

ICT Strategy Report (Project Plan)

for

**The Commission to Investigate Allegations of Bribery or
Corruption**

07 August 2007

National Project Coordinator
United Nations Development Programme (UNDP)
202-204
Buddhaloka Mawatha
Colombo 7

Dear Sir/Madam,

**Develop a Comprehensive ICT Strategy and Implementation Plan for the
Commission to Investigate Allegations of Bribery or Corruption (CIABOC)**

ICT Strategy Report (Project Plan)

We are pleased to forward to you the revised ICT Strategy Report for the Commission to Investigate Allegations of Bribery or Corruption based on the discussion held between Mr. Rajiv Ranjan, ICT for Development Advisor of UNDP and the PwCL team on 02 August 2007.

The report documents the current IT environment, proposed applications to support the functional requirements of the CIABOC along with strategic options, supporting technology, IT security and governance. A preliminary transition strategy is also presented.

As these requirements will form the basis for the development of the detailed action plan and cost estimation to put into operation the proposed solution for the CIABOC, it is essential that they be confirmed as accurate and complete, before commencement of the next milestone.

We look forward to receive your comments within one week, so that the development of the action plan is as scheduled.

Please contact Mrs. Florence Fernando if you require any further clarifications.

Yours sincerely,

Mrs. Lilani de Silva
Director
PricewaterhouseCoopers Lanka (Pvt) Ltd.

Cc: Mr. Ameer Ismail, Chairman of the CIABOC.

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for
The Commission to Investigate Allegations of Bribery or
Corruption

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1. Introduction

United Nations Development Programme (UNDP) engaged PricewaterhouseCoopers Lanka (PwCL) to analyse and develop an ICT Strategy and Implementation Plan for the CIABOC.

Based on the analysis of the high level requirements, the target applications were identified. The gaps between the current and target applications were analysed to determine whether existing applications should be retained or replaced. This was followed by the listing of proposed applications, in order to satisfy the current and future needs of the CIABOC.

The review of the CIABOC business processes, organisation and systems revealed the need to optimise business processes and the organisation IT structure. The age and inflexible nature of the existing IT infrastructure is impacting the company's business objective and in many areas represent a significant barrier to success and future growth.

Strategic options were analysed and the implementation options are proposed as the most appropriate way forward. Based on the proposed applications and architecture, the technology strategy is proposed along with the capacity requirements and specifications.

IT security and governance strategy is also proposed to implement and support the proposed applications and technology.

Finally, a transition strategy that covers the 'Quick Wins', the required projects and phases to implement the documented ICT Strategy is presented.

The next phase will be the review, amendment (if required) and formal development of Action Plan.

2. Business Drivers

2.1 Business Goal and Strategy

The business goal of the United Nations Development Programme (UNDP) is to reduce corruption by increasing efficiency, effectiveness and accountability of the CIABOC as a duty bearer, and empowering ordinary citizens to report and follow up incidents of corruption without fear of reprisals. The three main objectives are:

- A strengthened and well functioning CIABOC be able to fully carry out its mandate
- Increased awareness among citizens about corruption and a strong media reporting on corruption issues
- Greater political, judicial and legislative awareness and commitment to reducing corruption in public affairs and non-interference in corruption proceedings

The project initiated by the UNDP aims at enhancing the capacity of the CIABOC in a way that is both sustainable result oriented and to play an important role in advancing the anti-corruption agenda nation wide. UNDP has also considered important to make the CIABOC functionality more efficient and effective whilst making it a truly independent institution.

2.2 Business expectations of the ICT Strategy

The table 2.1 provides a comparative analysis of the present state as opposed to the vision of the future, through an illustrative scenario of the CIABOC. The vision of the future is identified on the basis of near term, medium term and long term.

Organisation Today	Organisation Tomorrow	
<ul style="list-style-type: none"> The end to end process flow is broken within different systems and divisions. Significant amount of manual paperwork and reports. Share management information reports manually to the line ministries and stakeholders. Complaints logged by Citizens nation wide are processed in a centralised location. 	<ul style="list-style-type: none"> An automated system to support the end to end workflow with minimal paperwork. 	N E A R
	<ul style="list-style-type: none"> Integrate the Commission's information management system with its information outlet, selected line ministries and other stakeholders. 	M E D I U M
	<ul style="list-style-type: none"> Island-wide distributed operations of the Commission so that to citizens could log and follow up complaints at points convenient. Seamless integration with a fully fledged e-governance infrastructure. 	L O N G

Table 2.1 Business Expectation of ICT Strategy

2.3 Key Business Drivers

- Improve customer relationship.
- Introduce efficiency and improvement the business processes at the CIABOC.
- Achieve transparency and availability of data across functions (divisions and units) ensuring the confidentiality of the data.
- Obtain right information at right time for effective decision making.
- Adopt systems that address changing technologies.

2.4 Key Challenges

- Identify high ranking official from the CIABOC; initiate to gain a smooth change over by creating awareness among peers with new systems implemented.
- A careful workflow analysis needs to be done and reengineered to accommodate the full benefit of computerisation.
- Significant training to the staff of the CIABOC in order to increase the productivity by using a computer assisted information system and ensuring security of the important data.
- Interfaces of systems proposed and interaction with the system to facilitate at least in two languages: English and Sinhala.

2.5 Overarching Assumptions

- Less than half of the staff of the Commission is computer literate.
- Some of the documents must remain paper-based for legal acceptance.

2.6 Risks

- Some people are used to carry out their tasks in the same way for many years and there will be some level of **resistance** at a non-executive level.
- Change of **mind-set** that requires using the system due to perceptions that data on the computerised system is less secure than the current paper-based system.

3. Current IT Environment

3.1 Business Process

The study of business functions and processes have been documented in the Current State Assessment report, which provides a clear and detailed view of the operational aspects of the CIABOC. It is a valuable reference and as such should be maintained and used for subsequent implementations of the systems. The study covers the following functions:

- Handling complaints, investigation and prosecution
- Management of finance
- Human resource management and administration

Based on this study, the issues of the key business processes are:

- **Rigid conformity to the processes followed:** All the activities need to be included in a documented end to end workflow and supported by an automated system to ensure that a clear and efficient process is followed.
- **Lack of controls and alerts:** Difficulty to manage and control the end to end process flow as it is broken within different systems and divisions. This is also due to the fact that there is still a significant amount of manual paperwork and reports.
- Delay due to **manual approval process:** An online approval process for complaint, etc can facilitate the process and increase efficiency.

3.2 IT Applications

The figure 3.1 summarises the applications currently operational at the CIABOC that help carry out the main functions of recording complaints, accounting, budgeting, payroll calculation and reporting.

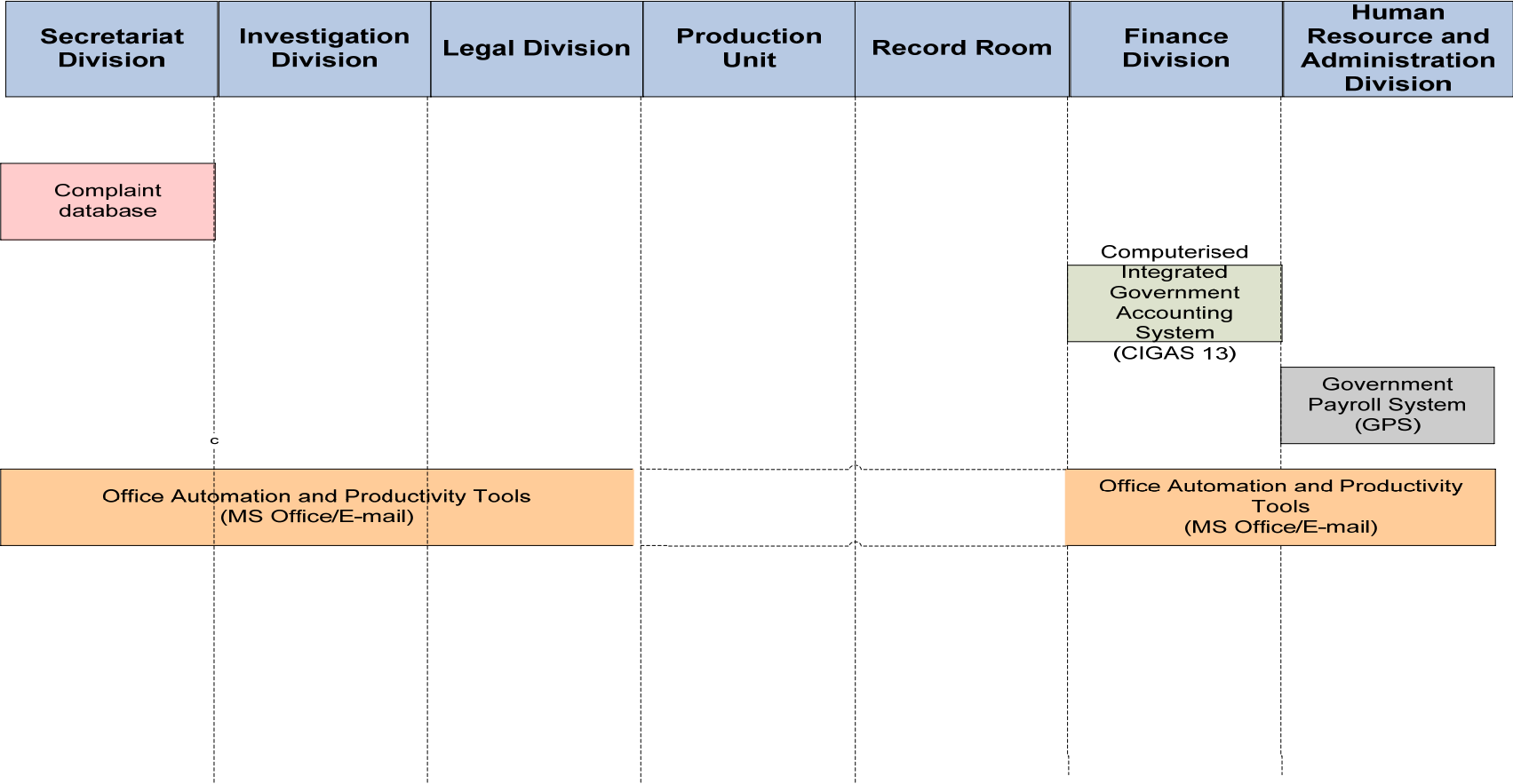


Figure 3.1 Applications Currently Operational at the CIABOC

The strengths and weaknesses of the current applications implemented at the CIABOC are listed below:

Strengths:

- Custom made Computerised Integrated Government Accounting System (CIGAS) and Government Payroll System (GPS) to suit the public sector accounting and payroll so that reporting to the relevant authorities is made easy.
- Use of complaint database and office automation tools such as Microsoft Office suite has given some computer awareness to the end users of the CIABOC.

Weaknesses:

- Complaint database is limited to the Secretariat Division. There is no specific system to aid the Investigation Division, Legal Division, Production Unit and Record Room activities.
- CIGAS 13 and GPS systems are single user systems which do not enable online processing.
- Majority of the features in the CIGAS 13 and GPS systems are not used by the CIABOC.

3.3 Technology

The figure 3.2 depicts the present network and hardware component layout at the CIABOC.

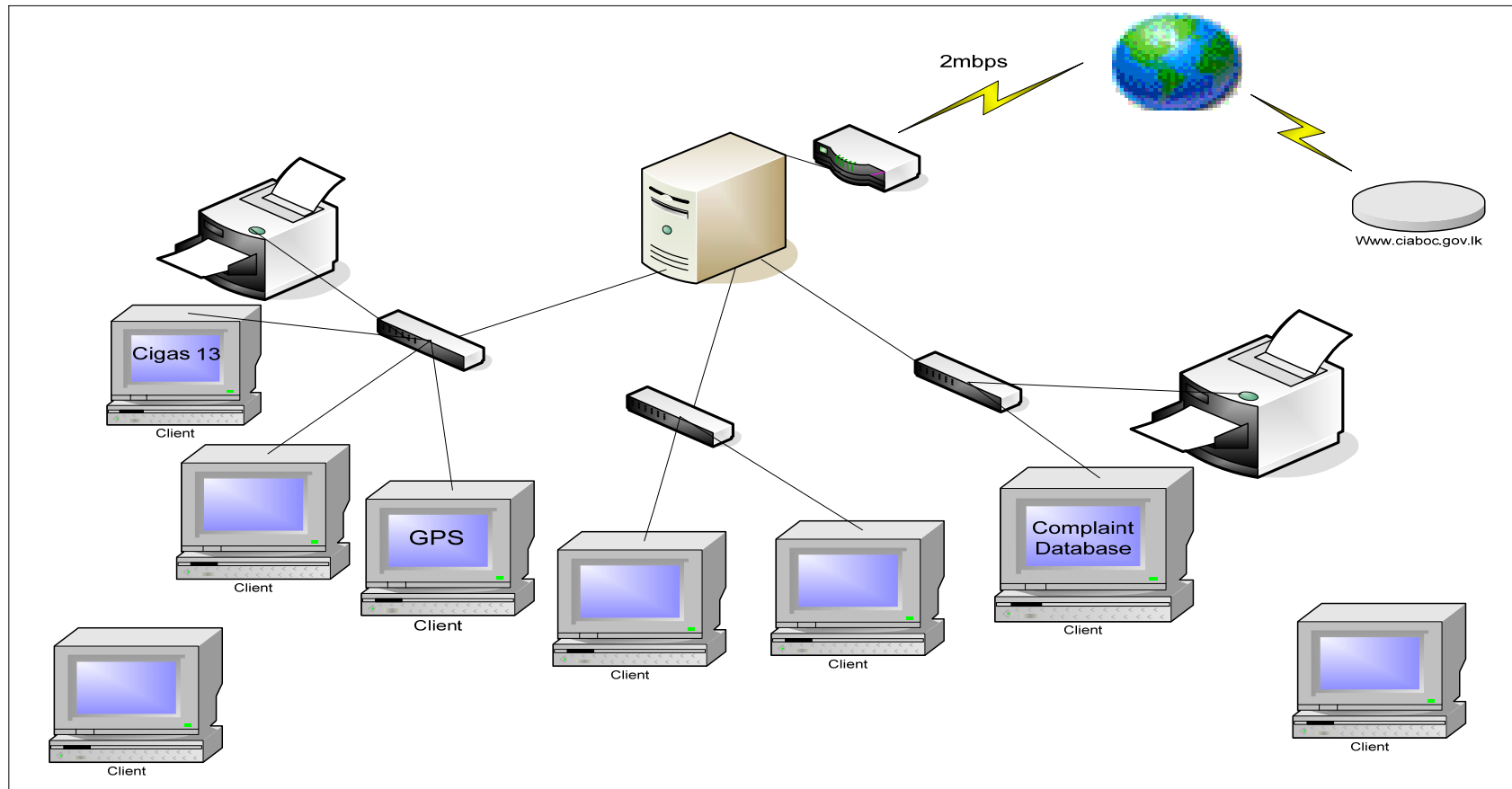


Figure 3.2 Present Network and Hardware Layout at the CIABOC

The strengths and weaknesses of the current technology are listed below.

Strengths:

- Availability of a Local Area Network (LAN) with a high end Server and Internet connection through 2mbps ADSL link.
- Availability of Web site to provide information to the citizens.

Weaknesses:

- Inadequate backup mechanisms to protect data loss due to disaster.
- Lack of physical and environmental security, to maintain the confidentiality of the information residing in the system.

3.4 Management

The staff of the IT Division report to the Human Resource and Administration Division. The roles and responsibility of the IT Division are described in table 3.1

Designation	No. of Positions	Roles and Responsibilities
IT Assistant (ITA)	1	<ul style="list-style-type: none"> • Maintenance of network (internal LAN of the CIABOC) • Software support to users (eg: installation of new software) • Troubleshooting and resolution of IT related issues • Applying timely patches and upgrades to software • Other IT related supporting tasks and user support
Data Entry Operator (DEO)	1	<ul style="list-style-type: none"> • Input of data into the complaint system • Maintenance of dynamic web pages at (www.ciaboc.gov.lk) • Troubleshooting and resolution of IT related issues • Other IT related supporting tasks and user support

Table 3.1 Roles and Responsibilities of the IT personnel

3.5 ICT skills

A formal computer awareness programme funded by the UNDP was conducted by the IDM Computer Studies (Pvt) Limited. Forty six percent (46%) of the Commission staff had undergone the awareness programme on the 'Microsoft Office' package and is familiar with the following products.

- Microsoft Word
- Microsoft Excel
- Microsoft Power Point
- Microsoft Outlook

The Fields Officers of the Investigation Division have not undergone the formal awareness programme. The table 3.2 depicts the number of IT skilled staff in each division of the Commission.

Division	Total no. of staff	No. of ICT skilled staff	Percentage (%)
Secretariat	12	12	100
Investigation	102	20	20
Legal	15	15	100
Production	4	4	100
Finance	11	11	100
Human Resource Management and Administration	10	10	100
Record room	1	0	0
	155	72	46

Table 3.2 IT Skill

4. Applications Strategy

Based on the process study, a detailed requirement specification was developed by PWC and confirmed by the key staff of the CIABOC. A list of staff who participated in the workshop is attached in Appendix A. The detailed requirement for each of these applications is attached in Appendix B. The list will be used as a guideline in the procurement and implementation stage. The functional requirements have been grouped into target applications. Each of these target applications are described in this section.

4.1 Target Applications

The target applications identified for the CIABOC fall into three broad categories:

- Core Application Systems
- Support Systems, and
- Office Automation and Productivity Tools

The significant feature for each of these applications is described in this section. Figure 4.2 “Target Applications Architecture”, provides a high level view of the architecture for the proposed applications, illustrating the interfaces and information flows between the user, application and database.

4.1.1 Core Application Systems

These applications support the core functions of the CIABOC. They include the main functions such as complaint registration, investigation, prosecution, and maintenance of production, archiving and the approval process of the Commission.

Complaint Handling and Case Management System (CHCMS): The Complaint Handling and Case Management System will manage and monitor cases from registration to preliminary analysis to investigation to legal review to prosecution to closure within an organisational context. Specifically, the CHCMS will require a task oriented model of software design that encompasses the processes required to process a case in a way that is oriented toward closing a case. In addition to information, documents and records, it includes video clips, audio files and other objects. The following features are required to cater the functions of CHCMS.

- **Workflow Management:** This system will enable to define proper flow of processes, assign tasks to person and tracking of status in relevant milestones.
- **Documents and Record Management:** This system will facilitate the maintenance and access to important classes of documents including those relating to the complaint, investigation, case, policies, laws, and regulation.

- **File Tracking:** This will help locate files that are transferred within divisions as part of the work processes.
- **Content Management:** This will enable to create and maintain web pages, and publish information on the Web site.

4.1.2 Support Systems

The applications classified under the ‘Support’ category generally correspond to functions that are not considered part of the CIABOC’s core functions, but are nevertheless, considered. The support systems are as follows.

- **Financial Accounting System:** The Financial Accounting System (FAS) will consist of a suit of modules that support accounting and public sector financial management. These modules will be integrated with each other and with the other applications as required and operate on-line rather than on a batch update basis. The proposed modules are:
 - General Ledger
 - Cash and Treasury Management
 - Accounts Payable
 - Budgeting
- **Human Resource Management System:** The Human Resource Management (HRM) system will consist of a suit of modules that support the activities of the Human Resource and Administration Division.
 - Personnel Management
 - Payroll
 - Time and Attendance
- **Loan Management System:** The loan management system will manage information of loans provided to the employees of the CIABOC.
- **Requisition System:** The requisition system will manage the information of the inventory of stationary and other items.
- **Fleet Management System:** The fleet management system will manage the information of vehicles.

4.1.3 Office Automation and Productivity tools

The office automation and productivity tools comprise the usual suit of word-processor, spreadsheet, and presentation software, supported by messaging and reporting software. Many of the support applications proposed in this section could, in fact be implemented by adoption of these standard products combined with focused staff training.

4.2 Gap Analysis of Current Vs Target Applications

The status of the current applications was assessed in terms of functionality, technology, ease of maintenance and reliability. This will form a basis in determining whether these applications should be retained, enhanced or replaced in the target environment.

Key Functions/Divisions/Units	Current Applications	Assessment of the applications
Registration (<i>Secretariat Division</i>)	Compliant database to log and monitor the complaints	Replace existing systems to manage complaints from registration to archiving the file.
Investigation (<i>Investigation Division</i>)	No system	New system to support the functionality of Investigation Division.
Legal advice and prosecution (<i>Legal Division</i>)	No system	New system to support the functionality of Legal Division.
Maintaining production (<i>Production Unit</i>)	No system	New system to support the functionality of Production Unit
Finance	Computerised Integrated Government Accounting System (CIGAS 13)	Retain existing system and usage of all modules prevailing in the system. The CIGAS system is used in Sri Lanka's public sector. It has been developed and maintained by the System and Training division of the department of State Accounts.
Human Resource Management	Government Payroll System (GPS) No system to maintain employee details, training and time and attendance	Retain existing GPS system and use upgraded version. Present standard application which is used in Sri Lanka's public sector. It has been developed and maintained by the System and Training division of the department of State Accounts. New system to support the functionality of time and attendance, training and human resource development.
Administration	No system to maintain details of loans, inventory and vehicles.	New system to support the functionality of administration activities.
Archiving (<i>Record Room</i>)	No system	New system to support the functionality of Record Room.

Table 4.1 Gap Analysis

4.3 Proposed Target Applications

Based on the gap analysis, the proposed applications for the CIABOC are illustrated in figure 4.1.

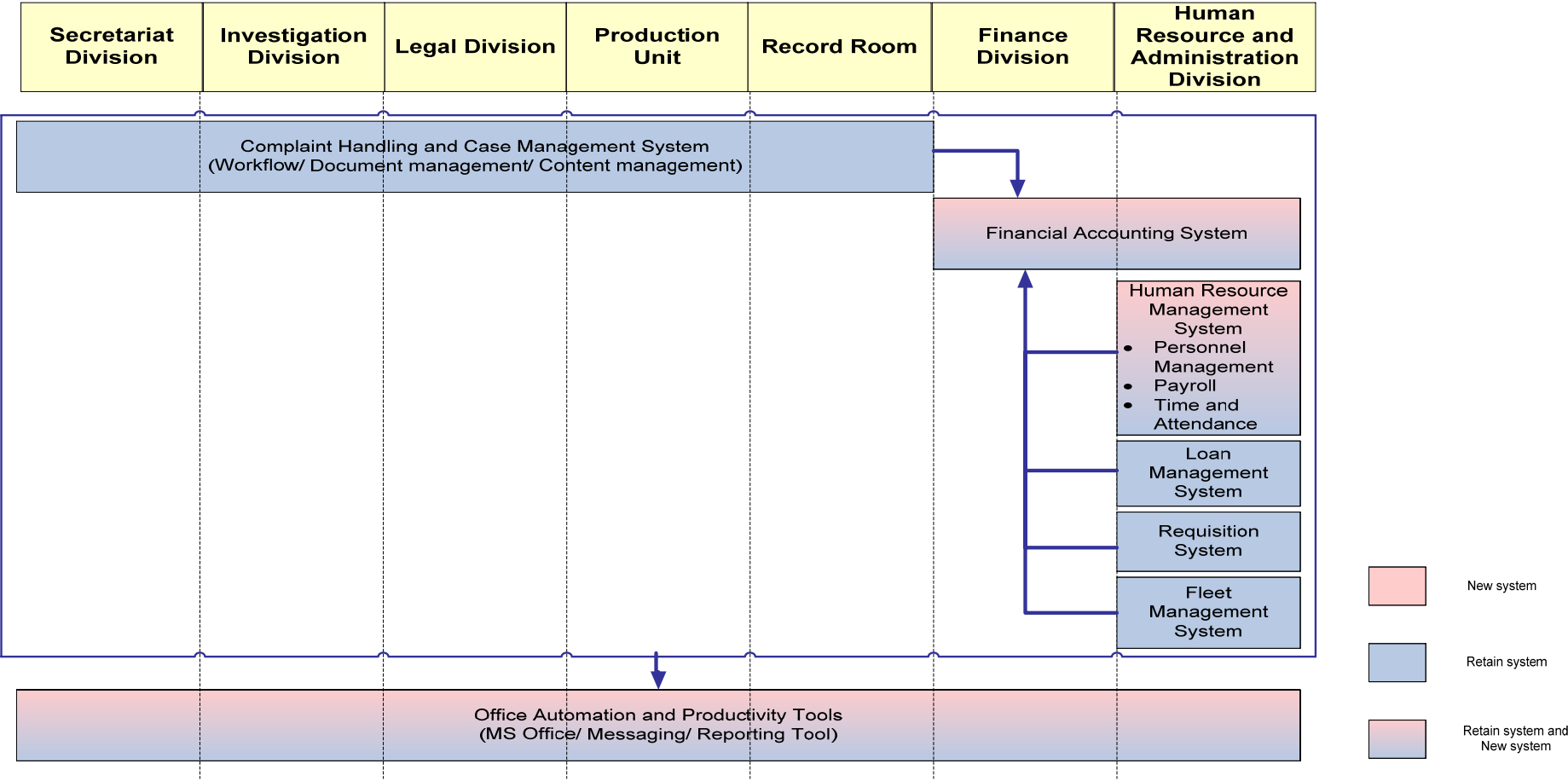


Figure 4.1 Proposed Applications for the CIABOC

4.4 Target Applications Architecture

The Core Application ‘Complaint Handling and Case Management System’ will be a web or portal based application with a shared database in a centralised location to access over the Intranet and Internet. It will allow the line agencies and citizens to access over the Internet and also support seamless integration if the CIABOC decentralises the operations island wide. The Financial Accounting System and Human Resource Management System will be web enabled applications that will allow the internal employees to access the system over the intranet. The interface between the Core Application and external applications will be facilitated through an Interface application. The logical blocks of the proposed solution is shown in the following figure 4.2.

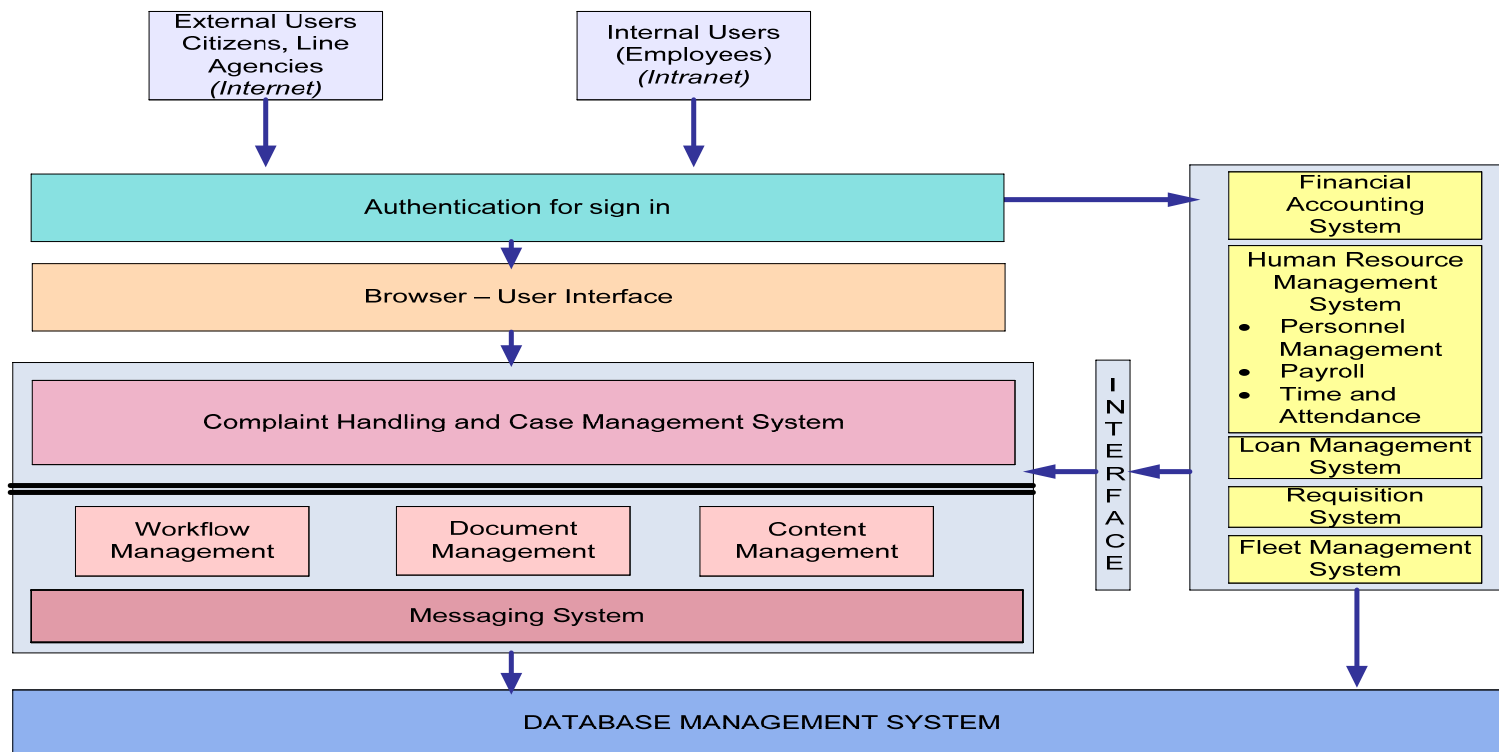


Figure 4.2 Target Application Architecture

4.5 Implementation Options and Prioritisation of Target Application

The best way to implant the target applications and priorities are summarised in table 4.2.

Application	Implementation Options	Priority	Comments
Office automation and productivity tools	Standard product	1	To familiarise with the basic use of systems.
Complaint handling and case management system	Package software	2	High priority application. It is prioritised to second since the backbone (such as emailing and messaging) to implement the application should be set-up and users should be trained.
Human resource management – Personnel management and Time and attendance	Package software	3	It is critical to the CIABOC in order to track both present and past staff details since most of the staff at the CIABOC are employed on a secondment basis for a period of five years. It is also critical to track the attendance details of the CIABOC staff.
Fleet management system	Custom software	4	It is critical to the CIABOC in order to track the mileage record and maintenance of Vehicles.
Loan management system	Custom software	5	Manage manually since the data volume is low.
Requisition system	Custom software	6	Manage manually since the inventory is maintained only for stationary and small items.
Financial accounting system	Package software	7	A single user system is in use. It is customised to suit the Sri Lanka public sector.
Human resource management - Payroll system	Package software	8	A single user system is in use. It is customised to suit the Sri Lanka public sector.

Table 4.2 Implementation Options and Priorities

4.6 Strategic Options

The independent pre-selection of products was carried out through extensive search on the PwC technology database, taking into consideration of the requirements of the CIABOC and the availability of these products in the Sri Lankan market.

4.6.1 Office Automation and Productivity Tools

The office automation needs of the CIABOC comprise the usual suit of word-processor, spreadsheet, and presentation software, reporting tool supported by e-mail and document management software and some project management software. Proposed solutions for each of these are presented in table 4.3. The proposed solution is based mainly on the existing suit and familiarity of the product. However, open source products can be considered as an alternative.

Application	Proposed product	Alternative Product
Word Processing	Microsoft Word	OpenOffice.org Writer
Spreadsheet	Microsoft Excel	OpenOffice.org Calc
Presentation software	Microsoft PowerPoint	OpenOffice.org Impress
Project Management	Microsoft Project	Open Workbench
Electronic Mail	Microsoft Outlook	Mozilla Thunderbird
Web Browser	Microsoft Internet Explorer	Mozilla Firefox

Table 4.3 Proposed Solutions for Office Automation and Productivity Tools

A reporting tool to extract and process information from the data already captured through the application to generate reports for decision makers on an ad-hoc basis with the support of on-line queries, data drilling-down and graphical representation.

4.6.2 Complaint Handling and Case Management System

The following alternative solutions are selected based on the following criteria:

- Reduce the technology risk by selecting packaged software options in the interests of both speed of implementation, reliability, selecting safe, well-proven, and technology platforms.
- Design for future growth and change by emphasising flexibility and scalability.
- Capture information on-line, at the point of transaction with immediate update of core databases, as far as possible

Systems	Key features supported by the system
Off the shelf Legal case management system with Share Point Portal technology	<ul style="list-style-type: none"> • A web portal based application with the support of work flow, document management including OCR scanning, content management and messaging services. Its supports video, audio and objects • Build in processes to handle activities of legal case management • Build in tools to customise the workflows to suit the CIABOC requirements. • Easy integration to other systems • Build in security features such as screen shots can not be taken and forwarded • Enable all three languages through Vista language • Support mySQL and MS SQL database to manage data • Presence in Sri Lanka and availability of citation in overseas
Off the shelf Case management system with Service Oriented Architecture technology	<ul style="list-style-type: none"> • A web portal based application with the support of work flow, document management including OCR scanning, content management and messaging services. Its supports video, audio and objects • Build in processes to handle activities of legal case management • Build in tools to customise the workflows to suit the CIABOC requirements. • Easy integration to other systems • Support mySQL, MS SQL, and Oracle database to manage data • Presence in Sri Lanka and availability of citation in overseas

Table 4.4(a) Proposed solutions for the Complaint handling and Case Management System

Systems	Key features supported by the system
Custom developed Legal case management system with Open Source Technology	<ul style="list-style-type: none"> • A web based application to maintain and monitor legal case management with the support of work flow and document management systems. It includes storage of video, audio and objects. • Build in tool to customise the CIABOC requirements. • Supports MySQL, MS SQL, and Oracle to manage data • Presence in Sri Lanka and availability of citations in both Sri Lanka and overseas public sectors.
Custom developed Incident management system with Open Source Technology	<ul style="list-style-type: none"> • A web based distributed application to maintain and monitor incidents with the support of work flow and document management system. • Build in tool to define the workflow of CIABOCs requirements • Support of multiple languages • Platform and database independency • Presence in Sri Lanka and availability of citations in both Sri Lanka and overseas private sectors

Table 4.4(b) Proposed solutions for the Complaint handling and Case Management System

4.6.3 *Financial Accounting System*

In the near term, the additional modules of CIGAS13 should be deployed to meet the requirements of the CIABOC. The Financial Module of a mid-tier Enterprise Resource Planning (ERP) system can be implemented when the CIABOC functions as an independent body. It is recommended to implement an ERP system using the technology proposed for the Complaint Handling and Case Management System.

4.6.4 *Human Resources Management System*

In near term, the upgraded version of GPS system should be put into operational in order to use the functionality of the package efficiently. Standard packages are available in the Sri Lankan market to suit the requirements of Personal Management System, Time and Attendance, and Payroll System. The GPS system should be integrated with the Time and Attendance system.

4.6.5 *Loan Management System*

A system should be developed to suit the requirements of the CIABOC. It is recommended to develop the system using the technology proposed for the Complaint Handling and Case Management System.

4.6.6 *Requisition System*

A system should be developed to suit the requirement of the CIABOC. It is recommended to develop the system using the technology proposed for the Complaint Handling and Case Management System.

4.6.7 *Fleet Management System*

A system should be developed to suit the requirement of the CIABOC. It is recommended to develop the system using the technology proposed for the Complaint Handling and Case Management System.

5. Technology Strategy

A target technology infrastructure is proposed to satisfy the technology needs and processing or data distribution requirements of the target applications. It includes: Hardware, Networking and Communication infrastructure, Systems and Communication software.

The technology infrastructure is based on a centralised data processing architecture supporting remote connectivity. The other factors that have been taken into consideration in the design of a target technology infrastructure are:

- i. Volume of transactions, number of concurrent users and response times desired by the CIABOC.
- ii. Use of the optimal utilisation of available hardware and software at the CIABOC.
- iii. Current trend in information technology.
- iv. Future enhancement to integrate the proposed system with the selected line ministries, stakeholders and fully fledged e-governance infrastructure.

Based on the above factors, the target technology infrastructure for the CIABOC is illustrated in figure 5.1.

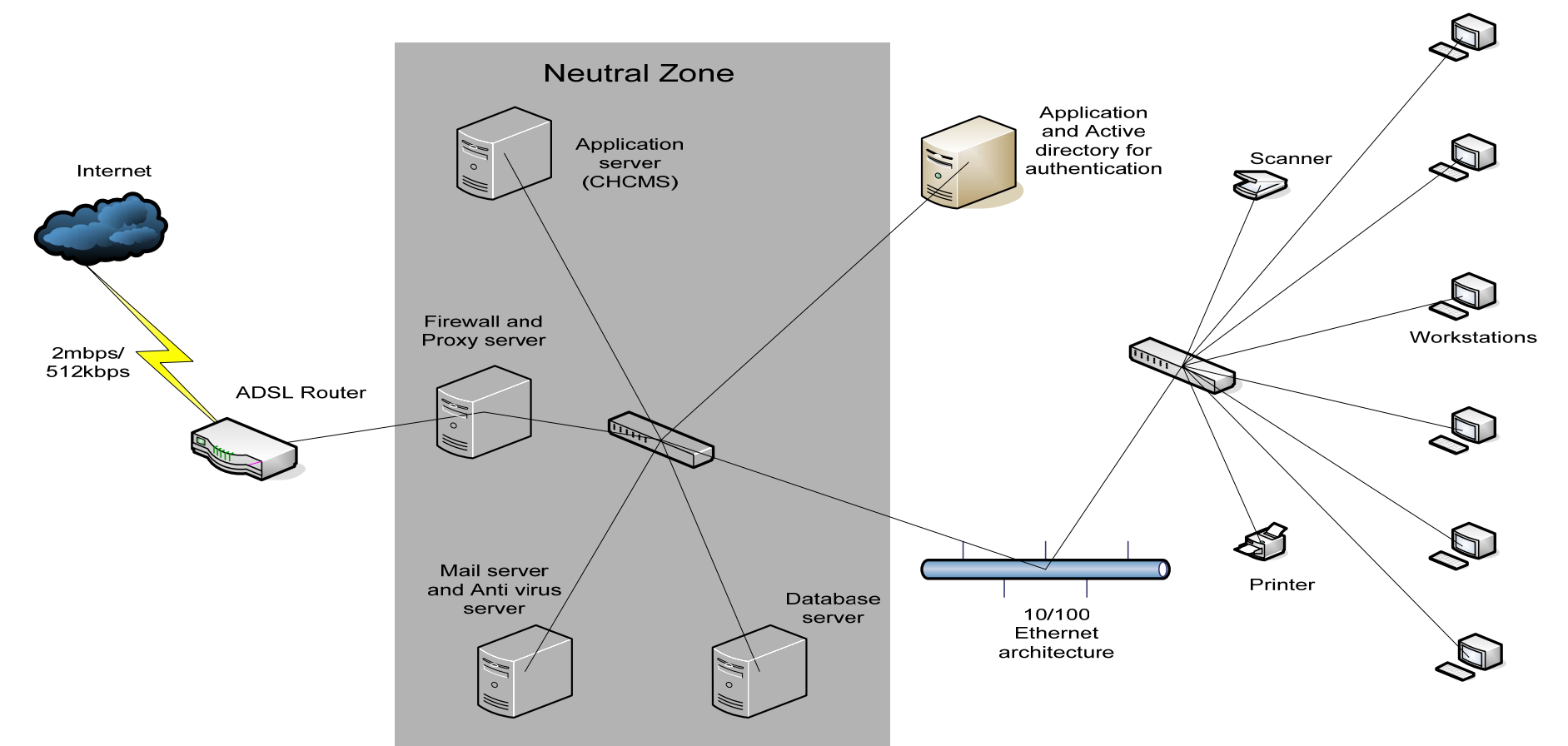


Figure 5.1 Network infrastructure of the CIABOC

5.1 Hardware

The hardware requirements to support the proposed infrastructure are described below.

- **Application server¹** – An application server to deploy the Complaint Handling and Case Management System. Other applications such as Human Resources Management System, Loan Management System, Fleet Management System and Requisition System also can be deploy on the same server.
- **Database server¹** - A server to store and manage the data for the proposed target applications.
- **Mail server** - A mail server to manage the transmission of messages electronically over computer network and the internet.
- **Workstations** - A workstation to work with applications running on the servers, send and receive mail and carry out their other day to day tasks by the CIABOC personnel.
- **Printers** - A printer to produce a hard copy (permanent human-readable text and/or graphics) of documents stored in electronic form, usually on physical print media such as paper or transparencies.
- **Scanners** - Scanner to convert paper based complaints, evidence and other documents into electronic form and store in the database for future references.
- **Bar code readers** – Barcode reader to track the location of the files.
- **Personal data assistants (PDAs)** – PDAs to take notes on the spot by the Raid and Investigation Officers and to down load the notes to the main system.
- **Time and attendance reader** - A reader to log time in and out of an employee in order to track the attendance and calculate the payroll.
- **Intranet** –The equipments required for Intranet are: switches and cabling with RJ 45 sockets providing 10/100 Ethernet connectivity. The TCP/IP is recommended for the networking protocols.
- **Firewall and proxy server** - A server to protect networked computers from accidental or intentional hostile intrusion by compromising the confidentiality, result in data corruption or denial of service. A proxy server acts as an intermediary between a workstation user and the Internet to ensure security, administrative control, and to provide a caching service. The caching system will improve the network performance and internet access speeds by saving recently viewed websites, images and files on a local hard drive so that they don't have to be downloaded from the Web again.
- **Router** – A router to connect different networks of the CIABOC and service provider of Internet.

- **Communication Link** – A communication link will be required to connect different networks of CIABOC and service provider of Internet. For a short term, an Asynchronies Digital Subscriber Line (ADSL) with the bandwidth of 2mbps / 512 kbps will be recommended. Leased line connectivity can be considered if the CIABOC decentralises the operations island wide and any performance issue arises.

5.2 Systems and Communication software

The systems and communication software requirement to support the proposed technology are given below.

- **Operating systems** – The operating systems are recommended for the CIABOC based on current trend in information technology. Microsoft Windows 2003 or higher for servers. Microsoft Windows XP or higher system for workstations. However the CIABOC could consider Linux as an alternative operation system for the workstations. This could be achieved by adopting a dual boot system.
- **Database Management Systems** - The database engine that is selected for the core Complaint Handling and Case Management System should, by default, be the database management system standard for all application systems. These systems will typically have more than 30 concurrent users, scanned documents, videos and other objects. Established industry-standard database management systems that are open database system complaint, and that are adequately supported locally, are recommended. The database management systems appropriate for the proposed Complaint Handling and Case Management System are mySQL, MS SQL and Oracle.
- **Messaging Systems** – Email messaging and collaboration software will be require to enhance overall productivity by providing both email facilities and messaging within the organisation. This messaging software will be also required to support the Complaint Handling and Case Management System. The two most popular software products are: Microsoft Exchange and Lotus Notes.
- **Firewall** – Pre-configured Internet Security Accelerator (ISA) software is an integrated solution which acts as both a firewall and proxy server. This solution is cost effective while providing security for the applications accessed over the Internet, and provides robust mechanism of securely expanding the CIABOC's network by leveraging existing network connection, and ease of deployment and maintenance.
- **Antivirus software**- *Antivirus* software to protect systems from viruses, worms and to monitor traffic for malicious software while surfing the Web. The software will be used to scan incoming email and file attachments and periodically check all local files for the existence of any known malicious code. The two most popular products are: Symantec Norton and McAfee.

Note:

Separate servers are proposed for the application and database to deploy the Complaint Handling and Case Management System. However, the actual requirement can be finalised on the selection of Complaint Handling and Case Management System.

6. Security Strategy

This section describes the security strategy to maintain the confidentiality, integrity and availability of the CIABOC's information assets against natural or human-induced disaster. The factors that have been taken into consideration for the security strategy are:

- Maintain original documents and material evidenced for legal acceptance
- Maintain confidentiality of the information in the system
- Availability of the information within a specified time frame to minimise the interruption of the day-to-day operations

6.1 Information Security Policies and Guidelines

A formal set of security policies and guidelines should be documented. This will provides direction and servers as a standard for employees of the CIABOC. All employees must be familiarised with the policies and procedures to avoid breaches in security.

6.2 Physical security

The following security equipments are proposed to prevent unauthorised physical access, damage and interference to the premises and information processing facilities of the CIABOC.

- **Fire proof safes** for storing legal documents and material evidences.
- **Access Control System** to prevent unauthorised physical access to the Server, Production Unit and Record Room of the CIABOC.
- **Automated fire detection and suppression system** in the Server Room, Production Unit and Record Room of the CIABOC to avoid fire hazards.
- **Lightning and surge protection** to avoid circuitry in the equipment from burning out.
- **Uninterrupted Power Supply (UPS)** to avoid hardware failures and data losses due to power fluctuations.
- **Fire extinguishers** to contain minor fire accidents in Server Room, Production Unit and Record Room of the CIABOC.

6.3 Disaster Recovery Planning (DRP)

The primary objective of DRP is to provide the capability to implement critical processes at an alternate option and return to the normal processing within a time frame that minimises the loss to the organisation executing rapid recovery procedures. The following DRP options are proposed for the CIABOC.

- ***Backing up of data*** - Use removable storage media such as magnetic tape or CDs to backup data and software and store it at an off-site location other than the CIABOC building.
- ***Service level agreement*** - A service level agreement with the Supplier of hardware must have a provision to provide the necessary server on a loan basis.
- ***Maintain catalogue*** – Maintenance of a software inventory cataloguing application software, version numbers and machines on which they have been installed.

6.4 Business Continuity Plan (BCP)

A Business Continuity Plan should be documented to prevent against natural or manmade failures or disasters and the resultant loss of capital due to the unavailability of normal business processes. This will minimize the effect of disturbance, to allow for the resumption of business processes and enhance the CIABOC's capability to recover from disruptive event promptly.

7. Capacity Requirements of Hardware and Software

The status of the current hardware and software was assessed in terms of new technology, functionality, familiarity and ease of maintenance and reliability. This will form a basis in determining whether these technology components should be retained, enhanced or replaced in the target environment. The gap analysis of Current Vs Target infrastructure is attached in Appendix C. The minimum specification for the hardware and software is listed below.

Technology component	Minimum specification	Qty	Comments
Hardware, Network and Security Equipments			
Application server	Intel Pentium Core Duo 1.9 GHz 2 GB RAM (expandable up to 8 GB) 73 GB Hot swap SCSI Hard disk (at 10000 rpm)	1	The memory and disk capacity requirements have been estimated by extrapolating the transaction volume of the CIABOC.
Database server	Intel Pentium Core Duo 1.9 GHz 2 GB RAM (expandable up to 8 GB) 73 GB Hot swap SCSI Hard disk (at 10000 rpm)	1	The memory and disk capacity requirements have been estimated by extrapolating the transaction volume of the CIABOC.
Mail Server	X64 architecture-based computer with Intel processor 2 GB RAM 1.2 GB Hard disk	1	Both messaging and anti virus software will be installed.
Workstations	2.8 GHz Pentium IV processor 256 MB RAM 40 GB Hard disk	19	

Technology component	Minimum specification	Qty	Comments
Scanners	1200 * 2400 dpi optical resolution flat bed	3	One scanner for each division – Secretariat, Investigation and Legal
Barcode readers	N/A	2	One reader for each division – Production Unit and Record Room
Time and attendance recorder	Swipe card mechanism	2	One reader for each building
PDAs	Compatible with MS Windows operating system and mySQL, MS SQL and Oracle database.	6	One PDA for each team
Switches	Thirty two port switches	3	
Access Control System	Swipe card with two factor authentication and password	3	One system for each division – Server room, Production Unit and Record Room
UPS	Capable of providing power to all servers and workstations with 20 minutes in order to shut down safely	1	
Systems and Communication Software			
Server Operating system	Windows 2003 Server	3 server pack with 60 CAL	
Workstation Operating system	Windows XP	23 Licenses	
Relational Database Management System	mySQL or MS SQL or Oracle	1 server pack with 60 CAL	
Messaging	MS Exchange	1 server pack with 60 CAL	
Firewall	ISA Server 2006	1 server pack with 60 CAL	
Antivirus	Symntec	1 server pack with 60 CAL	

Technology component	Minimum specification	Qty	Comments
Application software			
Complaint Handling and Case Management System	-N/A-	1 server pack with 60 CAL	
Workflow, Document and Content Management System	-N/A-	1 server pack with 60 CAL	
Financial Accounting System	-N/A-	8 concurrent users	
Human Resources Management System	-N/A-	5 concurrent users	
Loan Management System	-N/A-	Single user	
Requisition System	-N/A-	Single user	
Management Information System	-N/A-	5 concurrent users	

8. IT Governance

IT governance is the system by which the current and future use of IT is directed and controlled. It involves evaluating and directing the plans for the use of IT to support the Commission and monitoring this use to achieve plans. The critical success factors of a system implementation are depicted in figure 8.1. Some of the critical success factors are explained in the following section.

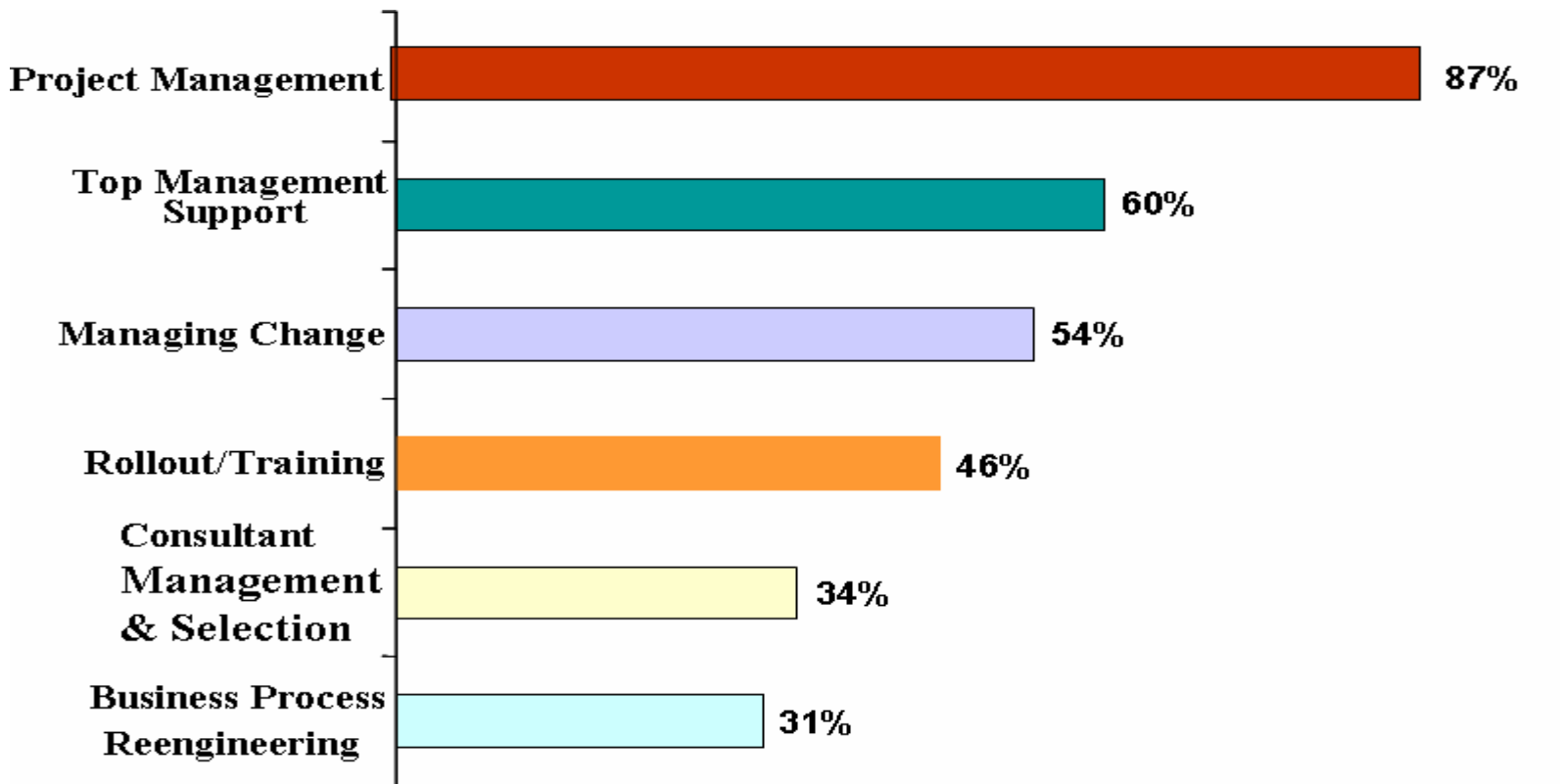


Figure 8.1 Critical Success Factors of a Systems Implementation

8.1 Project Management

A number of IT projects are suggested in our transition strategy in order to put into operation the proposed solution at the CIABOC. A successful implementation of an IT solution requires selection of a solution best fit to the requirements of the CIABOC, co-ordination of software and hardware vendors, careful design and planning of integration with the business processes of the CIABOC in line with identified requirements, and stringent project management.

The Project Management and Quality Assurance reviews will be aimed at providing an objective and independent perspective of the project risks and strengths. They will ensure the delivery of difficult messages to the executive management. This will enable the management to make proactive decisions on project scope, progress, personnel, and risk issues. Project Management will also ensure implementation of consistent standards throughout the project, increase the focus on project benefits, scope, and schedule and resource compliance. Proven project management processes augment each other as illustrated in figure 8.2 below.

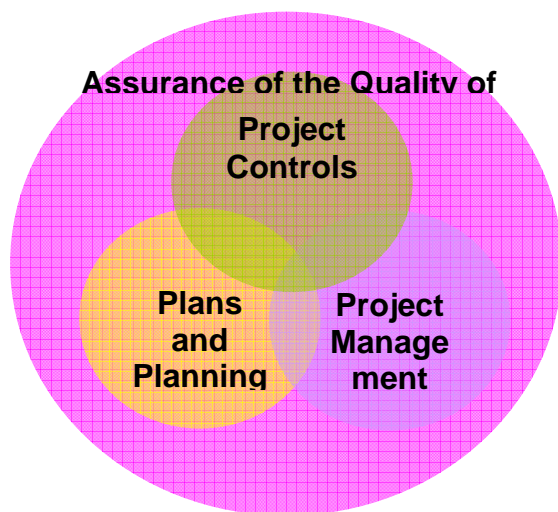


Figure 8.2 Project Management Processes Augment

The **Project Controls** will be based on the terms of reference and proposal, project budget, quality plans, risk, issue and assumption logs, change logs, project reports and project standards.

The **Project Plan** will be the key project control which defines and provides visibility of planned actions; this will be the benchmark against which progress is monitored.

The **Project Management Processes** in its entirety is constituted by interrelated activities which must be managed as a whole to maintain project control and quality.

The **Quality of Deliverables** will be the ultimate measure of assurance and success.

8.2 Steering Committee

The purpose of a Steering Committee is to undertake responsibility for the business issues associated with a project. The role of the Steering Committee is crucial to the success of a project. It is responsible for approving budgetary strategy, defining and realising benefits and monitoring risks, quality and timeliness. Those directly responsible for running a project and managing its stakeholders rely on Steering Committee members for guidance and support in their endeavours.

A Technical Committee is also necessary to support the Steering Committee for the technical aspects of the project. The committee is responsible for defining specifications, evaluation and selection of technology and suppliers, and liaising with suppliers to resolve issues.

8.3 Change Management

Change management is the preparation of people for the impact the programme will have on them, with its various projects. Research has shown that many project failures are due to the absence of a change management programme to ensure people commit to the project and the changes it will cause to organisational life once implemented.

Senior executives require a major project to include a stakeholder view to change management, such that everyone impacted by a project, will understand and commit to its objectives. In this way the benefits delivered by the project can be effectively integrated into day-to-day operations.

Adverse consequences if change is not effectively managed are:

- Increased stakeholder resistance
- Project conflicts
- Project delays
- Heightened employee anxiety
- Low staff morale and motivation
- Uninformed decision-making
- Inconsistent decision-making
- Lower organisational productivity
- Rampant rumour mill
- Inappropriate use of new technology
- Sabotage of change efforts
- Failure to implement change
- Increased financial cost

8.4 Business Process Re-engineering

As mentioned in the proposed application strategy, the CIABOC should have standard processes and best practices to implement a system with a work flow model in order to maximise leverage of the proposed system, associated technologies and operational performance. The target process models will provide the bases for:

- Identifying changes to current processes including policies and procedures, organization and staffing and infrastructure that will guide the identification of change actions
- Defining user access profiles and user training requirements

8.5 Training

Many implementations have failed due to the lack of user training, causing negative sentiment that is directly blamed on the IT system. Therefore, the need for adequate training should be taken into account when planning for a system change, and budgeted for within the overall implementation budget. The following table 8.1 shows the capacity building needs with regard to ICT to support the proposed applications and technology.

Target audience	Type of training	Delivery mode	Priority
Technical - (IT divisional staff)	Network – Training on troubleshooting problems with networks, web services and mail services	Private institute	1
	Database management and development tools – Training on the implemented database and development tools	Private institute	3
	Administration of application – Training on the administration of proposed applications including installation, configuration and management.	Private institute or the implementer of each application	2
	Information Security – Attend workshops covering the ISO17799 standard for information security management.	Private institute	4
End users - (Application user)	Computer awareness programme – Basic knowledge on the usage of workstation and other hardware such as printers, scanners, PDAs.	Private institute	1
	Office automation and productivity tools – Usage of MS Office, emailing and messaging	Private institute	2
	Application – Usage on applications implemented	The implementer of each application	5
	Security awareness programme – Basic knowledge in governing the CIABOC's policies and guidelines	Internal	3
Super Users - (Key user from each functional area to support users and train the new recruits)	Application – Usage of the overall system	The implementer of each application	4

Table 8.1 Training Requirement

8.6 Project Structure

Based on the application, technology and critical success factors specified above, the following structure is proposed to implement and support the IT solution at the CIABOC. The roles and responsibilities of each proposed role is described in this section.

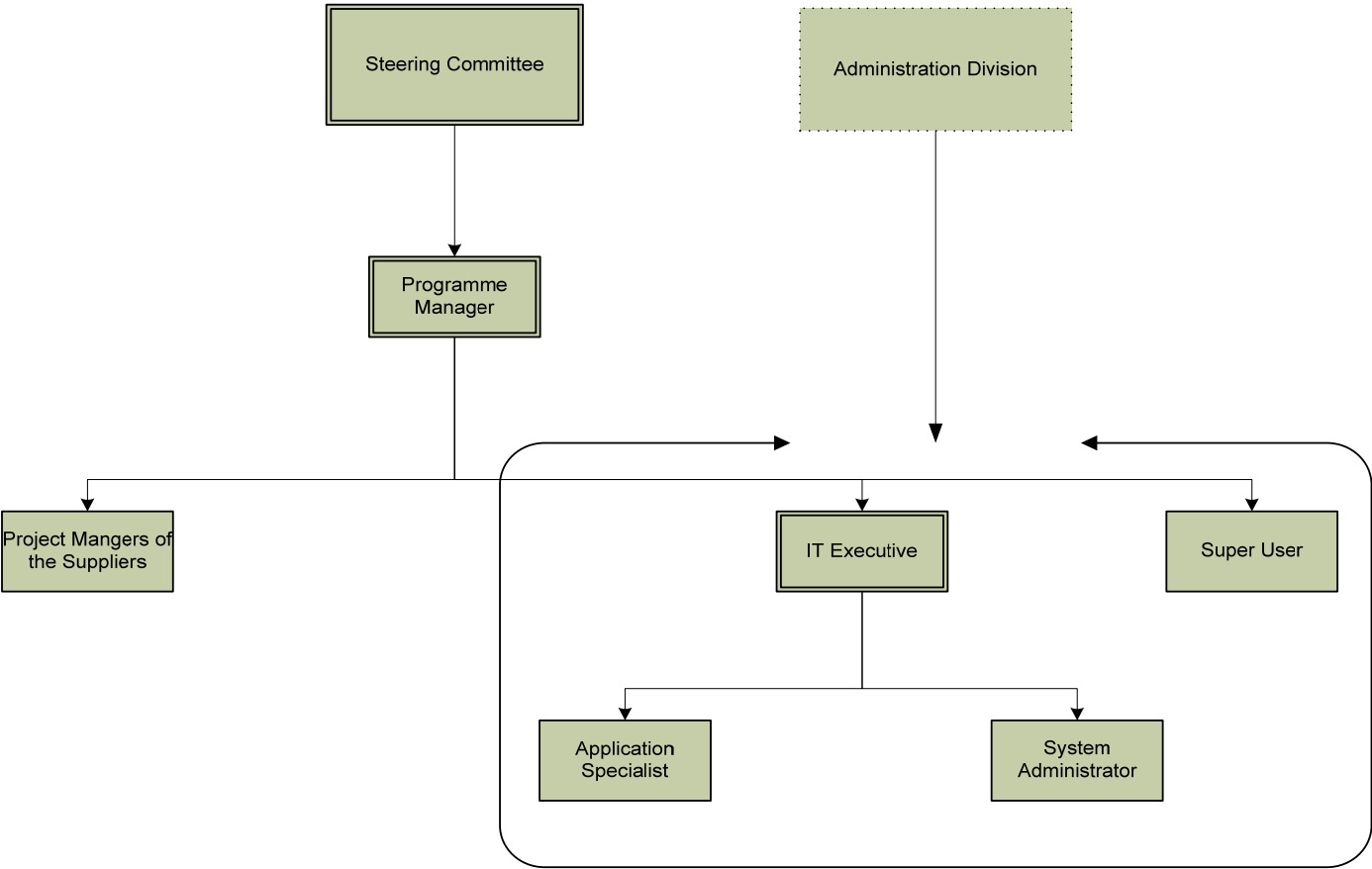


Figure 8.3 Project Structure

Roles and Responsibilities:

Steering Committee:

- Take on responsibility for the project's feasibility, business plan and achievement of business outcomes.
- Ensure the project scope aligns with the requirements of the stakeholder groups.
- Provide those directly involved in the project with guidance on project business issues.
- Ensure effort and expenditure is appropriate to stakeholder expectations.
- Address any issue that has major implications for the project.
- Keep the project scope under control as emergent issues force changes to be considered.
- Reconcile differences in opinion and approach and resolve disputes arising from them.
- Report on project progress to those responsible at a high level.

Programme Manager: The prime responsibility of the Programme Manager is to manage and ensure that each project succeeds. The Programme Manager will typically:

- manage the procurement of proposed solution
- meet weekly with each Project Team and assess progress against the relevant project plan
- provide support and direction to the Project Team
- manage hardware and software suppliers

IT Executive

- Oversee administration of the CIABOC network and other IT resources.
- Look at overall functions within the IT Division.
- Builds and maintains vendor relationships and manages the purchase of hardware and software products.

System Administrator

- Troubleshoots problems with networks, web services and mail services.
- Maintains a broad knowledge of operating systems and hardware.
- Monitor system logs and activity on all servers and devices.

Application Specialist

- Troubleshoot problems with respect to the applications
- Train the users of the CIABOC in the applications
- Liaise with third party vendors to support and maintain the applications.

Super User - A Super User will be selected from every functional area. This user will be trained with the overall application. Role of the super user will be to support the end users in the allocated functional area and train new recruits on the job.

The IT Division of the CIABOC consists of an IT Assistant and a Data Entry Operator. They could be promoted as the System Administrator and Application Specialist by training and certification. The CIABOC lacks an IT Executive. A super user will be selected from each functional unit and be trained in the respective applications.

We recommend the CIABOC to appoint a Programme Manager with the experience of procurement of IT solutions, management of change, business process re-engineering and project management. An IT Executive should be employed by the CIABOC to manage the IT staff and projects. An alternative option for the CIABOC is to outsource a Programme Manager on a contract basis for the duration of the implementation of the Core Application System. The Programme Manager will transfer the knowledge to the IT Executive. Once the Programme Manager's contract is over the IT Executive will take the responsibilities to move forward with the projects.

9. IT Transition Strategy

For efficient tracking and successful implementation of the turnkey solution, the entire scope of this programme is divided into 12 projects. Each project is divided into manageable phases to reduce the associated risks. The phases have been defined to address the operational priorities of the CIABOC with focus on the primary objective – the implementation of the Complaint Handling and Case Management Systems (CHCMS).

Project	Description	Phases
1. Quick wins	Project to streamline some of the issues identified in a short term. This can be done by the IT Division of the CIABOC.	
2. Formulate programme management structure	The programme management structure proposed will be formulated and available staff will be appointed and trained for the necessary posts.	<ol style="list-style-type: none"> 1. Formulate of Steering Committee 2. Appoint Programme Manager 3. Recruit IT Manager
3. Business Process Re-engineering	Project aiming at improvements by means of elevating efficiency and effectiveness of the processes that exist within and across the CIABOC.	
4. Complaint handling and case management system	Project to procure and implementation of the system.	<ol style="list-style-type: none"> 1. Basic application with workflow 2. Document management and file tracking 3. Extent to the line agencies and citizens along with content management
5. Training	Training the end users regarding usage of the applications to be implemented and developing the capabilities of the IT Division.	<ol style="list-style-type: none"> 1. Computer awareness programme 2. Office automation and productivity tools 3. Network training 4. Applications 5. Database management and development tools

Table 9.1(a) List of Projects

Project	Description	Phases
6. Set up infrastructure	Project to procure and set up the infrastructure.	<ol style="list-style-type: none"> 1. Installation of hardware and software to support the Complaint Handling and Case Management System 2. Installation of security equipment and systems 3. Installation of hardware and software to support the Human Resources Management System
7. IT Security	Project to formulate policies and guidelines for the usage of the IT systems and implement security measures.	<ol style="list-style-type: none"> 1. IT policies and guide lines 2. Disaster Recovery Plan 3. Business Continuity Plan 4. Security awareness training
8. Human Resource Management System	Procurement and Implementation of the Personnel Management System.	<ol style="list-style-type: none"> 1. Personnel Management System 2. Time and Attendance 3. Payroll System
9. Loan Management System	Development and Implementation of Loan management system	
10. Requisition System	Development and Implementation of Requisition system	
11. Fleet Management System	Development and Implementation of Fleet Management system	
12. Financial Accounting System	Procurement and Implementation of the financial module of a selected ERP system	

Table 9.1(b) List of Projects

The Action Plan for each project will be documented in detail along with the cost estimate in the next deliverable.

Appendix A: List of Staff Participants at the Workshop

Division	Name of person interviewed	Designation
Commission	Mr. Ameer Ismail	Commissioner
Secretariat	Mr. Sarath Ravindra	Secretariat
Investigation	Mr. Neville Guruge Mr. Indunil Muditha Mrs. G. Hemalatha	Director Investigations Investigation Officer Investigation Officer
Legal	Mr. Piyasena Ranasinghe Mrs. M.Liyanage Mrs. Anoma Wickramasinghe	Director General Deputy Director General Management Assistant
Production	Mr. Siril Withanarachchi	Management Assistant
Finance	Mr. R.A. Chandrarathna Mr. Tilak Weerawansa Fernando Mrs. Chandra Rathnayake Mr. J.A.C. Wickramasinghe Mr. H.M. Jayasiri Mrs. D.I. Silva Mrs. E. S. Gurusinghe Mr. Nuwan Wijewardhana Mrs. P.Wijesinghe Mr. Chandana Ranaweera	Deputy Director Finance Finance Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant
Human Resource Management and Administration	Mr. N.H. Pathirana Mrs. Sriya Herath Mrs. Padma Malini Mrs. W.A. Jayanthi Mr. Kamal Nandakumara Mrs. K.H. Hemalatha Mr. S.A.S.M. Senarath Mr. Kapila Diyalagoda Mrs. Yamuna Karunaratne	Director Administration Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant Management Assistant
IT	Mr. N. C. Perera	IT Assistant

Appendix B: Functional Requirements

Target Applications	Expectations from the new system
Complaint Handling and Case Management System	<p>Secretariat Division</p> <ul style="list-style-type: none"> • Register all documents received by the Secretariat Division through the system • Capture all relevant information of the complaint (<i>Date of receipt, Date of communication, BC no., Name of complainant, Address, Sender, Name of suspect(s) and place of employment address, Name of suspect(s)2, Designation, District, Subject, Referred to DG, Referred to DI, Date of decision NFA, Refer to legal division DG, Legal action, Record room, Clerk no.)</i>) • Facility to identify two complaints uniquely • Feature of auto generating BC number • Facility of identifying multiple complaints of the same subject • Notification letter generation facility • Availability of generating variety of reports (<i>District, Organisation, Subject (Bribery, Assert, Corruption, Raid), Anonymous</i>) • Facility to assign subject clerks according to the subject of the complaint while distributing the work load equally among the clerks (Should consider the number of active files and also the BC number generation in this function) <p>Investigation Division</p> <ul style="list-style-type: none"> • Feature of capturing all raid information • Monitor the cash requested from the Finance Division for raids • Generation of reports (<i>Total number of files in hand, Files in hand branch wise, Number of raid files, Raid files according to branch wise, Files categorized according to designation, Number of arrests, Number of complete files branch wise, Number of files which were directed to file court case, Number of files closed after investigation</i>) <p>Legal Division</p> <ul style="list-style-type: none"> • Monitor status of court case • Schedule of court hearing to be attended • Generating reports (<i>Files in hand, Progress report on prosecution, Individual progress report of the legal Officer</i>) <p>Production Unit</p> <ul style="list-style-type: none"> • Monitor the number of files received by the Legal Division and which Legal Officer is handling the case • Feature of maintaining and monitoring production

Target Applications	Expectations from the new system
	<ul style="list-style-type: none"> Facility of storing evidence in the form of video clips, images, voice recordings Monitor all case hearings scheduled and which legal officer will appear and production needed to be produced Automate generation of notification letters <p>Record Room</p> <ul style="list-style-type: none"> Facility of archiving documents when case file is closed Retrieving files when necessary <p>General</p> <ul style="list-style-type: none"> Facility of tracking the complaint file which moves across divisions Search facility on past complaints and case files Facility of assigning or re-assigning officers for particular jobs (Subject Clerk/Raid Officer/Investigation Officer/Legal Officer) Facilitate a proper work flow method Management of documents of each complaint Controls on who access the complaints and case files Keeping track of physical file movement
Financial Accounting System	<p>The Accounting package will consist of a suite of modules that support accounting and public sector financial management. The functions are:</p> <ul style="list-style-type: none"> General Ledger – Maintain chart of accounts, bank accounts, budgets, account schedules, general journal, financial statements, cash impact, journal transactions, general ledger by account, account balances, chart of accounts, bank reconciliation. Budget and plans - Maintain budget information for each income and expenditure accounts, record the actual and generate a variance report on monthly/quarterly/yearly basis, annual budget report and budget administration expenditure monthly statement Accounts Payable - Vendor information, payment journals, orders, creditor invoices, debit notes, credit notes, return orders, and reports Cash management - Support bank account transactions such as payments, receipts, bank deposits, and bank transfers, enter and printing of receipts for cash, cheque and bank draft, facility to track cash collections and deposits, cheque cancellation/ reversal in the case of dishonour cheques, integrate with on-line banking for automated bank reconciliation, electronic payment generation. Consolidated Accounting and Management Accounting,

Target Applications	Expectations from the new system
	<ul style="list-style-type: none"> • Maintain accounting period for 1st April to 31st March. • Ability to keep open periods and enter transactions and generate reports. • Facility to drill down into transaction history. <p>The integrated functions are to be operated on-line rather than on a batch update basis.</p>
Human Resource Management	<p>Personnel Management System</p> <ul style="list-style-type: none"> • Facilitate to classify employee such as group (Managers, Executives etc), Category (Permanent, Casual, Contract), levels based on skill (A, B, C etc) and categorize based on Services (Combined, Departmental, Police etc) • Cater transactions and integrate with the time and attendance, and payroll system – Basic static and dynamic information of employee, Qualifications, Skills, Training, Productivity, Performance evaluation, Probation, Confirmation, Upgrades, Promotions, Increments, bonus, Awards, Warnings/ disciplinary actions, Resignation • Facilitate to store employee photograph and ID card/ Passport • In case of expatriate employee, the system should facilitate to track the visa expiry date, dependant visa, insurance • Maintain required employee and actual in terms of allocated post, no. of post occupied and vacant. • Maintain history of resigned employee details for the future references with a search facility by ID card/ passport number and name. • Maintain training calendar to schedule programmes. <p>Training</p> <ul style="list-style-type: none"> • Maintain course information • Tracking History –Maintain a historical record of all training activities related to an employee, work group or department. • Expense tracking- Track training costs associated with specific job titles, courses, divisions, and locations. • Training summaries and reports- Print of training records and training history <p>Time and Attendance System</p> <ul style="list-style-type: none"> • Capture attendance records of employees through data entry and a data capturing machines (barcode reader/ thumb reader). • Maintain minimum of 8 types of leave such as casual, annual, maternity, lieu leave, leave abroad, duty leave, no pay, half pay to keep track of leave information including leave entitlements. • Maintain minimum of 5 types to calculate overtime such as normal, double, triple, poya and holidays • Automatic calculations of meal deduction and lieu leave if an employee works on a holiday.

Target Applications	Expectations from the new system
	<ul style="list-style-type: none"> • Captures leave application through data entry and automatic generation by reference to daily attendance record with minimum of 2 approvals. • Facilitate on-line leave approval. • Overtime calculation according to pre-defined overtime rates and limits. • Maintain duty roster information • Process: Late time process, OT process • Reports: Daily attendance report, Time in report, Absent report, Late short leave half day report, OT report, Individual leave report, Individual OT report, Employee age report <p>Payroll The Payroll system consists following key features that will support to handle Staff activities.</p> <ul style="list-style-type: none"> • Salary • Payments • Deductions • Overtime <p>Reports: Pay sheet division wise and Pay sheet of selected employees, Pay slip division wise and Pay slips of selected employees, Pay summary report. W& OP statement, Payroll summary.</p> <ul style="list-style-type: none"> • Directly integrated with the human resources and time attendance modules. • Facilitate independent processing of payroll for a minimum of three categories of staff on a different date. • Facilitate to run payroll process for wages and annual bonus separately.
Fleet Management system	<ul style="list-style-type: none"> • Capture the basic information of vehicle. • Facilitate to classify vehicle such as owned or hire vehicle. • Print and track work orders. • Categorize vehicles in the pool as assigned for raids and for normal transport. • Tracks vehicles at multiple sites from one location. • Maintenance of expenses in relation to mileage chart per day, both fixed and mileage rate, fuel consumption per mile/hour. • Maintenance and repair history. • Maintain accident information. • Cater transactions and integrate with the financial modules • Generate reports by driver, division or branch. • Track assigned vehicles by drivers with histories.

Target Applications	Expectations from the new system
Requisition System	<p>The proposed system provides the following functionality in order to manage the inventory of stationary and other items.</p> <ul style="list-style-type: none"> • Enter purchase order • Enter stock receipt • Stock transfer (When stocks are transferred with in branches, this processes updates the system on the balance stocks on each branch, indicating what stocks have being transferred from what branch to what branch.) • Stock adjustment • Stock request • Stock issue out internal • Stock issue out external (Divisions) • Maintain acknowledgement information of issued items. • Maintain auction and sale information. • Generate and print reports
Loan System	<p>The loan module will support to manage the information on loans such as festival advance, special advance, property loan, motorcycle loan, vehicle loan, distress loan, bicycle loan, and loan pay-off loan.</p> <ul style="list-style-type: none"> • Process application • Credit evaluation and approval • Monthly recoveries • Default / arrears • Release funds to the employee • Repayments • Handle the loan transfer process • Computation of bank loan interests • Generate reports

Appendix C: Gap Analysis of Current Vs Target Infrastructure

Technology components	Current state	Future state
Hardware, Network and Security Equipments		
Application server	Not available	Purchase New server
Database server	Not available	Purchase New server
Mail server	Not available	Purchase New server
Firewall and Proxy server	Available with ISA server 2000	Upgrade to ISA server 2006 licensed version
Workstations	Thirty seven workstations are available with Windows XP. Four workstations are available with Windows 98	Upgrade four workstations to Windows XP. Purchase New nineteen workstations.
Printers	Twenty three printers are available	Retain
Scanners	Not available	Purchase New scanners
Bar code readers	Not available	Purchase New readers
PDAs	Not available	Purchase New PDAs
Time and attendance readers	Not available	Purchase New readers
Fire proof safe	Not available	Purchase New units
Access control system	Not available	Purchase New units
Automated fire detection and suppression system	Not available	Purchase New units
Lightning and surge protection	Not available	Purchase New units
UPS	One UPS is available for a sever with 15 minutes	Purchase New unit to support servers and workstations
Router	Available	Retain existing hardware unit
Switches	Not operational due to damages	Purchase New units

Technology components	Current state	Future state
System and Communication Software		
Operating system for servers	Windows 2003 Server	Upgrade Windows 2003 or higher version
Operating system for workstations	Windows XP	Retain
Messaging software	Not available	Purchase New MS Exchange Server with 60 CAL
Firewall software	ISA Server 2000	Upgrade to ISA Server 2006 with 60 CAL
Antivirus	Corporate edition of Symantic Antivirus	Purchase licensed copy