E-Tracking Application for Reporting Information System

A S Sitanggang, SV Kusumaningrum
Universitas Komputer Indonesia, Jl Dipatiukur No 112-116 Bandung 40132, Indonesia

Email: andri.sahata@email.unikom.ac.id

Abstract. The purpose of this research provides services to the public about reports of losses. From the activities carried out it would produce an application called the reporting system through a web-based E-Tracking application that will be applied in the community and the police. In this study also uses the prototype method. That method consists of needs analysis, application testing and application improvement. This application provides an online loss reporting function and the results of the development of the loss, the first follow-up from the police to the community is the ease of managing loss reports, and facilitating notification of developments in reporting to the public. With the existence of the application, it became a connection to people’s trust in the performance of the police, especially for the people in the Coblong area, Bandung, West Java. The presence of this application can help both parties in solving the case of loss of goods / securities with good cooperation.

1. Introduction

The tracking information system is an information system that consists parts of the trip that someone does to process travel data, so as to produce a track record information from the trip made to a place[1]. With the presence of tracking information system is a part of several technologies that can help the community and the police in receiving information in a complete and accurate manner.

Referring to the problem that the Coblong Police Sector has not optimally provides information in the form of content, methods, time and public reporting to the police. That means people in Coblong who often experience loss of goods or securities were experienced difficulties in reporting and receiving the results of the reports they made. Public opinion about reporting resulted a thought that their lost items would definitely not return. This has caused a lack of public trust to the police, even though the police have tried well in solving community events / reporting. From the existing problems, previous research has been carried out, namely "Service Report Loss (E-Report) With Rapid Application Development Method". The researcher designed a lost e-report information system that is useful for reporting loss so that it is easy to get a Certificate of Report Loss (SKTLK). Web-based applications provide reports on loss, but that system is only limited on reporting, does not provide facilities to monitor the extent progress of the report [2]. Other research is "Designing an Integrated Police Service Center Information System for Citeureup Cimahi Sub-District Police," the researcher designed an integrated Police Service information system which included the manufacturing process until the STTLP (Police Report Receipt) documentation process in a web-based application. Similar to the previous research, the system that has been created only served to assist the reporting process from the public to the police[3].
Research on loss reports is also discussed, namely Web-Based Lost Vehicle Data Application (Case Study: Cimahi Police Station) where the creation of a web-based lost vehicle data collection application in this final project is intended to process or manage reporters' data, to make it easier for the officers to find the reporting data and enter the reporter's data [12].

From the three researches above, there are similarities with this research that these researches have aims to improve the police services to the community. Another similarity is that they both designed a system that was useful to assist the process of reporting losses made by the community to the police. To improve the service of the Coblong Police Sector for the community, an effort to provide repair facilities for reporting by adding functions where the community could receive information on monitoring the results of reporting has been made. So that the community can see the development of the cases that occur.

2. Method
In developing the e-tracking information system at Coblong Police Station, we used descriptive research methods and action research methods. Descriptive research method is describing and analyzing the existing as well as true conditions. The method of action research is a method of research carried out after descriptive research methods. In the action research method, the researcher takes action by building an e-tracking information system. The following is shown in Figure 1.

![Figure 1. Research Method](5)
Method of collecting data

1. Primary data source
   Primary data is data obtained directly from the first person. The following are the primary data sources used in this study.
   a. Observation
      Observation is a primary data collection technique that is carried out by making observations directly on the object of research, namely Polsek Coblong - Bandung Reskrim Unit[5][6].
   b. Interview
      The interview is a method of collecting data by conducting questions and answers to respondents in order to obtain information needed by a study. Parties from the object of the research concerned and used in this study with Bripka Budi Boy Riksa S. H. from the working section of the Coblong Police Reskrim - Bandung[5][6].

2. Secondary data source
   Secondary data is data obtained not from the first person but from another person. Secondary data in this study were obtained from the Polrestabes Bandung website. The following are some secondary data obtained in this study[5]:
   a. Data Police Report 2017
   b. SP2HP A1
   c. SP2HP A2
   d. SP2HP A3
   e. SP2HP A4
   f. SP2HP A5
   g. News
   h. KTP

System Approach Method
The system approach method in this study is a structured system approach method because the structured approach method provides a clear picture of the data flow used and describes the activities in detail.

System Development Method
The system development method used in this study is the method of developing a spiral system on the grounds that the spiral development method of users and system developers alike can understand the risks and shortcomings of a clearly constructed system.

The following are activities carried out in accordance with the method of developing a spiral system:

1. Planning
   At this stage the researcher plans on the activities to be carried out, and plans for the stages and the research data needed[7].

2. Risk Analysis
   In this second stage the researcher analysis the risks that might occur in the manufacture of the product. The risk includes whether the product produced does not work according to the design and whether there is sufficient time or not in the process of making the product, in this case the e-Tracking Information System at the Coblong Police Station.

3. Engineering
   Activities carried out at this stage are the process of making software.

4. Construction and release
   The fourth stage is construction and release which at this stage is installed, and testing of software that has been built.

5. Customer evaluation
After the software is built, the customer will evaluate this software and identify what is lacking and needs to be corrected [8]

6. Customer Communication
This stage is an important stage because the activities carried out at this stage are communicating with customers, in this case the Coblong Police Sector.

3. Results and Discussion
Based on the problems that occur, the plan described is carried out with several considerations as shown below in Figure 2.

![Figure 2. Result and Discussion.](image)

1. Analysis of documents
   Analysis of documents [9] on the police station with the aim of identifying the needs that really need to be obtained by the police in completing the reports made to assist the police in solving the community’s who experienced cases. This analysis also aims to be the basis of how the user interface design can be built. Analysis of documents in the form of KTP, News, SP2HP (A1), SP2HP (A2), SP2HP (A3), SP2HP (A4), SP2HP (A5), SP2HP (A6), SP2HP (A1)

2. Procedure Analysis
   Aims to clarify how the reporting process should be carried out by the community to the police, and finding out what parts of the process hamper reporting both the police and the community. With this analysis, researchers can translate procedures through a series of functions in the program in the form of tracking information systems. This procedure consists of reporting procedures for losing the community and procedures for the process of notifying the results of investigations carried out by the Reskrim Polsek Coblong.

3. Context Diagram/Data Flow Diagram
   A delineation tool in facilitating researchers to develop a series of reporting processes that occur between the community and the Coblong police station so that the information taken can be implemented in the form of functions/facilities in the system that will be proposed [10][11]. This is done to facilitate the documentation of the functions or facilities described (see Figure 3).
4. Previous research  
   To complement the current research, some guidance is needed in developing the system that has been carried out by other studies, so that researchers can now maximize the functions built specifically to make tracking systems (see Table 1).
   a. Citra Andari, Dedy Rahman Wijaya Reza Budiawan with the title "Web-Based Lost Vehicle Data Application" that took the object of their research at Cimahi Police Station, has a function to assist the Detective in the Cimahi Sector Police with the task of recording lost vehicle data provided by the reporter. The problem that occur the investigators themselves have difficulties, namely irregularities in data management, which causes difficulties to find data from reporters when data is needed at any time [12].
   b. Ahmad Chusyairi, Bintar Rudiawan dan Eko Sasongko, with the title of Service Loss Report (E-Report) with Rapid Application Development Method with function “Changing the service process for reporting loss at the SPKT (Integrated Police Service Center) at the Citereup Cimahi Police Station which originally used conventional methods to use a computerized process”. The problem that happen is the use of conventional methods requires a long time in its service and causes people to experience difficulties when reporting loss so reporting services are lost with the hope that the Citereup, Cimahi, police and community will be helped when reporting loss [2].
   c. A. N. Mayangky and S, with the title “Design of Integrated Police Service Center Information System at Citereup Cimahi Sector Police with function research that designs an integrated Police Service information system which includes the manufacturing process to the process of documenting or storing records of STTLP (Police Report Receipt) in web-based applications”. The problem that happens is lack of police services to the community [3].

   So the purpose of making the system from previous researchers is to provide convenience both to the public and the police in handling cases of reporting loss and for the development of research that carried out. This study will produce a system that provides functions to enable reporters on checking the status of their reports called tracking systems with the purpose of providing information on developments regarding reports of losses that have been recorded on the police.
5. Evaluation
This effort is made to facilitate researchers to carry out mapping through identifying problems that occur in the community and in the Coblong Sector Police to be adjusted again for the functions to be built. This goal was carried out so that problems with the community and the Coblong Police could be achieved. The mapping is as shown in Table 1 [13]:

| No | Problems                                                                 | Part     | Proposed                                                                 |
|----|--------------------------------------------------------------------------|----------|--------------------------------------------------------------------------|
| 1  | There was no ease in reporting loss at the Coblong police station because the reporter had to come directly to Coblong police to report loss. | SPK      | A website-based system is made that makes it easy for reporters to report loss because they can do reporting online. |
| 2  | Incomplete information regarding reports of losses in administration.     | SPK      | Provides a system with a lost report registration form using the validation function so that it is not able to fill in incomplete data |
| 3  | Notification of report status developments                              | RESKRIM  | Made a system equipped with notification in the system that will be sent automatically to provide information to the reporter regarding the progress of the results of the investigation report called the tracking system. |

Table 1 shows a number of problems and the proposed solutions that can help improve police service in public

4. Conclusion
In improving community service, an application development is needed, not only limited to loss reporting application, but also services in providing information on development in the form of applications. It should also provide police's sustainability for reporting made by the Coblong community, so that it will change the paradigm of public trust in police. From the research conducted, the concept and design of the application will be produced. With this design, it will facilitate researchers in building applications in the form of monitoring reports of loss through an application E-Tracking Application for Reporting Information System.

Acknowledgement
Special thanks to Polsek Coblong Bandung which has given time in cooperation for making this application and Universitas Komputer Indonesia that has supported this research activity.

References
[1] Junianto, E., and Primaesha, Y. (2015). Perancangan Sistem Tracking Invoice Laboratorium Pada PT Sucufindo (Persero) Bandung. Jurnal Informatika, 2(2).
[2] Chusyairi, A., Rudiawan, B., and Sasongko, E. (2018). Layanan Laporan Kehilangan (E-Report) Dengan Metode Rapid Application Development. Jurnal Telematika 11(1).
[3] Mayangky, N. A., and Suharyanto, S. (2018). Perancangan Sistem Informasi Sentra Pelayanan Kepolisian Terpadu pada Polsek Citeureup Cimahi. Jurnal Sisfokom (Sistem Informasi dan
[4] A. S. Sitanggang. (2018). The Analysis Of Application Information System As E-Business Go-Baby Application Of Child Care In, 194–197.

[5] Mauluddin, S., Hasugian, L. P., and Sitanggang, A. S. (2018). Automation Lecture Scheduling Information Services through the Email Auto-Reply Application. International Journal of Advanced Computer Science and Applications, 9(12), 291-297.

[6] Sitanggang, A. S., and Sutardi, A. W. (2013). Sistem Informasi Penyewaan Rental Mobil Di Cv. surya Rental Mobil Bandung. Jurnal Teknologi dan Informasi (JATI), 3(1).

[7] Sitanggang, A. S. (2018, August). Information Systems Interest Talent in Developing System (Independent and Innovative Creative Economy) on Child with Special Needs Disabled in Bandung City. In IOP Conference Series: Materials Science and Engineering 407(1) 012133. IOP Publishing.

[8] Sujana, A. P., Sitanggang, A. S., and Maseleno, A. Application of E-Transport through Android-Based Ticketing Applications. Journal of Advanced Research in Dynamical and Control Systems, Issue, 1347-1356.

[9] C. S. Jr. (2018). A document analysis of anti-hazing policy, 13(1), 32–50.

[10] Ibrahim, R., Yen, S. Y., and Pahat, B. (2011). A Formal Model for Data Flow Diagram Rules 1.

[11] Hong, O., and Song, J. (2013). A new method of understanding learning in science centers: context diagrams of learning experiences. Visitor Studies, 16(2), 181-200.

[12] C. Andari, D. R. Wijaya, R. Budiawan, F. I. Terapan, and U. Telkom. (2015). Aplikasi Pendataan Kendaraan Hilang Berbasis Web (Studi Kasus: Polres Cimahi), 1(1), 542–546.

[13] Kamariotou, M., Kitsios, F., and Grigoroudis, E. (2018). Strategic Decision Making using Multicriteria Analysis: Information Systems Performance Evaluation in Greek SMEs. In Proceedings of the 7th International Symposium and 29th National Conference on Operational Research (pp. 184-188).