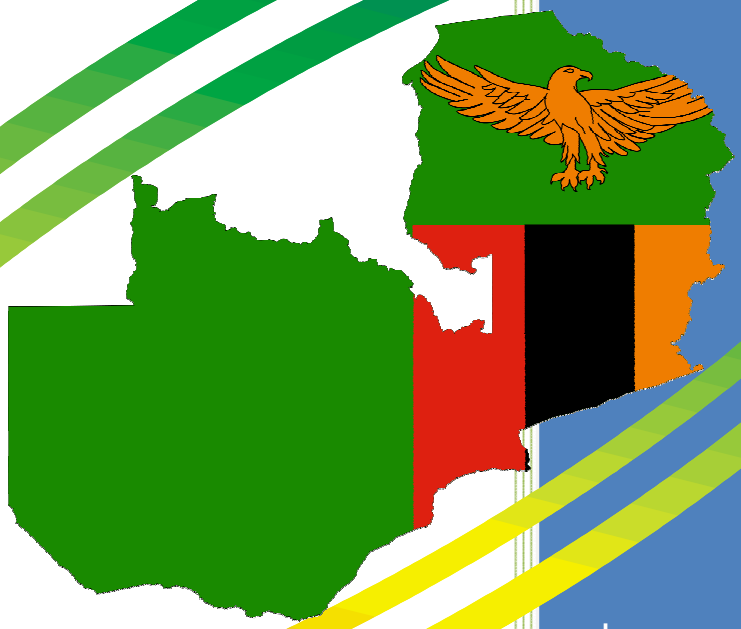
PPCA

THE ROAD MAP TO IMPLEMENTATION OF E-GOVERNMENT IN ZAMBIA



Lessons Learned during the Implementation of the e-Governance System for the Police Public Complaints Authority (PPCA)

Ministry of Home Affairs

The Road-Map to Implementation of e-Government in Zambia

"Lessons Learned during the Implementation of the e-Governance System for the Police Public Complaints Authority (PPCA)"

The information gathered in this book, *The Road-Map to Implementation of e-Government in Zambia "Lessons Learned during the Implementation of the e-Governance System for the Police Public Complaints Authority (PPCA)"*

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INTRODUCTION

This book, *The Road-Map to Implementation of e-Government in Zambia "Lessons Learned during the Implementation of the e-Governance System for the Police Public Complaints Authority (PPCA)"* describes the implementation process of the electronic Police Public Complaints Authority portal. It is aimed at contributing to the ongoing efforts in the implementation of e-Government in Zambia.

The concept of e-Government is defined as including the use of ICT (Information and Communications Technologies), to facilitate daily administration of services and improve the satisfaction level of citizens. E-government focuses on the utilization of ICTs to deliver government services.

Electronic Police Public Complaints Authority (e-PPCA) is part of the on-going efforts to the implementation of e-Government in Zambia. This includes the development and installation of an Information Management System (IMS) for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties. This e-Government system will enable the Police Public Complaints Authority (PPCA) provide their services efficiently and improve the satisfaction level of citizens.

CHAPTER I – *The PPCA e-Governance System*

1. The PPCA-MIS

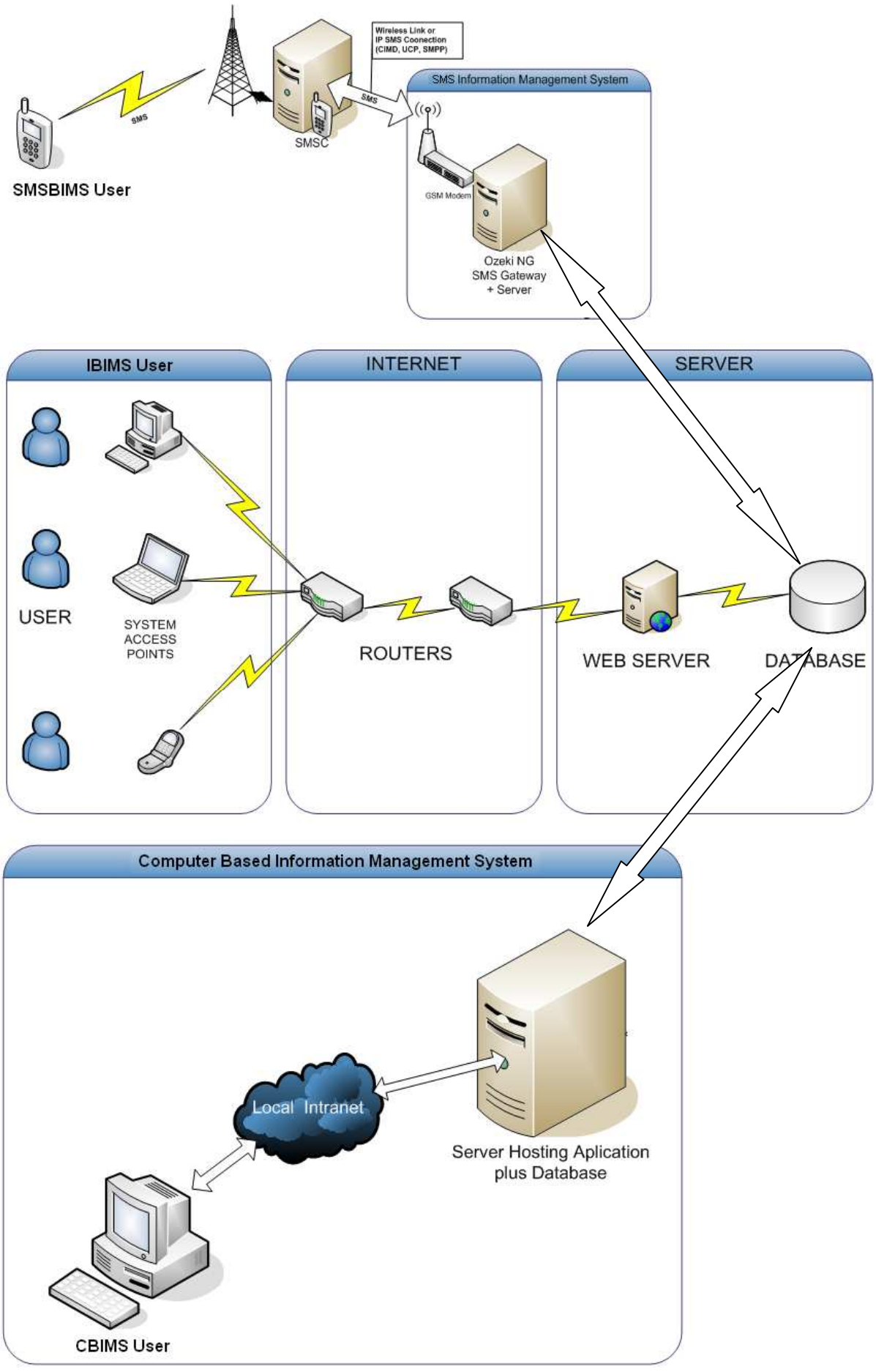
The PPCA-IMS will have a 3-level system architecture comprising 3 sub-systems: Computer-Based Information Management System (CBIMS), Internet-Based Information Management System (IBIMS) and SMS-Based Information Management System (SMSBIMS). This will enable the PPCA-IMS be accessed by citizens anytime, anywhere and at all levels of the society. People in far off places will be able to fill-in and remotely file their complaints. The PPCA-IMS will be able to generate automatic responses acknowledging and confirming receipt of the complaint.

CBIMS: This is the first level PPCA-IMS that will be installed on computers within the PPCA premises, and be able to work only within the PPCA's local intranet. This is an offline system that will not depend on the availability of internet connectivity. It will also act as an internal backup system. It will be designed based on a two-tier system architectural design technology.

IBIMS: This is the second level PPCA-IMS that will provide web-based access to the system and enable people in far off places to fill-in and remotely file their complaints via the internet. This part of the system will be designed based on a three-tier system architectural design technology.

SMSBIMS: This is the third level PPCA-IMS that will provide SMS-based access to the system and enable people in remote places with only access to a mobile phone be able to file their complaints via SMS. This will also act as a complementary channel of IBIMS. Providing public services through the SMS channel will significantly reduce time and cost; introduce a cheaper, easier and faster information-accessing channel; improve transparency, communication, and relationship between government and citizens; make the services and procedures easier for the citizens; improve the ministerial image; engage more people and increase citizens' participation; and promote e-Democracy.

All these sub-systems will be able to provide access to the main PPCA-IMS server and database for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties


Wireless Link or
IP SMS Coonection
(CIMD, UCP, SMPP)
SMS
SMS
SMSC
SMS Information Management System
GSM Modem
Ozeki NG
SMS Gateway
+ Server
SMSBIMS User
IBIMS User
INTERNET
SERVER
USER
SYSTEM
ACCESS
POINTS
ROUTERS
WEB SERVER
DATABASE
Computer Based Information Management System
Local Intranet
Server Hosting Aplication
plus Database
CBIMS User

2. System Architecture

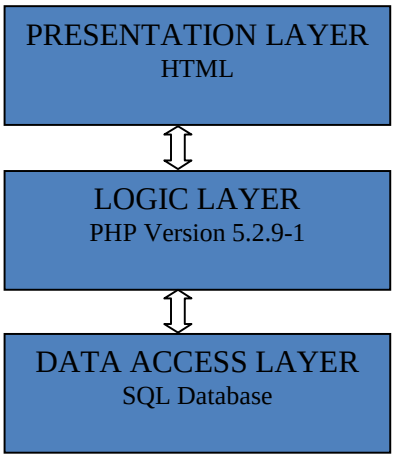
The e-PPCA portal will have a 3-level system architecture comprising 3 system modules: Computer-Based Police Public Complaints Authority (CB-PPCA) System, Internet-Based Police Public Complaints Authority (IB-PPCA) System and SMS-Based Police Public Complaints Authority (SMSB-PPCA) System. This will enable the e-PPCA portal be accessed by people anytime, anywhere and at all levels of the society. People in far off places will be able to access the portal remotely.

The CB-PPCA is the first level module of the e-PPCA portal that will be installed on computers within the PPCA premises, and be able to work only within the PPCA's local intranet. This is an offline system that will not depend on the availability of internet connectivity. It will also act as an internal backup system. The IB-PPCA is the second level module of the e-PPCA portal that will provide web-based access to the system and enable people access PPCA services online.

The SMSB-PPCA is the third level module of the e-PPCA portal that will provide SMS-based access to the system and enable people access PPCA services via a mobile phone. Providing public services through the SMS channel will significantly reduce time and cost; introduce a cheaper, easier and faster information-accessing channel; engage more people and increase participation; and promote e-Democracy.

This e-PPCA system will require three servers (three computer hardware dedicated to host server software) with one of them being the master server hosting the main SQL database and software interface modules, and one main router.

3. Application Architecture



The CB-PPCA will be developed using Java programming language. Servlets installed on server side will act as server interface while JSPs installed on client side will provide the interface to the users. This will provide offline connectivity via server to the main SQL Database.

The IB-PPCA will be consisted of the presentation layer (web pages), Logic layer and data access layer which are the front end, middle tier and back end respectively.

The arrows show the flow of data between layers. The arrows indicate that data will be able to flow in either direction between layers. This simply implies that the user interfaces will be able to supply the logic layer with data and in response receive data (acknowledgement) back from the logic layer. The same will also happen between the logic layer and the data access layer. The SMSB-PPCA will be developed using Java programming language. Ozeki SMS gateway will act as a bridging middleware for mobile WAP clients to interact with the SQL Database through the SMS gateway.

CHAPTER 2 – Implementation

4. Implementation

The development, installation and testing of the full package e-Governance System at the Police Public Complaints Authority (PPCA) is now complete. After series of optimization, it has since been launched and now open (for public use) for official day to day registration and management of complaints. The Management Information System (for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties) is implemented with three access levels (modules).

The computer-based Management Information System (MIS) is only accessed by the internal staff at PPCA. It is also acting as a back-up system for all complaints lodged by the public.

The Internet-based Management Information System has four main interfaces: the PPCA website, the interface for lodging a complaint (by the public), the webmail, and the web-based MIS for administrative access and management of complaints.

The SMS-based Management Information System has a mobile access number for lodging a complaint.

The MIS was developed using commonly used computer software so that the staff in the client institution (PPCA) will be able to rectify most of the operational problems without relying heavily on interventions of the IT specialists. The system is also secured enough to meet the security needs, given the nature of information that PPCA deals with.
The training of officers from PPCA on the salient features and functioning of the MIS was conducted from 2nd May 2011 to 27th May 2011. In addition to this in house training, ZRDC has established and enrolled all personnel at PPCA for an e-learning course –

Certificate in e-Governance (i.e. the duration of the course is two months). This is a ZRDC initiative to enhance ICT capacities in Government institutions.

5. Accomplishments

The development of an e-government system to enable the Police Public Complaints Authority to electronically manage complaints from the public in particular, for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties started on Monday 25th January 2011. The commencement of this project was seriously delayed (from the contract date of 1st January 2011 to 25th January 2011) due to late processing of the cheque at the ZRDC accounts department.

On Wednesday 26th January 2011, we had a meeting with the Secretary (Dorothy J. Zimba) and the IT officer at PPCA. This meeting was meant to familiarize ourselves with the people at PPCA and inform them about the project schedule.

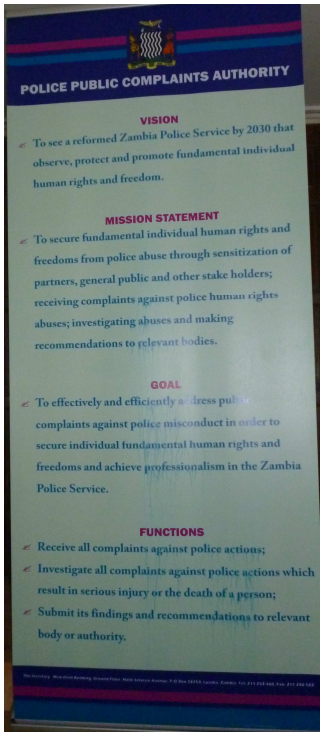
On Friday 28th January 2011 we had a preliminary Survey of the local area network and Internet at PPCA to enable us plan on the additional equipment to procure. Our preliminary survey of the network status at the PPCA reviewed that the offices have not been accessing internet for the past one year. It was revealed further that connectivity to the main access device at the point of presence (POP) in the building is faulty thereby rendering off-connectivity to the entire PPCA premise.

As internet connectivity is critical in the development, implementation and testing of the internet-based software for web-based access to the PPCA-MIS, we strongly recommended that the internet connectivity be worked on as soon as possible, to ensure guaranteed internet connectivity during the implementation and testing of the PPCA-MIS.

On Monday 31st January 2011 we held a Facilitated Workshop Development Meeting of Police Public Complaints Authority Management Information System, focusing on system elicitation. Here, users were requested to fill in the 'requirements form' how they want the system to be/function. This included information on the system user interface, database, reports etc. Hence, we got first hand information on how the users want the system to function (some of the notes filled in the 'requirements forms' are included below).

On Wednesday 2nd February 2011, we had a technical meeting in which we analyzed the requirements and came up with detailed technical specifications for the PPCA-MIS system, based on the elicited requirements. And now the system is being developed, which should satisfy user needs.

On Friday 4th February 2011 we had a detailed survey of the network and the status of internet connectivity at PPCA. We since developed a new network topology architecture and based on this, we will setup a network to provide connectivity in all rooms (for future growth) and network all computers. There has not been internet connectivity at PPCA for the past one year. It has been established that the connection link to the point of presence in the building had been disconnected for a long time now. This we suspect is due to unsettled internet bills with the internet provider.

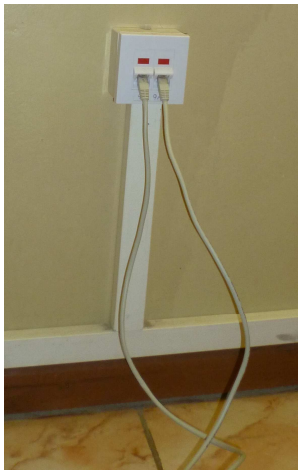


After gathering the necessary system requirements, we commenced the development of the MIS software. Using the waterfall model, we managed to develop and test a PHP-based interface for accessing the MIS system, and a MYSQL database for storage and management of all complaints lodged at PPCA.

On Thursday 10th February 2011 we got to the site to install the network at Police Public Complaints Authority premises. We developed a Local Area Network architecture that is quite scalable (i.e accommodates growth of network users) and reliable (i.e will ensure continuous availability and connectivity with no outages). The LAN will provide for double LAN outlets in 5 offices (to enable growth of network users up to two in each of these offices, e.g data entry office, clerk's office, IT office, boardroom etc.) and single LAN outlets in 5 other offices (e.g Chairman's office, Executive Secretary's office etc.). This network architecture will enable all the 10 offices at PPCA have access to internet.

Therefore, On Friday 11th February 2011, we started laying down a new network at the PPCA. We managed to fix trunks (for cabling) in 4 offices on the same day. On Friday 11th February 2011, we continued with trunking, and we managed to cover all the 10 offices that will have local area network (LAN) outlets.

On Saturday 12th February 2011, the job continued as we were lucky to have one of the officers at PPCA (Mr. Ngwira) who sacrificed to work with us through the weekend (Saturday and Sunday). On Saturday we started laying down the cables through the offices. This job took us up to around 19:00hrs.



On Sunday 13th February 2011, the job continued. This time we were finished laying the cable in the trunks, and started

terminating the cable to the router and switch. This job took us up to around 19:30hrs.

On Tuesday 15th February, we completed the installation of a state of the art network at the PPCA premises. Below is the checklist of work done and material used:

1. RJ45 cat5ee UTP Double Data Outlets (5 network points) in five offices.
2. RJ45 Cat5ee Single Data Outlets (5 Network Points) in five other offices
3. UTP Cat5ee Solid Cable (2 Boxes of 305m) for wiring all the 10 offices at PPCA
4. PVC white Trunking 25X40X3M (20 pieces used for trunking the cables through the offices)
5. 6U Network Cabinet (where the router and switch is mounted and terminated) installed in the server room
6. 16 port D-link Switch
7. 4 port Linksys Router
8. 3 Duo-Core, 3.0HZ Server Computers

Therefore, we terminated and tested the network, and labelled all the network outlets with respect to their termination points in the server room.

On Friday 18th February 2011, we completed the development of computer-based MIS software for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties. The system

was designed with new capabilities to support research, analysis and advanced reports on PPCA data.

On Monday 21st February 2011, we had a meeting with officers at the Legal Aid on the first floor, concerning the possibility of tapping internet from them (i.e. connecting to the router at their premises). They indicated that their connectivity with Coppernet Solution is intermittent, meaning that when there are many PCs connected, it becomes unbearably slow. They said that they have just procured a small bandwidth, which at the moment is even failing to sustain them because of a growing population of computers in their offices.

Therefore, this left the PPCA with no other option but to start a process of acquiring new internet connectivity with an Internet Service Provider (ISP).

Nevertheless, later in the day, we managed to install and test the computer-based Management Information System (MIS) for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties. However, an internet-based system for people in far off places to fill-in and remotely file their complaints could not be tested because of the lack of internet connectivity.

On Wednesday 23rd February 2011, we optimized the computer-based Management Information System (MIS) system so that it can accommodate file numbers from the previous database of registered complaints.

On Thursday 24th February 2011, the computer-based Management Information System (MIS) was further optimized to accommodate a few concerns raised by data entry officers at PPCA, and since then it has been launched and now open for official day to day registration and management of complaints.

After installation of the internet connectivity on 27th April 2011, we installed and tested the Internet-based Management Information System. This module has the following interfaces: the website, lodging a complaint, web-based MIS admin and webmail. The website provides the public with information about the PPCA, composition, functions, committees and information about lodging a complaint. The official PPCA website is accessed using the link www.ppcazambia.org .

The internet-based system (i.e. web-based interface for lodging a complaint) for people in far off places to fill-in and remotely file their complaints is accessed via a link "register a complaint" on the website. When a person lodges a complaint through this interface, an automatic response is generated acknowledging and confirming receipt of the complaint via the internet, and a reference number is generated and allocated to a complaint and communicated to the sender to be quoted for future reference.

The web-based Management Information System admin is an administrative database system for managing all complaints sent via the internet. It is accessed using the link http://admin.ppcazambia.org . This interface can also be used administratively for receipt, storage and management of information on complaints from members of the general public on the conduct of police officers in the execution of their duties.

The webmail provides an interface for officers from PPCA to send and receive emails. It is accessed via a link "webmail" on the website. Therefore, all officers at PPCA now have their official email addresses (Mrs. Dorothy Zimba - dzimba@ppcazambia.org , Mr. Terrency Ngwira - tngwira@ppcazambia.org , Mrs. Olive Mweemba - omweemba@ppcazambia.org , Mrs. Radio Mulando - rmulando@ppcazambia.org , Mrs. Nancy Chilufya - nchilufya@ppcazambia.org).

On 29th April 2011 we installed and tested the SMS-based Management Information System. This system enables people to lodge complaints via SMS using their mobile phones. The system receives SMS massages and aggregates them in the database as complaints, and enables the officers at PPCA to send instant responses to the

complainants. People from remote places, using any mobile subscriber (Airtel, MTN, CelZ e.t.c) can send a complaint via SMS to PPCA using the system number: **0974793136**

Thus, the full Package e-Governance System has been successfully implemented at the Police Public Complaints Authority. The system is now ready and open to the public for use.

6. Recommendations

We strongly recommend that the process of advertisement be undertaken so that the public is informed on how to use the system. Recommended media: ZNBC, MUVI TV and Community Radio Stations.

7. Upcoming Activities

We will provide back-up support to PPCA (from 1st June 2011 to 1st June 2013) to ensure that the software and the system are working according to the expectation of the PPCA, and also ensure that the PPCA staff effectively and efficiently use the MIS system that is developed and installed on their computers. Our back-up support will comprise: system maintenance – three (3) times a week, regular back-up support (at-least three times a week), and 1hour response time (for on-demand support).


POLICE PUBLIC COMPLAINT AUTHORITY
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COMPOSITION
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POWERS
LODGING COMPLAINT
COMMITTEES
To Register Complaint, fill in The form below and Submit
Complainant Details
Names
Sex
Select sex
Age (yrs)
NRC
Email:
Phone:
PhysicalAddress:
District Name:
Select District
Police Officer's Details
Name(s)
Rank
Police Post:
Complaint Details
Complaint Details:
Witnesses(s):
Submit Complaint
QUARTERLY REPORTS
ZP Amendment Act
e-Government System
Report on Complaints

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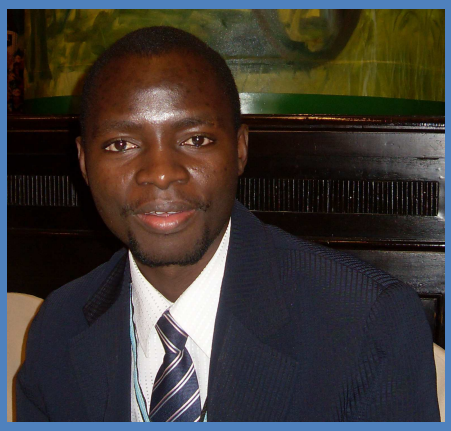
Mr. Mulenga Mwenge: He is a lecturer at the University of Zambia, Department of Computer Studies. He has also participated in the development of the international e-Learning netowk application/portal for the Mulungushi University in Kabwe.



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