



# Development of an Intellectual Property Rights Information system at Universitas Negeri Surabaya

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**Abstract.** The management information system is described as a pyramid building where the basic layers consist of information, transaction explanations, status explanations and so on. Intellectual property rights are a way of protecting intellectual property by using existing legal instruments, namely copyrights, trademarks, patents, industrial designs, layout designs of integrated circuits, trade secrets and protection of plant varieties. The system development method in research uses the System Development Life Cycle (SDLC) method. The aims of this study are 1) to describe the process of developing an information system for Intellectual Property Rights at Universitas Negeri Surabaya; 2) determine the feasibility of the Intellectual Property Rights information system at Surabaya State University. The results of this study are 1) the process of developing an Intellectual Property Rights information system at Universitas Negeri Surabaya: a. the initial analysis stage of conducting an analysis of the needs of information system development; b. make an information system design starting from appearance, features and layout, c. System implementation, namely conducting limited trials, evaluating, revising and implementing information systems. 2) The results of the expert validation of the eligibility of the information system are declared feasible (3.,67).

**Keywords:** Expert Validation, Intellectual Property, System Information.

## 1 Introduction

An information system is a system within an organization that meets the needs of daily transaction processing, supports operations, is managerial and strategic activities of an organization and provides certain external parties with the necessary reports (1). A management information system is an integrated (integrated) human/machine system for providing information to support operations, management and decision-making functions in an organization, status and so on. The next layer consists of information sources to support daily management operations. The third layer consists of information resources to assist tactical planning and decision making for management control. The top layer consists of information resources to support planning and policy formulation at management level. Image of Management Information System components as follows.

The role of information technology in human activities at this time is so great. Information technology has become the main facilitator for business activities, contributing greatly to fundamental changes in organizational structure, operations and

management (3). Information technology plays a role in restructuring the role of humans. In this case, technology plays a role in making changes to a set of tasks or processes.

The purpose of the management information system, among others, is to provide information used in calculating the cost of services, products and other purposes desired by management; provide information used in planning, controlling, evaluating, and continuous improvement; providing information for decision making. Advances in information technology affect the field of human life including the field of intellectual property. Information technology has an important role in the service of intellectual property today. Various information systems have been created and developed to support data management activities in work units, one of which is the intellectual property center.

Functional information system components are all components related to data collection techniques, processing, delivery, storage, and presentation of information needed for the management of Carolina Niken, including:

1. Administrative and operational systems.

This system carries out routine activities, such as personnel, administration, and so on, which have predetermined procedures. This system must be continuously examined so that changes can be immediately known.

2. System management reporting system.

This system functions to create and submit periodic reports to decision makers or managers.

3. Sistem database.

This system functions as a storage place for data and information by several organizational units. The database has a tendency to develop in line with the development of the organization so that the interactions between units will increase and cause the information needed will also increase.

4. Search system.

This system functions to provide data or information needed in making decisions according to requests and in an unstructured form.

5. Data management.

This system serves as a media liaison between the components of the information system with the database and between each component of the information system

Principles of Management Information Development as follows:

- 1) The developed system is for management.
- 2) The developed system is a large capital investment.
- 3) All existing alternatives must be investigated.
- 4) The best investment must be worth it.
- 5) The developed system requires educated people.
- 6) Stages of work and tasks performed in the system development process.

- 7) The system development process does not have to be sequential.
- 8) Don't be afraid to cancel projects.
- 9) Documentation must exist for guidance in system development

A system that will be implemented in an organization will usually go through the following stages: system analysis, system design, system implementation, system management, system evaluation. In outline as follows:

#### a. System analysis

In implementing an information system, it is first necessary to do a system analysis, this is so that the system is truly applicable within a certain organizational framework. System analysis is an attempt to find specifically the things needed in a system both by system users and the scope of system work. In conducting system analysis, a system analyst must conduct general research before conducting a detailed analysis.

#### b. System Design

Design (design) is an attempt to describe, plan, sketch or arrange the elements into a unified whole. System design means integrating the system as a whole. In designing a system, a system analyst must know at least three things, namely: output, input/input file, the files needed in the initial stages of determining the conceptual design (often compared with feasibility design/gross design/high level design) are very important. , considering this will greatly affect the direction and clarity of the management information system that will be used

#### c. System Implementation

The system that has been selected either to fill in the new system or replace the old system in its application needs to be done carefully, this is related to the possibility of practical constraints that have not been thought of in the selected design model. There are several stages that need to be considered in implementing the system, including:

- 1) Trial stage
- 2) Evaluation stage
- 3) Improvement/revision stages
- 4) Stages of system implementation

#### d. System Implementation

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### e. Intellectual Property

In simple terms, intellectual property (IC) is wealth that arises or is born from human intellectual abilities. Works that arise or are born from human intellectual abilities can be in the form of works in the fields of technology, science, art and literature. These works are born or produced by human intellectual abilities through the outpouring of time, energy, thought, creativity, taste and intention<sup>(5)</sup>. Intellectual property consists of patents, copyrights, brands, industrial designs, geographical indications and trade secrets. The understanding of the types of KI is as follows<sup>(6)</sup>

## 2 Research Method

### 2.1 Development of IPR SIM with the SDLC method

The system development method in research uses the System Development Life Cycle (SDLC) method, which is a software development process model that is carried out in stages according to the existing mechanism.



**Fig. 1.** Desain SDLC.

**Planning.** The author's plan in making this application is to make it easier for auditors to assess the performance of employees and to help make calculations

**Analysis.** The analysis carried out by the author in making this system is by conducting literature studies, namely viewing and reading journals related to the application in order to get an idea for designing this application and can make improvements in data processing.

**Design.** The design carried out by the author is to design the flow of the system by making flowchart designs, use case diagrams, and activity diagrams as well as designing attractive website designs.

**Implementation.** After the design phase is complete, the authors carry out system implementation (testing) of the system created

**Maintenance.** Activities that aim to maintain the quality of system performance so that the system can work according to plan / can run well by carrying out checking activities on the system.

### 3 Results and Discussion

#### 3.1 SIMHKI Development Process

**Planning.** At this stage the researcher compiled a SIMHKI plan. The SIMHKI concept that will be developed is in the form of a Management Information System in terms of appearance, usage, and language aspects. The concept in terms of appearance, the flow of using SIMHKI is systematic, coherent, easy to use, and the buttons or symbols are clear and all function, the appearance is attractive, the writing is easy to read, the presentation is attractive. The concept from the aspect of use consists of various features that hopefully are easy to use. The concept from the aspect of language is language that is easy to understand, easy to understand, using PIEBI.

**Analysis.** At this stage the researcher conducts a needs analysis from what has become planning. Needs analysis on the display aspect in the form of good graphic quality, clarity of text color against the background, a consistent mix of themes and colors used, and easy-to-read font size and type. Analysis of needs for aspects of use in the form of easy operation of the SIM, a coherent flow of procedures, all features can be used easily and fast SIM loading. Analysis of the needs of the language aspect, namely the language used is easy to understand, uses language according to PIEBI, uses terms that are appropriate and appropriate in word fragments.

**Design.** Based on the picture above, the design for SIMHKI design features that will be made are home, copyrights, patents, brands and industrial designs. The copyright feature consists of the identity of the applicant, the type of creation, and the upload form. Patent features consist of the identity of the applicant, type of patent, and uploading forms. Brand features consist of the identity of the applicant, type of brand, and upload formular. The industrial design feature consists of applicant identity, DI type, and form upload. At this stage the researcher made the SIMHKI design as in Fig. 2.

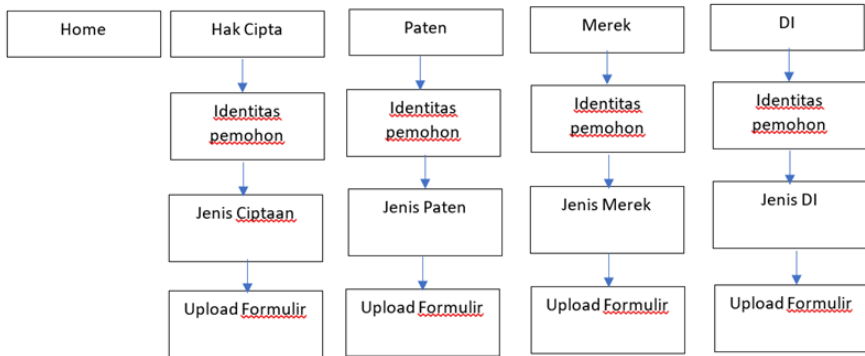


Fig. 2. Design SIMHKI.

**Implementation.** At this stage the researcher tested the SIM that had been made. SIM testing done by observation technique. SIM observed by 6 experts. Namely, consisting of 2 IT experts, 2 experts field of operation of KI applications, and 2 language experts. After getting input from researchers. Make improvements according to expert input. After being declared fit by the expert. SIM ready limited test was carried out.

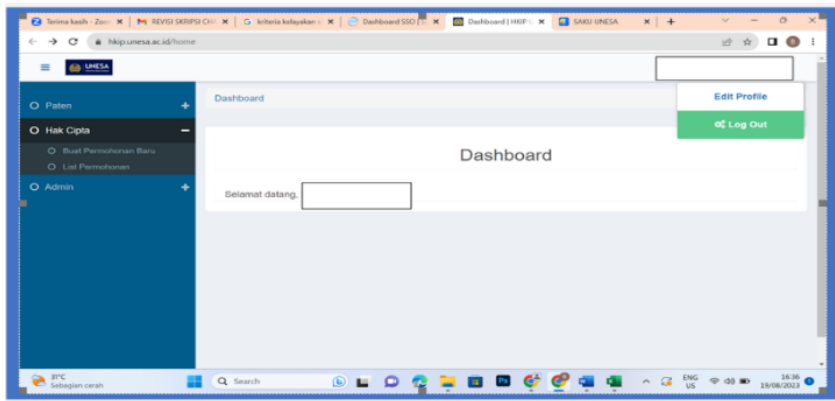


Fig. 3. SIMHKI.

**Maintenance.** At this stage the researcher coordinates with the KI team so that the SIM can still be used properly by applicants, provides a good response to each application, validates each application title.

### 3.2 SIMHKI Feasibility Results

The results of the SIMHKI feasibility observation by 6 experts consisting of 2 IT experts, 2 experts in the field of operating IP applications, and 2 language experts. SIMHKI feasibility results were analyzed using the average formula. The assessment

of the results of this feasibility validation consists of 3 aspects, namely, the appearance aspect, the information system use aspect and the language aspect. Details of the SIMHKI eligibility assessment calculation details are presented in the following table:

**Table 1.** Feasibility Results of SIMHKI

No.	Aspect	Skor $\mathcal{X}$	Category
1	Display	3,50	Good
2	Usage	3,75	Very Good
3	Language	3,75	Very Good
Total		4,67	Very Good

**Display Aspect.** The display aspect above shows that the expert's assessment of aspect 1 (graphic quality) obtains an average of 4.0 which is categorized as "very good". Aspect 2 (text color clarity) gets an average of 3.0 which is categorized as "good". Aspect 3 (the combination of themes and colors) gets an average of 3.0 which is categorized as "good". Aspect 4 (Size and font) gets an average of 4.0 which is categorized as "Very good". In all aspects of the display, it gets an average of 3.5 which is categorized as "good".

**Usage Aspect.** The display aspect above shows that the expert's assessment of aspect 1 (operating the use of a SIM) obtains an average of 4.0 which is categorized as "very good". Aspect 2 (there is a flow of procedures) gets an average of 4.0 which is categorized as "very good". Aspect 3 (All features can be used) get an average of 4.0 which is categorized as "very good". Aspect 4 (fast SIM loading) gets an average of 3.0 which is categorized as "good". In all aspects of the display, an average of 3.75 is categorized as "very good".

**Language Aspect.** The display aspect above shows that the expert's assessment of aspect 1 (easy to understand language) obtained an average of 4.0 which was categorized as "very good". Aspect 2 (Use of language in accordance with PIEBI) obtains an average of 4.0 which is categorized as "very good". Aspect 3 (appropriate use of terms) obtains an average of 3.0 which is categorized as "good". Aspect 4 (Accuracy of word hyphenation) gets an average of 4.0 which is categorized as "very good". In all aspects of the display, an average of 3.75 is categorized as "very good".

## 4 Conclusion

In this study it can be concluded that: IPR SIM can be declared fit for use with an average of all experts declared 3.67 (very good). The SIMHKI development process starting from the planning, analysis, implementation and evaluation stages can run smoothly and with results that are declared fit for use.

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