

Development of Electronic-based Investigation Management (EMP) of POLRI

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Abstract. This paper discusses the development of an investigation system at the National Police Headquarters based on an information system named EMP (Electronic Investigation Management). This system is very useful for the Indonesian National Police in managing the investigation process which is a major part of law enforcement. Through this system, the investigation process can be carried out transparently, accurately and in a timely manner. The method used is the SDLC (System Development Life Cycle) method, which consists of 5 stages namely Plan, Design, Develop, Test and Deploy. Currently the system has begun to be implemented. With this system, the law enforcement process can be carried out properly, especially, legal certainty can be created for all parties. Another advantage is the investigation process can be carried out properly and in a controlled manner. Therefore POLRI can carry out their duties properly based on the principles of clean government and good governance.

Keywords: e_Investigation Management, clean government, good governance, SDLC

1. Introduction

1.1. Background

The information age and digital revolution developed rapidly after the invention of the internet and the World Wide Web. Now, the internet has become a global tool used to accelerate the flow of information and communication for organizations. Various applications such as e-tickets; e-budgetting; e-travel; e-book; e-cinema and so on have become an inseparable part of daily human activities. [1]

The good law enforcement needs fast and accurate data processing. This process must be carried out transparently, properly and continuously, because it is related to the fate of people and also the fate of victims as well. At present the access of the public and all interested parties to information and the process of law enforcement has not been fully encompassed properly. To find out the status of an investigation, victims of crime must intensively communicate with the Investigator directly. Likewise, various parties are very difficult to obtain the criminal data or statistic. Beside it require a long time, the validity, accuracy and updating of the data is often not properly. [2]

The disclosure of information for the public has actually been mandated in Article 15 paragraph (1) item j of Law Number 2 of 2002 concerning the Indonesian National Police. The law states that, in the context of carrying out its main tasks, the National Police organizes the National Criminal Information

Center. Likewise in Law Number 14 of 2008 concerning Openness of Public Information, it is stated that public bodies are required to build and develop information and documentation systems to manage Public Information properly and efficiently so that it can be easily accessed. [3]

The National Police is a public body, and investigation information is public information that is managed by the National Police. Therefore, the National Police should provide a means of fulfilling public rights relating to criminal information, moreover information on the development of case handling needed by the complainant or crime victim. Law enforcement is crucial and is very important in the constellation of state administration. Injustice; weak enforcement; Nepotism Corruption (KKN); discrimination in addition to being a challenge for national integration will also affect the conditions of national security. Improving the investigation management system will certainly be a strategic step for the National Police in implementing the Bureaucratic Reform Agenda as planned by the Government to realize clean government and good governance that are universally believed to be the principles needed to provide excellent service to the community.

1.2. Problem Definition

The investigation process is the initial part of the law enforcement process and is a fairly complex process. The transparency, accuracy and principles of legal certainty must be properly enforced. Therefore we need a system that is able to guarantee all the criteria of the law enforcement process. The system referred to is a technology-based investigation management system that is able to realize the principles of clean government and good governance. In order to realize the intended management system, this paper will discuss the e-investigation management (EMP=Electronic Investigation Management) which is able to answer : a. The realization of law enforcement that meets the principles of clean government and good governance. b. The realization of law enforcement carried out today is seen from the approach of the principles of clean government and good governance. c. The establishment of an appropriate law enforcement system in accordance with the aim to realize the principles of clean government and good governance. d. The establishment of a law enforcement system for the internal and external interests of the National Police in supporting the realization of the principles of clean government and good governance.

1.3. Theoretical Background

Every organization needs a good management to achieve its goals.[4] Likewise, a country as a large and complex organization requires a management system to achieve its national goals. The approach to managing a state organization is carried out through a system approach in which all elements and parts will be correlated and organized to work together towards national interest. National Management System (Sismennas) is a management system implemented in state Organization. [5]

The Investigation Management System is a subsystem of the Law Enforcement System, and the Law Enforcement System is a sub-system of the National Management System. Therefore dynamic national developments will affect the Law Enforcement System and the Investigation Management System. In the midst of global change as a result of the development of information technology that gave birth to "digital society", the Investigation Management System must adapt to these changes. If the adaptation process is not carried out, the Investigation Management System will not be effective which will result in ineffective law enforcement. [6] [7]

1.3.1. Effectiveness of Law Enforcement. The effectiveness of law enforcement is determined by five factors, namely: the legal factor itself (the law); law enforcement factors, namely those who form or apply the law; facility factors or facilities that support law enforcement; community factors, namely the environment in which the law applies or is applied; and cultural factors, namely as a result of work, creativity and taste based on human initiative in the association of life. [8]

There is a strong correlation between the five factors above as well as the need for adequate information system support. The first factor, the quantity and quality of crime increases rapidly. New modes and motives for crime have arisen facilitated by technology, especially information technology,

along with the increasingly dynamic development of human life. This condition is in line with what was conveyed by Frederich Carl Von Savigny (1779-1861) "das rechts wird nicht gemacht, es ist und wird mit dem volke" (the law is not made, but it grows and develops with the community). In order to avoid a legal vacuum that can affect the achievement of justice, the Government established various new laws as per the principle of legality, *nullum delictum noella poena sine praevia lege poenali*, because every act is not a crime (criminal act) and cannot be convicted as long or not regulated in positive law. The second factor, law enforcement must be more professional by increasing knowledge, investigation process skills, and understanding the ethics of the law enforcement profession. As stated by Lucius Calpurnius Piso Caesoninus (43 BC) "fiat justitia ruat caelum" which means, "let justice be done, even though the sky will fall". The third factor, law enforcement facilities and infrastructure must be in accordance with the needs of law enforcement itself. Law enforcement is not carried out in a vacuum, because law enforcement is carried out in the midst of a digital society, so law enforcement must utilize information technology / digital technology. The fourth factor is the community factor. Nowadays people live in the middle of the digital era, so it is called digital society. The perspective of the digital community towards law enforcement is changing. In Indonesia, especially since the Reformation movement in 1998, demands for professionalism and transparency in the law enforcement process continue to roll along with the era of freedom of expression. The fifth factor, the law is the work, creation and taste based on human initiative in the association of life. Information technology has accelerated the flow of communication and information between individuals and between groups so as to make the world like a village (global village).

1.3.2. Juridical Basis for Criminal Law Enforcement by POLRI. Article 1 paragraph (3) of the 1945 Constitution of the Republic of Indonesia states that, Indonesia is a rule of law. Next, article 30 paragraph (4) states that "The National Police of the Republic of Indonesia as a state instrument that maintains public security and order has the duty to protect, protect, serve the community, and enforce the law". Both articles are constitutional juridical foundations for the implementation of general enforcement and law enforcement by the National Police. Law number 2 of 2002 concerning the Indonesian National Police is the implementation of the mandate of the constitution above.[9] Article 2 states that "The function of the police force is one of the functions of the state government in the field of maintaining public order and security, law enforcement, protection, protection, and service to the community. Whereas one of the objectives of the aforementioned function is to uphold the law (article 4). Criminal law enforcement in Indonesia is carried out in a Criminal Justice System (SPP), which is a crime control system consisting of police, prosecutors, courts and convicted criminal institutions. Thus, the criminal investigation investigation management system is a subsystem of the SPP. The entire proceedings in the SPP are regulated in Law number 8 of 1981 concerning the Criminal Procedure Code.

1.3.3. Freedom of Public Information and Transparency of the Investigation Process. The right to obtain information is a constitutional human right contained in article 28 F of the 1945 Constitution of the Republic of Indonesia as follows: "Everyone has the right to communicate and obtain information to develop his personal and social environment, and has the right to seek, obtain, owning, storing, processing and conveying information using all types of available channels. Criminal Investigation Information is one of the information that can be known by the public in order to follow the development of the investigation process and as a function of control over the investigator's performance, in addition to information that is exempt from being published in accordance with statutory provisions, it is stated in the National Police Chief Regulation Number 21 of 2011 About Investigation Information System. [10]

Investigation information includes: People Search List (DPO = Daftar Pencarian Orang); List of Goods Search (DPB = Daftar Pencarian Barang); SP2HP; budget plans to be used in investigating and investigating criminal acts; financial accountability issued in the process of investigating and

investigating criminal offenses; the development of the results of the criminal investigation process; and the transfer of case files to the public prosecutor. [11][12]

2. Methods

The idea of system development always appears in line with the demands of the times and in harmony with the theory of system development. [13][14] Every system used by organizations must be continuously developed to respond the future challenges. One common method used in system development is SDLC (System Development Life Cycle). The SDLC method is actually an old model that was developed for the needs of system designers in carrying out the system systematically. SDLC was developed in 1960 to complete a very large project. To develop a large-scale project certainly requires systematic steps so that the project can be done efficiently and effectively. SDLC consists of 5 general steps namely; Plan, Design, Develop, Test and Deploy, as can be seen in the figure 1 and figure 2 below.

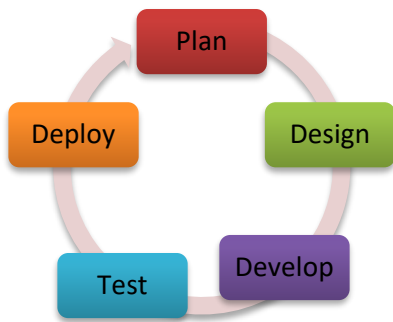


Figure 1. General SDLC

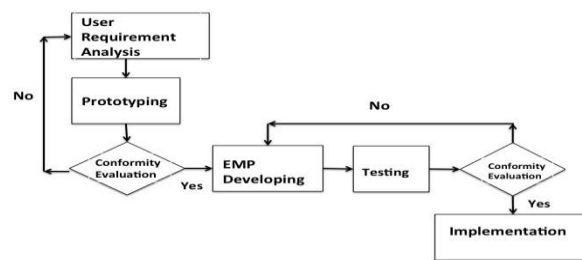


Figure 2. Flow Diagram of EMP Development

The first stage is planning, at this stage an analysis of system requirements and preparation of the steps needed to do the design and construction of the system. In developing this EMP POLRI system to find out the investigation management process that should have been conducted, interviews were conducted with the National Police leaders from the central level (Headquarters) to the regions (Polda). Furthermore the EMP System was built through discussions involving a review team from the Police. Likewise, an analysis of the cost needs and needs of other sources is carried out. The second stage is design, at this stage the determination of the characteristics of the EMP system and the expected capabilities begin. The third stage is the development stage (develope). At this stage, coding and compilation of data_base, menu system and the development of programs are carried out in accordance with predetermined plans. The fourth step is testing. At this stage we conducted various experiments with dummy data to see the validity and reliability of the data and the consistency of the process. The next stage is Deploy. At this stage the noble system is implemented

3. Result and discussion

3.1. Result

3.1.1. EMP system characteristics. The information generated by the investigation management system must have good information criteria, namely: relevant; reliably; complete; on time; can be understood; can be verified; and can be accessed

- 1) System Components: Software contains master data as a source or data reference for conducting various transactions; and transactional modules as a means of entering the investigation process data. EMP system hardware consists of: a server as a container for the EMP system and a data processing database; computer as a tool in developing the system and operating the EMP system; and modems and internet access network facilities supporting access and transactions.

- 2) EMP system limits. The scope of the EMP includes: a) users: all investigators, staff and elements of the National Police leadership; b) main manager: Robinopsnal Bareskrim Polri; c) material: the criminal investigation mechanism.
- 3) The ecosystem outside the EMP system is: a) the Administration and Civil Registration, identity of the reporter ; b) other systems receiving EMP output data include: the (SOPS) Command Center system, Pusiknas, Bareskrim website, SKCK online; the system in operational functions units and Polri staff receiving criminal data for reference in carrying out the functions of the intelligence, Binmas, Sabhara functions; Traffic; SSDM and Srena Polri; and c) the system at the National Resilience Measurement Laboratory (Labkurtannas) of the Lemhannas, the recipient and processor of criminality data in the measurement of the national defense system of Defense and Security.
- 4) Connecting the EMP system is a webservice or Application Programming Interface (API) as a bridge between the EMP system and the external environment.
- 5) Input (EMP) system is main data documents created in the investigation process.
- 6) Output of the EMP system is data of the investigation process and criminal information.
- 7) EMP system processor is a computer programming language to create investigation management workflows and process data and print previews of mind documents.
- 8) The objective of the EMP system is the process of investigating crimes in a fast, transparent, accountable, informative manner that meets the principles of clean government and good governance in law enforcement in Indonesia.

3.1.2. *EMP User.* EMP users in general are as shown in the table below:

Table 1. The EMP User and Its Benefit

No	User	Benefit
1	Main User: Investigator, Assistant Investigator, Criminal functional unit and Commander.	Create of Investigation Administration documents, Processing criminal data and, Implementation of management functions
2	Public: Reporter/Victim, and General public	Monitoring the progress of Cases handlings
3	Internal POLRI: Operational functional Unit, Human resources management	Evaluation and monitoring the performance of staff
4	Government Institution; Criminal justice Institution, etc	Case statistic, POLRI performance, etc

3.1.3. *Dashboard Structure.* EMP is equipped with control menu dashboards such as the data search menu, case handling evaluation, case data search, and others. The process of preparing the menu is based on the logical process of management of the investigation processes, consist of ; the investigator's access, access to the document, the stage of the investigation, the document's access and storage, as can be seen in the figure 3 and figure 4 below .

1. **Criminal case data search menu** : Case data search using keywords (LP) Investigation Report Number; name of the reporter; victim's name; reported name; or event, for example *saracen*. The information displayed includes case data, case age, administrative investigation documents that have been made, including the latest status of case handling.
2. **Evaluation of handling criminal cases menu:** The evaluation menu contains data on the composition of Case Amount (Crime Total) and Case Settlement (Crime Clearance); case arrears; case settlement time. This menu is used to evaluate the performance of the Criminal Investigation Unit and regional units. Number of cases is the number of LP documents received by the Criminal Investigation Unit; the number of case settlements is the number of LP documents plus phase II or SP3 documents made by the Investigator; Case arrears are the number of LP documents that have not been completed with Phase II or SP3 documents; Case

settlement time is calculated from the date of the LP document up to the date of phase II or SP3 documents. Some of the information generated from this menu can be seen in Figure 6 regarding the average length of the investigation process.

3. Evaluation of investigation performance menu : This menu is used to assess the quantity and quality of investigation performance, consist of : total number of document, the average number of documents per each investigator, number of document have been completed, document status, etc. The evaluation matrix or diagram is displayed according to the level of analysis required, the national, regional or district level even at the sector level.

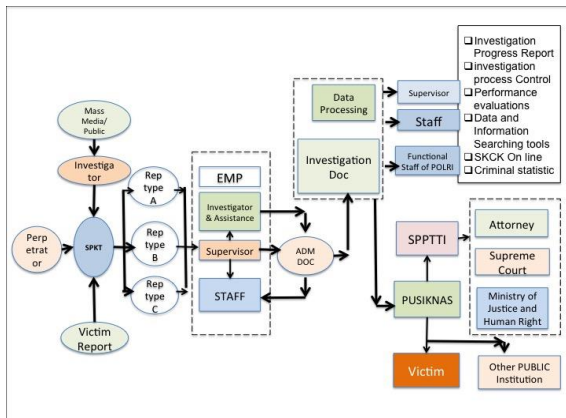


Figure 3. Investigation flow chart

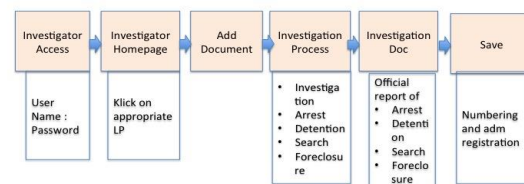


Figure 4. Dashboard Structure

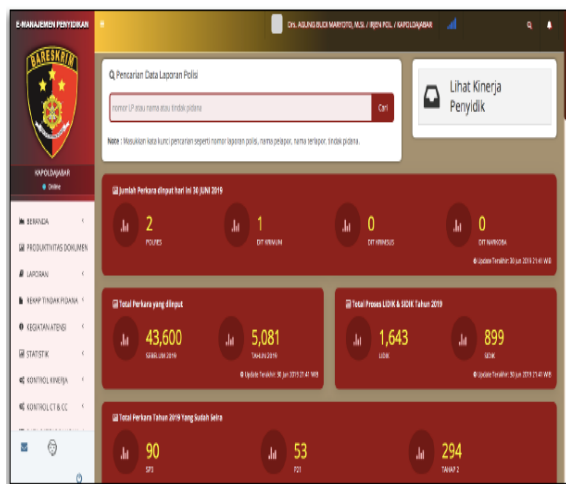


Figure 5. Main Menu

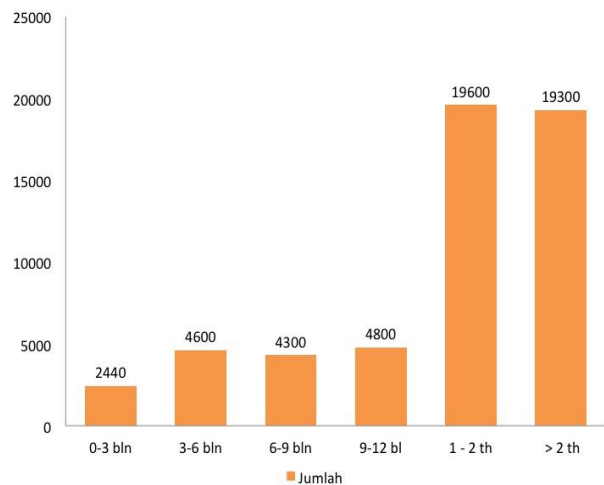


Figure 6. Duration of the investigation (month)

3.2. Discussion

Currently the system has begun to run, however the old system has not been completely disconnected. At present there are at least 43,772 investigators who must carry out their duties every day. In the investigation process there should not be the slightest mistake regarding the name of the person, type of case, locus of the incident, date of the incident as well as the name of the reporter and the name of the victim. Mistake of the names involved or time of locus etc, will be fatal. Every case must be able to monitor its progress, no any single case can be neglected because it involves human destiny. The documents involved in one case are usually covered a maximum of around 180 types. Meanwhile the investigated cases could reach 400 thousand cases per year. Therefore the documents that must be managed every year are very huge, approximately around 216 million documents. Without support of

appropriate technology, investigation management will be very difficult to carry out properly. By using EMP every case can be monitored properly as well as the performance of each investigator. Some informations obtained from this system include the development of cases, the taskload of investigators and also the number of cases that have not been followed up on, etc, as can be seen in the pictures 7,8 and 9 below.

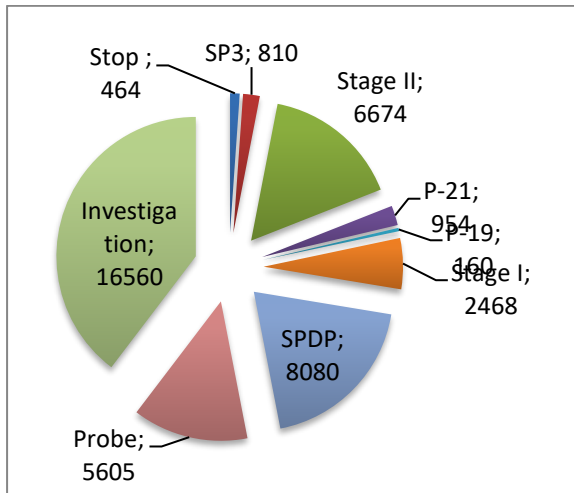


Figure 7. The case handling progress

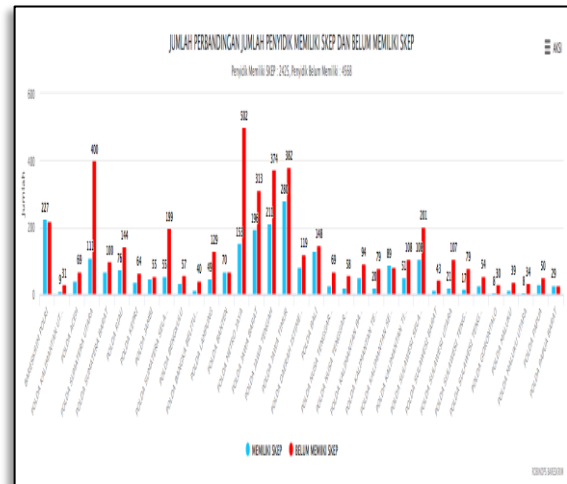


Figure 8. Statistics on the average duration of the investigation process (days)

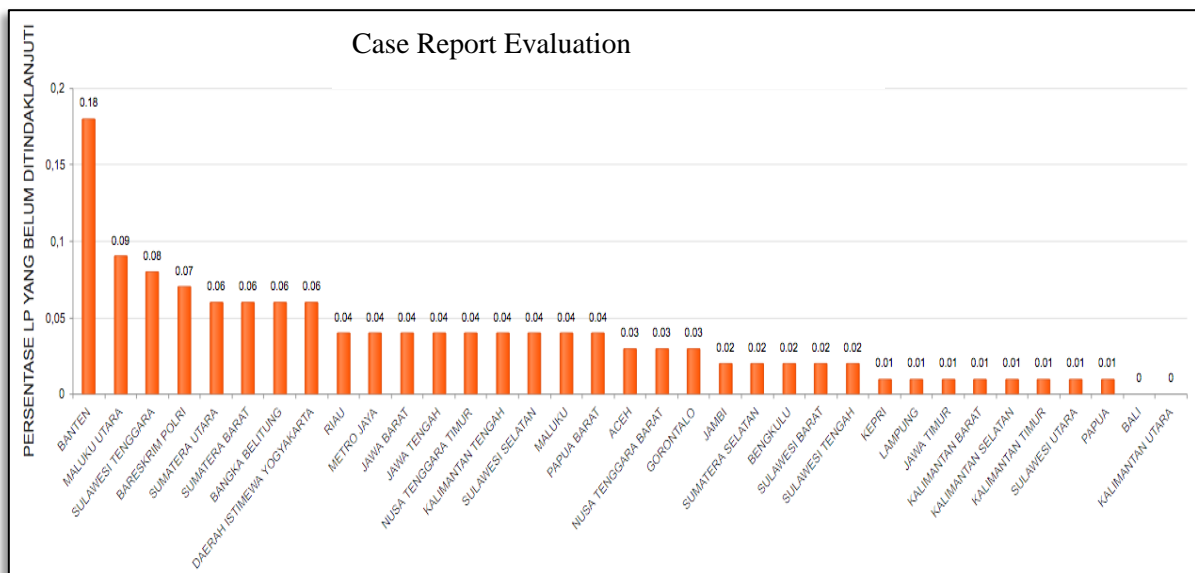


Figure 9. Percentage of Case Reports (LP) that have not yet been addressed (%)

4. Conclusion

From the description above it can be concluded that the EMP, which is supported by utilizing the information system is very helpful to the POLRI especially in terms of:

1. The law enforcement can be done based on clean goverment and good governance principles.
2. The investigation of various cases can be managed more easily and comprehensively, and there was no duplication of the investigation documents.

3. The progress of the investigation can be traced easily, and the performance of investigators can be monitored properly.

4. Many other institutions can take advantage of criminal statistics easily

With EMP, the error rate can be reduced. Likewise, Supervisor and communities can monitor the performance of the Indonesian National Police in carrying out its duties. Transparency and information disclosure can also be well conducted.

Although the system is running well, some improvements still need to be done. First, because not all regions have adequate network facilities, network construction must continue to be carried out properly. Secondly, not all personnel have mastered the system, therefore training programs must continue to be intensified. Third EMP needs to be developed towards smarter systems

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