Computerize Crime Tracking Information System: Case Study of the Police Divisional Command Mubi

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Abstract

This project work identifies the challenges facing police department that seek to implement computerized crime management information systems. The project highlights the importance of police departments identifying crime records and then designing system that accomplish the tasks specific to the needs of their end-users. Data transfer, data integration, system, customization and confidentiality issues are discussed. One of the most significant shortcomings in the delivery of justice are; the use of manual means in keeping and entering crime records into record books as well as officers had to undergo through rigorous process of searching a crime case file and such could consume much time most especially if the file is on request by the court. Hence the new system designed will aid the police in managing crime records and thereby facilitate timely delivery of judgment by the court. The software was implemented using Html, CSS, Php and MySQL database.

Keywords: Case, Security, Tracking, Information, Crime, Data and Record

1.0 INTRODUCTION

1.1 Background of The Study

Crime is as old as mankind itself; Crime is a natural phenomenon that no society is free of, and can be outlined as an act inconsistent with the accepted norms of any given society (Cajetan & Ifeoma, 2020). The Daily Times received a significantly larger number of crimes reports with an average of 15 reports per day, whereas the New Nigerian averaged 12 reports per day (Murty, *et al*, 2011). It is not possible to find a crime-free society. As long as human beings have feelings, they are inclined to attempts crimes (David,*et al*,2017). Conversely the criminals in today's society use various advanced technologies and commit crimes in an exceedingly tactful way. This has increased the complexity of crime investigation (Bogahawatte & Adikari, 2013).

Another area of concern is that the age long system of intelligence and criminal record maintenance is no longer adequate in handling the prevailing crime situation (Barrow,*et al*, 2019). Manual techniques cannot give correct, reliable and comprehensive knowledge around the clock and they also don't facilitate in trend predictions (Tade & Olaitan, 2015).

Traditionally we tend to observe criminals by finding any clue of crime is, as a result of we tend to grasp those criminals may divulged some crime signs when committing crimes (Dorogyy, *et al*, 2018). It was therefore a relatively straightforward for the police or detectives to search out criminals utilizing this approach. Otherwise, we can get information from the local folks within the crime space (Coupe, *et al*, 2019). So, for the data mining process we'd like to grasp a criminal's previous crime strategies, crime location, crime sorts. After collecting all this information, we can get a prediction of crime (Syed & Babu, 2020).

Manual crime management techniques end up in lower productivity and ineffective utilization of manpower. The answer to this ever-increasing downside lies within effective use of knowledge technology. Crime tracking information system uses computer-generated records as an interface for the access and integration of large amounts of location-based data (Bako, et al, 2020; Aduloj, et al, 2018). Crime detection is a necessary part of modern world. Crime tracking information system can help facilitate a reduction in crime. These systems can enable crime prediction beforehand based on the number of different analysis technique. These systems must be able to integrate with other systems of smart city component so as to enable monitoring and control which will in turn make data sharing and management more efficient (Dorogyy, et al, 2018). Crime pursuit systems enable security personnel to prepare effectively for emergency response, verify mitigation priorities, analyze historical events, and predict future events (Aarset & Glomseth, 2019). Crime tracking system helps identify the ideal suspects to increase investigators suspect base when no leads are evident (Badiora, 2015). The ability to access and process information quickly while displaying it in a spatial and visual medium allows agencies to allocate resources quickly and more effectively (Bako, et al, 2020). Crime tracking (chasing) software helps co-ordinate vast amounts of location-based data from multiple sources. These systems enable the user to layer different information and consider the information most important to the actual issue or mission (Dorogyy, et al, 2018). These systems are used all over the world over by police departments, both large and small, to provide solutions for crime analysis, criminal pursuit, traffic safety, community policing, Intranet/Internet mapping, and various tasks (David & Suruliandi, 2017).

1.2 Statement of Problem

The Nigerian police force use manual means, in keeping and entering crime records into record books instead of it being in form of data input into computer storage system, problems arise and these problems have plagued the Nigerian police force and affected the policing system in the country for instance an officer had to undergo through rigorous process of searching a criminal case file and such could consume much time most especially if the file is on request by the court, this have been a plaque Nigerian police force and has affected the policing system in the country.

1.3 Scope and Limitations of the Study

The scope of the study focuses on the digitizing a crime tracking management information system that is restricted to info style for the storage of crime information and retrieval. Some of the

Obstacles that inhibited this study include;

Time constraint: The time frame assigned for the accomplishment of this project was terribly short which makes one to work under pressure that resulted to an unease implementation of some necessary features options.

Establishment policies: Most workers of the institution hold back some relevant information required for this project due to security reasons.

Power failure: Due to shortage of power supply one has to walk along distance to a place of more stable power supply so as to meet up thereby resulting too much energy loss.

Financial constraint: Due to financial constraint I couldn't source all relevant material for this project.

2.0 LITERATURE REVIEW

2.1 Nigeria Police Force History

The police service is a delicate balancing act between maintaining law and order as mandated by the government for employers towards safeguarding the public interest of the citizens (Nyam, 2021). In any democratic dispensation, the police force is the foremost law enforcement (Iheriohanmma *et al.*, 2020). In the accomplishment of their constitutional mandate, the citizens' expectation is that the police should work hard to maintain law and order, and this will let the police, in all times, to exhibit an unbiased fairness and honesty in their job roles (Iheriohanmma *et al.*, 2020). To this, the public expects no double standard from the police in the execution of their statutory duties (Iheriohanmma *et al.*, 2020). Prior to the mid-1800s, citizens were responsible for their own protection (Afolabi & Omole, 2011).

Early accounts of systems of law enforcement in Western European countries indicate minimal changes across the time between the Medieval (up to about 500 ad) and Middle Ages (between 500 and 1500ad) (Akinyetun, 2022). During most of this time, Justices of the Peace were appointed by the Crown of England (Adegoke, 2014). Constables were established by the English Parliament in 1285 through the Statute of Winchester and mandated the pursuit of criminals by local citizens under the direction of a constable (Iheriohanmma et al., 2020). This was based on the concept of tithing and a mutual pledge system. This grouped large communities together under a magistrate in an attempt to provide for community protection as well as a system of justice (Eme & Andrew, 2013). This frankpledge system required every male over 20 years of age to form a group with nine of his kin or neighbors (tithing), to patrol and protect their individual communities (Agwanwo, 2014). These males were required to have a working firearm in their houses to respond to the hue and cry of the constable or risk facing a stiff fine (Goforth & SIims, 2016). Nigeria Police Force is centrally established and controlled by the constitution of the Federal Republic of Nigeria, 1999 (Section 214) (Egunjobi, 2016). Likewise, the appointments, recruitments, promotion and dismissal are done internally within the force except for the principal officers which are subject to executive appointment and control especially the Inspector General though with significant influence of the Police Service Commission which itself is appointed by the Executive president (Afolabi & Omole, 2011).

According to Section 309, (I &2) of the Police Act, the Inspector General of Police is charged with supreme command of the Police Force and maintenance of public safety, order and is to keep the Executive President and Commander in Chief of the Armed Forces of Nigeria fully informed of the state of public security throughout the federation. There are also the establishments of the Ministry of Police Affairs and a Police Service Commission (Egunjobi, 2016).

2.2 Crime Mapping System

The fear of crime has been studied extensively in disciplines such as criminology, sociology, geography, urbanism, architecture... and also in the field of psychology, particularly social and environmental psychology (Juan, *et al*, 2014). Deciding a policing method is always influenced by some facts of place, Jurisdictions, zones, and incident locations are all related to geography (Juan, *et al*, 2014). From pin maps to modern crime maps, mapping has always been an important element of law enforcement. Geographical Information Systems and crime

mapping are only a more developed and modernized implementation of traditional types of things that law enforcement agencies have always done (Juan, *et al*, 2014). In today's world, police duties are assisted by high technologies such as Geographical Information Systems and crime mapping (Dağlar & Argun, 2016). Computerized crime maps provide crime analysts and departmental planners with a means to spatially relate crime conditions, patterns, and trends (Dağlar & Argun, 2016). Example, an analyst can search for places where high levels of crime (Dağlar & Argun, 2016).Correlate with relatively low levels of patrol assignments. Patterns can be explored within a mapping system by searching places with elevated levels of crime against patrol deployment patterns across temporal dimensions (Juan, *et al*, 2014). Trends can be uncovered by using past patterns to predict the locations of emerging hot spots of crime. Graphic presentations of search findings provide a powerful medium to communicate conditions, patterns, and trends, often creating an avenue for analysts to bring about significant policy changes (Dorogyy, *et al*, 2018).

In Jersey City, for example, computerized crime mapping capabilities have been used by departmental planners to develop beat boundaries and to help match community service officers with particular ethnic and racial neighborhoods. In another project, the Jersey City Police Department crime mapping system was used to merge crime data with neighborhood characteristics (Juan, et al, 2014). Boundaries were created to match Census data with police data aggregated to the beat level of analysis (Das & Nayak, 2021). In this project, workload data were merged with indicators of crime (such as emergency calls and arrests) and then mapped along with Census data showing population densities, proportions of youths by district, and other community-level factors that correlated with high or low workloads. Using these maps, the police department embarked upon a restructuring project that precipitated widespread changes to the organizational structure and function of the department (Juan, et al, 2014). While police department planners and crime Analysts are typically interested in using computerized crime mapping systems to answer broad-based policy questions, street-level problem-solvers use crime mapping to answer different types of questions. Street officers still require mapping tools to examine conditions, patterns and trends in crime problems, but the units of inquiry and their data needs are often quite different from crime analysts' demands (Das & Nayak, 2021).

2.2 Information System

An information system is any combination of information technology and people's activities that support operations, management and decision making. Crime analysis is a very strategically and confidential term for both police and detectives (Syed & Babu, 2020). Historically, we detect criminals by finding any clue of crime because we all know that criminals have released some crime signs while doing the crimes (Syed & Babu, 2020). So, it is very easy for the police or detectives to find the criminals if the criminals make crimes in this way by releasing some signs of crimes (Das & Nayak, 2021). Otherwise, we can get information from the local peoples of the crime area and others from sequence of action that is produced and drawn from data captured from social networks, camera feeds, mobile data such as geo-locations, and movements (Hamdy, *et al*, 2015). The information received from various approaches could be essential in adopting several methods to control forthcoming criminal activity (Das & Nayak, 2021).

3.0 RESULTS AND DISCUSSION

3.1 Introduction

The preceding chapter was devoted to system design where the main components of the system design were described in details. This chapter presents the implementation of the system designed. During the implementation of this research work which is the last step of system development life cycle.

3.2 Results

The results here contain different form which include index page as an introductory layer which consists of the topic, and login. On a click on the login at the top right corner of the page. It will navigate you to the login page. The login page consists of two users the user login and the admin login. The user is expected to sign in by typing the appropriate username and password into the text boxes and then click the "OK" button. The system refuses access until the correct username and password is entered and the "OK" button clicked. The user login will navigate you to the next page which is the home page where by you will be able make choices whether to enter criminal information or track the record of any criminal.

Figure 4.1 index page



Figure 4.3 login page

3.3 **Discussion**

The interfaces above shows how interaction with the system from the home page were done, that allow user to select activities to be performed. Hence the admin is the only person that can register a user before he/she could be able to login into the system in order to grantee security of the system. Whereby it's not going to be everybody that will be granted access to the system only those that are duly registered. This will also aid in tracking every officer that login. The admin user can track record of all incidence that occur.



4.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Summary

In summary, the aim of this research work covers the activities of crime tracking system with the hope of creating a reliable application to track record of all incidences. Hence, with the implementation of the crime tracking information system designed was made and it will be much easier for police to keep track of crime information in other to have control over the state.

4.2 Conclusion

The complexity and anonymity of computer systems may help criminal camouflage their operations. The victims of the costliest scams include banks, brokerage houses, insurance companies, and other large financial institutions. Most people guilty of embezzlement do not have criminal histories. Embezzlers tend to have a gripe against their employer, have financial problems, or simply an inability to resist the temptation of a loophole they have found. Screening and background checks on perspective employees can help in prevention; however, many laws make some types of screening difficult or even illegal. Fired or disgruntled employees sometimes sabotage their company's computer system as a form of "payback". This sabotage may take the form of a logic bomb, a computer virus, or creating general havoc. Some police stations have developed measures in an attempt to combat and prevent crime. Police sometimes implement security measures such as cameras, fingerprint records of crimes, and background checks. Not only do these methods help prevent crime, but they help police to keep track of crimes and maintain a database of criminal records.

4.3 Recommendation

It is recommended that the Nigerian police be adequately trained on the use of Information Technology in crime tracking. Computer literacy program should be organized for the Nigerian police. This can be carried out set by set. At the end of the training, it is recommended that the crime tracking system be deployed to every police station for recording and tracking of crime information. In addition, the Nigerian government should implore the use of geographical Crime Mapping Software in order to reduce crime occurrence and this will give an aid to the Nigerian police force in terms of quicker response to the crime scene and nabbing of criminals.

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