A Police information dissemination Application: Case of Kenya Police

By

Rodgers Komen Cherutich,

Johnstone Olwamba Ananda

And

Timothy Reteti Lemein

A Project Proposal submitted in partial fulfillment of the requirements of the Degree of Master of Science in Mobile Telecommunications and Innovation (MSc. MTI)

Faculty of Information Technology Strathmore University Nairobi, Kenya

September, 2016

# Abstract

Table of Contents

[Abstract i](#_Toc448759426)

[Table of Figures iii](#_Toc448759427)

[List of Tables iv](#_Toc448759428)

[CHAPTER 1: Introduction 1](#_Toc448759429)

[1.0: Background of the study 1](#_Toc448759430)

[1.1: Problem statement 2](#_Toc448759431)

[1.2: Research objectives 2](#_Toc448759432)

[1.3: Research questions 2](#_Toc448759433)

[1.4: Justification of the research 2](#_Toc448759434)

[1.5: Scope of the research 3](#_Toc448759435)

[1.6: Limitations of the research 3](#_Toc448759436)

[CHAPTER 2: Literature Review 4](#_Toc448759437)

[2.1 Introduction 4](#_Toc448759438)

[2.2 Dissemination of information by police in the world 4](#_Toc448759439)

[2.3: Dissemination of information by police in Kenya 6](#_Toc448759440)

[2.4: Design methodology Review 7](#_Toc448759441)

[2.5: Mobile Internet services in Kenya 8](#_Toc448759442)

[CHAPTER 3: Research Methodology 10](#_Toc448759443)

[3.1 Introduction 10](#_Toc448759444)

[3.2 Development process 10](#_Toc448759445)

[3.3 Research design 10](#_Toc448759446)

[3.4 Location of study 11](#_Toc448759447)

[3.5 Research purpose 11](#_Toc448759448)

[3.6 Sample size 11](#_Toc448759449)

[3.7 Ethical measures 11](#_Toc448759450)

[3.8 Research Instruments 11](#_Toc448759451)

[3.8.1 Questionnaire 11](#_Toc448759452)

[3.8.2 Interview 11](#_Toc448759453)

[3.9 Conclusion 11](#_Toc448759454)

[References 13](#_Toc448759455)

# Table of Figures

Figure 2.1 Agile Methodology overview (Eminaelezovic, 2012) 8

Figure 3.1: Research Methodology steps 1 10

# List of Tables

Table 2.1: Source: Data original to this report and complied by co-author Julie Hill, Ph.D. 5

Table 2.2: Internet Subscriptions 1 9

# CHAPTER 1: Introduction

## 1.0: Background of the study

The police Agencies are well acquitted with the endlessly demands of the ever hungry “media beasts”. Stories concerning crime and the justice system are a staple of the media “diet”, as such police are steadfast source of stories, “feeding the beast” necessitates full-time staff enthusiastic to the job. Police agencies have invested extensive resources in establishing public information or media relations units to respond to requests of information, provide interviews and initiate coverage. Whether served by a weekly or daily newspaper, and/or one or several television or radio stations, even small communities have established it necessary to commit at least some resources to media relations (Darrel W Stephen, July 2011).

Take the news release as an example: it is perhaps the most regularly used method of giving information to the public. The release is carefully drafted, approved and sent to the list of media contacts via fax or e-mail. Then you wait to see if anyone from the media contacts you for follow up or if a story appears in the next newscast or edition of newspaper. How frequently do news releases result in the story covering the whole information? Besides if a story emerges from the release how many people saw it or read it? The knowledge we have concerning how people get information indicates that these stories only get to an insignificant percentage of audience you would like to reach. Darrel further explains that to guarantee your message reaches the target audience you have to take more control.

In today’s information based world, fast and efficient dissemination of high assurance information is fundamental. Mobile technology, particularly hand-held cellular based devices, is playing a huge role in describing how information is disseminated. The revolution of mobile technology is changing the primary purpose of mobile devices from making or receiving calls to retrieving information on any subject (Chet Hosmer, 2008).

In Kenya, Crime involving firearms, which has significantly increased in our major urban centers, has resulted to increased physical and psychological costs to society and a challenge to the police. White-collar and cyber crimes continue to place a burden on the economy and contribute to the prevailing sense of lawlessness. Terrorism, a global phenomenon has continued to wreck havoc by scaring away investors and tourists, leading to loss of jobs and depleting further the meager state resources in countering it. Gender violence and crimes against children are not only highly prevalent but have a profoundly negative impact on the rights and future well being of women and children. Violence associated with inter-group conflicts, such as political conflicts, ethnic tensions and land disputes have been common in Kenya and pose a threat to democratic tolerance and orderly co-existence. Vehicle thefts and car jacking have increased substantially and have contributed to increased levels of fear and insecurity. Peoples’ experiences of incivility and anti-social behavior in their local neighborhoods contribute to their fear of crime. There is widespread demand for an increased and more police presence on our streets and neighborhoods (THE KENYA POLICE SERVICE, 2003).

## 1.1: Problem statement

The dissemination of information to the citizens in Kenya is often done by police spokesperson, the Inspector General of police and authorized police commissioners. The information is dispersed using various modes i.e. by calling a press conference from the various available media houses, posting on available newspaper, through top down means to the village elders who finally disseminate it to the citizens, through radio broadcast announcements e.t.c. Despite the great impact these modes is bringing the police incur lots of cost in press conferences, newspaper columns and the radio broadcast announcement charges. The time taken to reach the citizens via the top down approach takes lots of time reach the target group of citizens (it can take days or even weeks) with the information distorted from its original meaning. In addition the citizen who can get access to these police information via these modes are few due the technological advances in the modes and methods of broadcasting information.

In summary, the key problems discussed above are large cost incurred during dissemination, untimely dissemination, and wrong information content disseminated and technological advances. These problems limits the right to police information by the Kenya citizens.

## 1.2: Research objectives

1. To determine the challenges that the police face in disseminating information to the citizens.
2. To analyse the present methods of disseminating information by the police
3. To design and develop an application that disseminates information to the citizens.
4. To test the functionalities of the mobile application.

## 1.3: Research questions

1. What are the challenges that the police face while disseminating information to the citizens?
2. What are the present methods police use to disseminate information?
3. How can a mobile application be designed and developed?
4. How can the functionalities of the mobile application be tested?

## 1.4: Justification of the research

This study looks for ways in which mobile application can enhance the dissemination of important information to the locals. Community policing promises to be able to reinforce communities to be able to both resist and prevent crime; establish meaningful relationship between the police and the communities; link police services with other municipal services; reforming the police organization model by expanding the roles and responsibilities of the police officers (Diamond, Weiss, Services, & Forum, 2009).

## 1.5: Scope of the research

The study will offer a solution to be integrated with the police information system for real time updates to the Kenyan locals/citizens. This will help the citizens to make appropriate decisions and enjoy other services.

## 1.6: Limitations of the research

This study will mainly focus on the dissemination of important information to the locals by the police with the limitation of Kenya. Additionally, the visiting the police and involving the public on the system would take slightly longer time and the public awareness creation on the usage of the application.

# CHAPTER 2: Literature Review

2.1 Introduction

The term “disseminate” comes from Latin word “disseminare” meaning (scattering seeds), is defined in dictionary as “to scatter or spread widely, as though sowing seed; promulgate extensively; broadcast; disperse: to disseminate information about preventive medicine”(Choi, 2012). Dissemination takes on the theory of traditional view of communication which involves a sender and receiver. The traditional communication view involves the sender sending a message, receiver analyzing the information and giving a response while dissemination is the sending of the information, but no reply is given with the carrier sending the information to many in a broadcast system and not to an individual.

The key objective of dissemination of information by police to the citizens’ endeavor is to provide ‘information for action’ to the citizens of the target region in order to alert and inform them about any security issue of concern. Quick response to security alert or information requires timely dissemination by the police authorities. To achieve this timely relying of information, communication tools has to be employed. Mobile phones have proved to be an effective tool. Mobile communication (particularly, cell phone usage) by citizens is of special interest given that it is the communication channel that most ordinary people are most likely to have close at hand in the moment of emergency (Horrigan, 2007). Moreover, in future crises, the cell phone is likely to be used increasingly for high bandwidth services as some people caught in an emergency will also attempt to receive information over their mobile devices from internet or other networked sources (e.g., to receive web-based news over their cell phones. Mobile technologies are rewriting the rules for technologies as they enable people to break away from the landline telecommunication transforming the lives of billions in the continent. The whole world is literally going with the introduction of mobile phones, other wireless and mobile computational devices such as Laptops, Palmtops, PDAs (Personal Digital Assistants) and Tablets. Statistics show that the total mobile‐cellular subscriptions reached almost 6 billion by end 2011, corresponding to a global penetration of 86% (International Telecommunication Union, 2012).

This section reviews the dissemination of information by police to citizens worldwide, analyse the current methods of information dissemination by police in Kenya in order to identify the gaps in addressing the problems in chapter one.

## 2.2 Dissemination of information by police in the world

The world of police communication has changed dramatically over the 20 years. In the past the chiefs or sheriff communicated externally primarily through the news media; speeches in the community and formal reports on activities and issues. All of these methods continue to be used today but there are many more communication options for the police to consider. A website provides unfiltered information that is available to anyone that connects to the site at any time. The social media, blogs and video websites provide communication options that can reach a very large audience with a relatively small investment (Darrel W Stephen, July 2011).

In the early days of mass media, there were few players in the field and most Americans tuned in on a daily basis to local newscasts and read newspapers. Then, as now, the media provided an plenty of coverage of crime and disorder issues, although arguably not always in a way police would prefer. Yet using mass media was an efficient and cost effective way to disseminate information. People have changed the way they gather, consume and distribute news information (see table 1). The changes are profound and underscore the need to develop a communication plan that not only acknowledges that the world is changing, but embrace the opportunities these changes present.

|  |  |
| --- | --- |
| That was then | This is now |
| A handful of television, radio, and newspaper outlets | Hundreds of media outlets plus community journalism, blogs, and the ever-expanding networks in social media |
| News delivered only at certain times each day | News on demand 24/7 |
| Paid subscriptions for print media | Free access to most online versions |
| Relatively high scores for accuracy, trust, and credibility in media | Relatively low scores for accuracy, trust, and credibility in media |
| Access to the news available through the media outlets in your area | Access to news available from virtually any media outlet— and person with a computer—anywhere in the world |
| Sit through television commercials | Fast-forward through or skip ads entirely, courtesy of TIVO® or digital cable |
| Professional journalists reported the news | Anyone with a cell phone, video camera, and a computer reports the news |
| It was expensive for police agencies to communicate directly with citizens (usually involving direct mail, billboards, or other paid advertising space) | It is increasingly easy to reach people with low- and no-cost tactics |
| Except for during community meetings and personal interactions, communication was largely one-way | New tools for engagement and ongoing dialogue allow for two-way communication with citizens |
|  |  |

Table 2.1: Source: Data original to this report and complied by co-author Julie Hill, Ph.D.

Traditional media are facing enormous competition and significant economic challenges, for television, the competition began with the explosion of cable networks the 1980s and 1990s. Until then, there were only three major networks and one public television that offered programming. According to the Pew Center for People and Press’ biennial survey about news consumption (2008a), the proportion by Americans who say they “read newspaper on a typical day has declined by 40 percent; the proportion that regularly watches nightly network news has fallen by half” since the early 1990s. While this trend is especially pronounced among the younger generations (more than a third of who report getting no news at all on a typical day) it is becoming increasingly true for older generation also.

The mobile technology is increasingly used as a tool for information dissemination. The Department of Defense (DoD), Department of Homeland Security (DHS), Intelligence committees, and law execution are among those agencies employing mobile technology for information management. The main mobile devices utilized are iPad, iPhone, android, and windows phones. The open architecture of these devices is beneficial for swift application development and release.

## 2.3: Dissemination of information by police in Kenya

The Kenya Police bits its start to the coastal town of Mombasa where the Imperial British East Africa Company, and a businessman Sir William McKinnon, who found it necessary to provide some form of security for his stores along the coastline of Kenya 9 (Kenya Police Strategic Plan, 2003). The police is the second oldest public institution in Kenya after the Kenya railways. The poor relationship between the police and the Kenyan public has a long history that goes back to the establishment of the police as an institution by the colonial administration. The KPF was established in the period between 1887-1902 with the aim of providing security for protecting colonial trading routes, trading centers, stocks and staff (GoK; 2009: 13-16). This gradually changed to providing security for white settlers migrating to Kenya at the end of the First world-war owing to resentment from the indigenous population as a result of the forceful annexation of their land (Elkins, 2005: 14).

The Barazas have always been a key avenue in which government and police information is relayed to the people. According to the Administrator (2008), it’s through these public meetings that the administrators and police commanders act as a mouthpiece and deliver all the issues concerning the government/police together with its plans. According to Angelique Haugerud (1997), Barazas have been key to relay of police information to the people. The public barazas provides important information to the police concerning their welfare on matters of security. The police also disseminate information to the locals during the barazas. The main limitation of this method is that there is no real dissemination of information and it consumes a lot of time.

One of the most used mobile platform first developed in Kenya is ushahidi, which was used for collecting and mapping inputs from citizens. The open-source platform was used to report eyewitness accounts of post election violence and human rights abuses following the disputed election in 2007. The simple open-source software, pairing geographic information system (GIS) and mobile technology, allowed Kenyans to submit eyewitness reports of riots, rapes, deaths and stranded refugees via email and text message, locations of which were then plotted on a map on the website. In the end, over 45,000 reports were submitted in real time, collecting more testimony than reporters and elections monitors combined. The platform also helped create a database and historical archive of election incidents, which can now be referred to and accessed for election-based research and for future election planning purposes (United Nations Development Programme, 2012).

The Ushahidi platform addressed the issue of the Kenyan locals disseminating information and there was no platform for the police to give them feedback or disseminate other information to the locals. The platform has not build grounds after the post election violence due to little community awareness creation on the importance of the application. In contrast to the proposed dissemination of information to the locals via a mobile application provides feedback to the locals in real time, which the Ushahidi platform does not offer. The platform also does not limit the police to providing feedback only but also disseminating any information termed crucial/important to the Kenyans.

KaaRada application is another platform created by Nailab with the intent of making everyone a citizen police. The application aims to solve the situation of lack of security by having a reporting mechanism through crowd sourcing. The application further allows the users to get in touch with various police hotlines to report crime. Through the application information – including the location of the crime, when it happened and the victim’s personal details, are then passed on to a local police station or the police headquarters. The information also serves to alert other users of the crime (Wainaina, 2015).

The KaaRada application does not address the dissemination of information or alerts to the citizens. Moreover, the user has to manually add the location of the crime instead of automatically adding the location.

## 2.4: Design methodology Review

Agile development methodology is a conceptual framework for undertaking any software engineering project. Agile methods attempt to minimize risk and maximize productivity by developing software in short iterations and by deemphasizing work on interim work artifacts (Eminaelezovic, 2012).

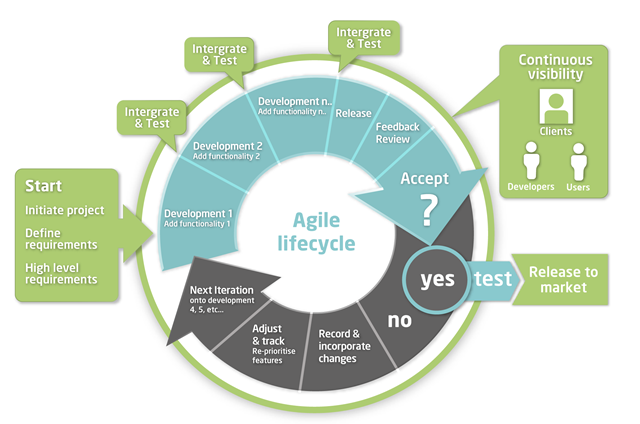


Figure 2.1 Agile Methodology overview (Eminaelezovic, 2012)

## 2.5: Mobile Internet services in Kenya

The data market in the country has grown significantly over time with increased growth in subscriptions as witnessed during the October – December quarter. The number of subscriptions recorded an increase of 10.6 per cent to stand at 23.9 million subscriptions up from 21.6 million posted during the last quarter. Subsequently, the number of data/internet users grew by 11.1 per cent to stand at 35.5 million during the period under review up from 31.9 million subscriptions reported as at the end of the previous period. This translated to an internet/data penetration level of 82.6 per cent up from 74.2 per cent recorded during the previous quarter. Mobile data held pole position with 23.7 million subscriptions representing an increase of 10.2 per cent from 21.5 million subscriptions recorded last quarter. The growth in mobile data/Internet is attributed to the increased affordability of Internet bundles offered by the various Internet/data providers as result of increased fair competition in the data/Internet market. Growth of e-commerce services and social networking sites is also a factor leading to increased internet/data usage. The use of utility services such as online mobile banking, online research on mobile devices by most Kenyans has also fuelled the uptake of internet/data services (Communication Authority of Kenya, 2016).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Internet/Data Subscriptions** | ***Dec-15*** | ***Sep-15*** | ***Quarterly V ariation (%)*** | ***Dec-14*** | ***Sep-14*** | ***Quarterly V ariation (%)*** |
| **Total Internet Subscriptions** | **23,929,657** | **21,628,271** | **10.6** | **16,453,019** | **14,845,967** | **10.8** |
| **Mobile Data Subscriptions** | 23,794,550 | 21,511,638 | 10.6 | 16,338,990 | 14,745,836 | 10.8 |
| **Fixed Wireless Data Subscriptions** | 19,507 | 13,221 | 47.5 | 17,537 | 16,999 | 3.2 |
| **Satellite Data Subscriptions** | 489 | 720 | -32.1 | 712 | 598 | 19.1 |
| **Fixed DSL Data Subscriptions** | 3,732 | 2,500 | 49.3 | 14,512 | 12,394 | 17.1 |
| **Fixed Fibre Optic Data Subscriptions** | 111,354 | 100,192 | 11.1 | 81,243 | 70,115 | 15.9 |
| **Fixed Cable Modem** | 25 | 25 | 0.0 | 25 | 25 | 0.0 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Subscriptions** |  |  |  |  |  |  |
| **Estimated Internet Users2** | **35,549,620** | **31,985,048** | **11.1** | **26,163,560** | **23,229,026** | **12.6** |

Table 2.2: Internet Subscriptions and Internet Users

***Source: CA, Operators’ Returns.***

# CHAPTER 3: Research Methodology

## 3.1 Introduction

This chapter describes the research methodology to be used in order to establish the impact of the dissemination of information to the citizens by police using a mobile application. The description of the sample size and its characteristics, the procedure for sampling, the procedures for sampling, data collection and ethical consideration is also included. Moreover, it describes the instruments used as well as the data analysis procedure.

## 3.2 Development Process

The study will use 5 stages, which include Analysis, Design, Build, Testing and Maintenance as shown on Figure 3.1. (Olin, 2013)

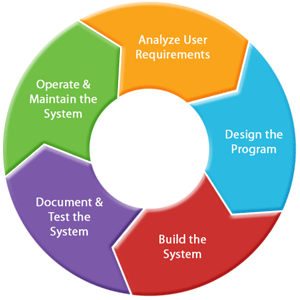


Figure 3.1: Research Methodology steps

## 3.3 Research design

The research uses quantitative and qualitative research methods. Qualitative is used mainly to understand the problems and challenges the police are facing while disseminating information to the locals. The quantitative method is used to know how the system to be implemented is effective and efficient as compared to the current methods.

## 3.4 Location of study

The research is basically carried out in Nairobi county with the emphasis on police officers and a sample of locals. The locals are grouped into groups according to their ages and the level of education.

## 3.5 Research purpose

The purpose of the research is to critically analyze the usage of mobile technology in dissemination of information to citizens while considering analysis of the current methods and their limitations in information dissemination. The analysis gathers from the world in general to the Kenya case.

## 3.6 Sample size

In order to determine whether the dissemination of information by police to the locals using mobile technology, a group of 50 police officers is selected to participate and 500 locals are also selected to participate.

## 3.7 Ethical measures

The privacy and safety of the respondents are considered and the main among them are the respondent’s consent and confidentiality. To ensure the consent all essential details related to the research will be relayed to the respondents so as to ensure that the respondents know of the objectives and their role in the study. The questionnaire will exclude respondent names and other personal information to guarantee respondents confidentiality.

## 3.8 Research Instruments

The randomly selected respondents to provide the data required according to their responses. These data helps in creating and improving the way police are disseminating information. The main instruments used include the following:

### 3.8.1 Questionnaire

Online survey is given to the selected population, both the police and the locals. Emailing them and receiving and processing their responses online.

### 3.8.2 Interview

Personal interviews are done to both the police and the locals. This helps in getting the user experience and the information is sufficiently accurate since it is a face-to-face interaction with the respondents.

## 3.9 Conclusion

This chapter helps in ensuring that the logistics part of the project is well put in place and the data collected makes it sufficient in making conclusions on the efficiency and viability of the mobile application in solving the problems police-locals relationship is facing. Ethical issues as regards the privacy and safety of the respondents were considered and key among them were the respondents consent and confidentiality. To ensure consent all essentials details related to the survey were relayed to the respondents and this ensured that respondents knew of the study goals and also of their role in the study. The questionnaire excluded respondent “names and other personal information thus ensuring respondents” confidentiality.

# References

United Nations Development Programme. (2012). *Mobile Technologies and eMpowerMenT: enhancing human development through participation and innovation.* United Nations.

Wainaina, E. (2015, April 14). *Kaa Radah App Seeks To Crowdsource Security Reporting From Kenyans*. Retrieved April 12, 2016, from techweez: http://www.techweez.com/2015/04/14/kaarada-app-seeks-to-crowdsource-security-reporting-from-kenyans/

Communication Authority of Kenya. (2016). *QUARTERLY SECTOR STATISTICS REPORT SECOND QUARTER FOR THE FINANCIAL YEAR 2015/2016 (OCTOBER-DECEMBER 2015) .*

Eminaelezovic. (2012, December 2012). *Agile Methodology*. Retrieved April 12, 2016, from adfkickstart: http://www.adfkickstart.com/agile-methodology

Darrel W. Stephens, Hill , J., & Greenberg , S. (2011). *strategic Communication Practices: A Toolkit for Police Executives .*

Hosmer , C., Jeffcoat , C., & Davis , M. (2013). *Use of Mobile Technology for Information Collection and Dissemination.*

Olin, V. (2013). *The Software Development Life Cycle*. Retrieved from ARANYA: http://www.aranya.com/blog/Aranya\_Blog/Im\_Getting\_Ready\_to\_Start\_a\_New\_Software\_Project\_What\_Should\_I\_Expect\_20.html

Stephens, & W, D. (2011). *Survey of Major Cities Chiefs Association Members .*

THE KENYA POLICE SERVICE. (2003). *THE KENYA POLICE SERVICE STRATEGIC PLAN 2003-2007.*