based communication	Number of officials	Baseline and Outcome / User Survey
Implementation of new email policy in the government	Adopted government email policy by the government organization	• Number of organizations adhering to the password policy • Number of organizations adhering to the data protection policy • Number of organizations entered service level agreements with ICTA • Number of organizations maintains a record of email accounts life cycle management (creation /activation / deactivation)	Number of organizations	Baseline and Outcome / Org. Questionnaire, KIIs
Immediate outcomes				
Use of government email solution	Government officials transferred their personal and other isolated emails to newly established official email solution	• Number of government officials who have transferred their email archives to government email system	Number of government officials	Baseline and Outcome / User Survey
Security and authenticity	Established secured and authenticated email communication facilities for G2G, G2B, and G2C	• Number of heads/executive level employee accepted that the communication through government email system is highly secure • Number of GoSL organizations adhere to digital authentication policies; (biometrics authentication, password authentication, multifactor authentication, certificate authentication, token-based authentication)	Number of heads/executive level employees Number of organizations	Outcome / Org. Questionnaire, KIIs Baseline and Outcome / Org. Questionnaire, KIIs
	Implemented best practices in the email usage by the organizations	• Number of organizations use secure email gateways, automated email encryption solutions, strong passwords, password rotation, spam filters, image and content control • Number of organizations maintaining a security and incident management process	Number of organizations Number of organizations	Baseline and Outcome / Org. Questionnaire
	Increased user awareness on communication through emails	• Number of users aware the benefit and important of using email for official communication	Number of government officials	Baseline and Outcome / User Questionnaire

Description	Results	Indicators	Unit of Measure	Type / Instrument
Awareness, attitudes and skills on the use of email within GoSL employees	Improved attitudes towards the use of email and collaboration solutions	• Number of users accept the use of emails for official communication is advantageous	Number of government officials	Baseline and Outcome / User Questionnaire
	Improved skills to operate the email and collaboration solutions	• Number of users who are confident in using email and collaboration solution	Number of government officials	Baseline and Outcome / User Questionnaire
Outputs				
Establishment of exclusive email platform for the government officials	Created 100,000 email accounts for official communication of government employees	• No of active email IDs created and handed over for the official use	No of email IDs created No of email accounts handed over	Monitoring / Monthly Data Collection Form
	A highly reliable, secure single authorized email communication platform established for the official use for GoSL employees	• Percentage completion of the email and collaboration solution with basic functionalities	Percentage of completion of email and collaboration solution	Monitoring / Monthly Data Collection Form
GoSL Policy for email use	Established GoSL policy for email use	• Percentage completion of the policy framework on use of email and collaboration solution • No of organizations adopted the email policy	Percentage of work completion on policy framework No of organizations adopted the policy framework	Monitoring / Monthly Data Collection Form Monitoring / Monthly Data Collection Form, Org. Questionnaire
Training, awareness building and administrative support	Conducted awareness and training sessions for GoSL employees on the use of government email solution	• No. of end user workshops conducted island wide • No. of participants trained • Percentage of participants satisfied with the training quality and effectiveness • No participants satisfied and accept increased knowledge about email usage	No of workshops No of participants Percentage of participants satisfied on training No of participants	Monitoring / Monthly Data Collection Form, Org. Questionnaire
	Established email administrators, and support structure to handle all email related issues	• No. of organizations with email administrators appointed • Percentage of organizations with operations and support structures (Technical Team) in place • Level of satisfaction of the users with the operations of the support structures	No of organizations Percentage of organizations Percentage of satisfied users	Monitoring / Monthly Data Collection Form, Org. Questionnaire Monitoring and Outcome / Monthly data collection form, User Survey

Annexure 6: Challenges and Limitations in Baseline Study Field Work

The field team visited 97% of the planned government organizations.

1. **Common Challenges Faced in Data Collection**

- **COVID-19 pandemic situation**

  Though the country is open after several lockdowns, still the country was operating under the COVID-19 health guidelines stipulated by the Ministry of Health. This caused several challenges to the field survey teams during the data collection. Some of the challenges are as follows:

  1. Reluctant to participate in face-to-face interviews

     Although the field staff followed strict health guidelines such as wearing facemasks and keeping the social distance, some institutions and staff members were reluctant to participate in face-to-face interviews with the survey team members because of the COVID-19 situation. In some organizations, outsiders were restricted from entering the office premises. In such situations, virtual meetings were conducted. Also, in some occasions the distance between interviewer and respondent was more than 3 to 4 meters. In such cases, it was not possible to discuss sensitive issues with the respondent in an open office.

  2. Unavailability of staff members in the organizations

     There were some organizations where staff members were quarantined due to their exposure to COVID-19 patients. Also, in some organizations only, half or 1/3 of the total staff was coming to work on a roaster basis. In such situations, the field team had to manage with available officers for data collection and phone numbers were collected of necessary officers to contact if needed to collect data.

  3. Unavailability of citizens

     In the most of the high-level institutions (ministries, departments, provincial councils, etc.) the team could not get the citizens' views due to the restrictions placed on citizens visiting the offices. In some instances, the team managed to collect contact details of citizens who had obtained services recently from the organizations.

- **Scheduling Appointments**

  One of the most challenging tasks was scheduling appointments with the institutions. Following are the major reasons and methods followed to overcome those challenges.

  1. Unavailability of contact details

     All the institutions were contacted through the official emails and given contact numbers for scheduling appointments. Most of these contact details were collected from official websites of the institutions. But there were considerable number of organizations whose contact details are not available or information available in the websites were outdated. Even some of the emails that were sent by ICTA were returned because those emails are not being used anymore.

     Most of the contact details of these organizations were found out by visiting the organizations or handing over the printed letter to respective organizations. Also, ICTA M&E Team and Field Team were able to get the correct emails and telephone numbers through the known employees (friends, official contacts) in those organizations.

2. Lack of response from the institutions
An official letter was sent by ICTA to each organization requesting their support for the data collection process. Then all of these institutions were contacted over the telephone to inform more details and schedule the appointments. But the response for the emails and phone calls were very poor. Most of the appointments were scheduled after several reminders to each organization.

- **Time gap and distance between locations**
Though the data collection process was planned according to a schedule, it was not easy to make appointments according to a strict time slots and expected order of the organizations. This is due to the busy work schedule in most of the organizations. This situation caused following problems:
    - Insufficient time to complete the data collection in some organizations
    - Distance to the locations where travelling takes more time with the traffic situations
    - More than two appointments scheduled in same time

After observing these constraints, the size of the teams was increased depending on the locations and time gap between two organizations. However, this has to be managed with the available team members who were trained.

- **Unavailability of suitable officers**
It is necessary to conduct user surveys with the officers who are currently using emails and video conferencing for their official communication. But when it comes to mid or ground level organizations such as Divisional Secretariats, Urban Councils and some of Statutory Bodies there were no sufficient numbers of suitable officers available to conduct the user survey.

Also, in some organizations only one or two email addresses are available and more than one person has access to these emails. Sometimes all the officers in the division/department have access to this common email account. In such occasions it was not easy to gather the data such as number of emails send by an officer.

- **Time taken to complete a location**
In most of the project components (Email, VCon, & Forms) Key Informant Interview (KII), an interview with IT Director/Officer, organizational questionnaire survey, around 10 user surveys and 5 citizen surveys were planned. As per our observations it takes minimum 2 and half hours to complete one location though the number of field staff is increased because the time taken depending on the availability of officers, time taken to retrieve some information (financial data, record room data) and support provided by the organizations to conduct the survey.

This became more complicated when there were two or more project components to be implemented in the same organization. For KIIs it took more than 1 hour since the officer raised several queries about the project, making it difficult to both the respondent as well as enumerators.

- **Collection of organizational level data**

  Organizational Data Collection is the most important data collection tools to establish critical indicator values. The data had to be collected from each division in the organization. In most of these locations there was no responsible person to support the team or provide data. Also, in most of the divisions there were no reliable information such as number of meetings held, number of emails sent/received, travel distance, etc. Therefore, standards methods were developed by consultants to gather this information indirectly. But it was also challenging because most of organizations don't monitor most of these aspects regularly.

  In some of the organizations, divisional heads were not informed about the data collection process by the head of the organization/respective officer. As such, some divisional heads refused to provide the data and the team had to go back to get permissions and make necessary arrangements. This process took considerable time for data collection.

- **Conducting FGDs**

  Conducting FGDs was challenging due to the COVID-19 pandemic in the country. Most of the organizations rejected the request to conduct group discussions within the organizations. But somehow the team was able to conduct FGDs in some organizations with the permission of head of the institution.

- **Gender balance**

  In most of the government organizations majority of the staff were females. So, it was not easy to balance the male-female ratio when conducting the user surveys.

- **Past experiences with ICTA**

  There were some organizations had negative experiences with ICTA in the past and therefore, these officers' feedbacks and approach to discussions was not pleasant. In such occasions the data collection team has managed to explain to them about the study and its purpose and CERC Digital Transformation Project to convince them to have a fruitful discussion.

- **Organizations required special permissions**

  In some organizations such as Department of Police, It was necessary to obtain special permissions to conduct data collection. The team has managed to collect data as much as possible within the given level of permission from the head.

- **Unsupportive organizations**

  Some of the organizations were not supportive towards data collection. It was observed that this varied factors such as:
  1. Poor attitudes of the head of organization towards this kind of a project
  2. Past experiences organizations had with ICTA

2. Project Specific Challenges

Other than the common challenges there were few project specific challenges raised while conducting the data collection process.

- **Government-wide Email and Collaboration Solutions**

  Obtaining organizational level data was the major issue in Email Solution data collection. In some of the organizations financial data was not readily available and requested more time to provide this information. In such occasions contact details of respective officers were obtained to collect data later on. Also, in most of the organizations there was no log of emails received or sent.

  According to the sample size it was necessary to conduct 11 user surveys with whom the use emails for their official communication. But there were not enough participants in some organizations such as Divisional Secretariats, and small statutory bodies.

  Also, it was needed to carryout email user survey with 90 Grama Niladharis. It was planned to collect these data when the team visit Divisional Secretariats for Form.gov.lk project data collection. But as Grama Niladhari's were not available in the Divisional Secretariats the data collection was carried out through telephone conversations with the details obtained from Divisional Secretariat websites.

- **Government Video Conference Solution**

  Major challenge for the video conferencing solution also was collection of organizational level data. Specially officers haven't kept track of number of meetings conducted, participants for the meetings, travel distance to attend meetings, etc. Mostly they have provided rough numbers as they remember.

  According to the sample size, seven user surveys were to be conducted in each organization visited. But in most of the organizations such as Divisional Secretariats, Provincial Departments, Local Authorities only Head or Deputy Head participate for the online meetings. Therefore, it was very unlikely to find out 7 people who participate for Video Conference meetings.

- **Expansion of Lanka Government Cloud (LGC 2.0)**

  There are few key challenges which the data collection team has faced while carrying out data collection regarding LGC 2.0.
  1. Negative attitude towards LGC due to the past experiences; the officials haven't provided data in a positive mindset towards the project because of this issue
  2. In some organizations IT officer or HoD have no clue of the applications, data bases or e-systems hosted in LGC from the organization
  3. Not available of an ICT officer with technical background – in the most of organizations IT tasks are handled by Graduate Trainees or Development Officers

- **Form.gov.lk – submit government forms electronically**

  Following are the few key challenges the team has faced during the data collection.
  1. Divisional Secretariats are the busiest organizations compared to other organizational categories in the sample. This is because they provide most of the citizen/business services. The field team members had to wait with the citizens to conduct KIIs with Divisional Secretaries though the appointments were scheduled beforehand.
  2. Most of the Divisional Secretaries, IT Officers and other officers are not familiar with the project concept compared to other high-level organizations. It seems this is due to lack of technical

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knowledge regarding the ICT and use of these kinds of systems. Field Staff members have explained the concept thoroughly to them before conducting the KII and other data collection.

3. Unavailability of ICT officers also was a challenge for the data collection. In most of the Divisional Secretariats ICT tasks are handled by Graduate Trainees or Development Officers.

4. Collection of Organizational Data took more time as the data regarding services had to be obtained from officers in-charge for each service. Also, most of the officers are not certain of the information they have provided (Ex: number of services per month for some services, time taken to obtain some services, size of the organization premises).

5. Some of the services are not provided by the divisional secretariats.

Annexure 7: Quality Assurance Aspects

1. Measures to Taken to Ensure High Response Rate and Data Quality

To ensure the reliability and validity of collected data, consultants will follow the best practices as given below:

- High standards were maintained in recruiting suitable persons with experience as Field Staff and comprehensive training were provided on interviewing techniques and the subject specific matters of the survey.
- Data collection was conducted in a language conversant to the respondents. As far as possible female enumerators were allocated to interview female respondents.
- Interviews were conducted at a time most convenient to the respondents.
- Interviewing etiquettes were strictly followed by the enumerators and survey supervisors were closely monitor the process.
- The interviewer was assured the respondents of the confidentiality of information, indicated the time required for completing the interview and sought his/her approval to continue with the survey.
- The interviewer responded adequately to any query raised by the respondent.
- The interviewer was recorded responses during the interview and not wait until the interview is completed.
- Responses were` noted down in the language of respondents, keeping the same phrases, grammatical usages, and peculiarities of speech.
- Field staff members were advised to submit the typed transcripts (without submitting handwritten version). It was clearer and also indirectly transcripts were double checked.
- Data entering is supervised by Survey Manager and provided necessary instructions when needed. Data entry team was instructed to contact field officers for clarifications on the data. Field Officers were advised to contact the respondents to obtain any missing data.

2. Best Practices Followed to Ensure Quality of Data Collection

- The survey consultant / head of field staff undertook random field visits during person to person interviews/participate in online meetings to ensure surveys are conducted appropriately and acceptably.
- Completed questionnaires were scrutinized first by the survey supervisor to ensure completeness and accuracy of the filled responses and incomplete questionnaires were returned to the field enumerator to complete the same.
- Entered data was randomly checked to ensure accuracy.
- Dummy output tables were developed before generating actual survey results.
- Key Informant Interviews were carried out by competent staff using a group of respondents in keeping with the best practices.
- Focus Group Discussions were carried out by senior field officers with the participation of one or two junior field officers as note takers.
- Reports were generated and presented to ICTA M&E Unit in keeping with the agreed formats and frequencies. Wherever needed, recommendations were made to improve the existing situation.
- Findings will be discussed with ICTA staff and presented to the management staff.

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