Design of Application Information Systems For Monitoring Enterprise Activities Integrated with Android Operating Systems

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Abstract
The objectives of this research is to added value function to the application (software) which has been made in previous that had reached copyright number no HKI 2-01-000007457 in year 2016. The problems that occur in this research because nowadays mostly industries want to utilize system information which is easy to use, also if possible connecting to the smart phone. The Research method in making this application is using SDLC (System Development Life Cycle) technique, that is the logical process used by developer or analyst in process of making information media. The added value provided in this application is an application system that previously used a web-based system, and now changed into an android based system which is more easily and possible use by both smart phone and smart tv. Applications that has equipped android system additionally can be connected with electronic devices that also have android operating system such as smart tv and smart phone, so enterprise can use it for information system activities, which is the functions can be able monitoring stock of goods that integrated with digital systems.

At the end of this research, a feasibility survey provided by 40 experienced respondents as the industry users that from 3 industries, such as retail industry, manufacturing industry, and restaurant industry. The result of this survey analysis conducted with the AHP (Analytical Hierarchy Process) method that found almost all industries are suitable to use this application, with 30.7% retail, manufacturing 39.2%, restaurant 30.1%. The important priority in the implementation of this application is the cost of using this application and the application performance of the industrial activities.

Keywords : Supply chain, system information, Android, AHP.

INTRODUCTION
In the era of global industrial now, the availability of stock of goods is one of the important factors for the industry to maintain the quality, quantity, and continuity of production activities. On the other hand, the industry have tends to need raw materials in fixed quantities, considering the industry has a strategic potential in the development and development of the nation's industry. Therefore, the industry must be supported by the procurement of raw materials on time, place, form, quantity and price. Thus the availability of raw materials greatly determines the implementation of the production process optimally, so that the production plan can be realized.

An integrated system is an interesting challenge in software development because its development must continue to refer to the consistency of the system, so that existing and operational sub-systems are still functioning properly as they integrate the system for and after integration. An integrated system (integrated system) is a set of processes to connect multiple computerized systems and applications (software) both physically and functionally. The integrated system will incorporate sub-system components into one system and ensure the functions of the sub-system as a single system.

Based on the problems and opportunities
comes for developing industrial supply chain applications that was made, this research have objectives to develop current applications (software) into integrate with friendly operating systems, especially simple operating system which is android system.

**EXPERIMENTAL METHOD**

This research is conducted through SDLC (System Development Life Cycle) technique with the application of industrial supply chain information system was made (No. HKI 2-01-000007457), which will then be connected to the Android operation systems. Analysis of the calculation of acceptance of this application based on the calculation of AHP value analysis (Analytical Hierarchy Process) by using 40 respondents industry users. The methodology research figure shown in below.

![Fig. 1. Methodology Research](image-url)
1. Scope Definition

Determining the scope to be developed into the system, in this case is the development of monitoring tools integrated with industrial supply chain information system of application.

2. Problem Analysis

Creating problem-solving analysis that occurs in the industry, whether causes the planning and control of raw materials is often problematic occur in excess capacity and excess.

3. Requirement Analysis

Problems that have been described then performed needs analysis in information systems, where the application programming edit needed to adjust the needs in solving the problem.

4. Logical Design

The system has been designed and then adjusted to the specification of the equipments that will be connected into the application equipments used in this research is a smart tv and smart phone.

5. Decision Analysis

The result of designing a device specification with an ERP application, connected to an integrated system so that data entered into the system will appear in the planned monitoring tool as the output of digital numbers.

6. Physical design & Integration

The design of monitoring tools is done to connect the application of supply chain information system with display equipment which is smart tv and smart phone, so that the equipment can work with computer connected. The display equipment created is a digital system.

After the programming is appropriate to the system, then connected with android studio applications, to change the application function into the android smart phone. The android system connected to system circuits resulted in the application of the supply chain information system integrated automatically with the actual conditions on the android smart phone in real time.

7. Construction Testing

Monitoring tools that have been connected with the application then tested to see the level of accuracy of automation tools to the application. In this test is expected to get 100% accuracy level (no error).

8. Installation & Delivery

The results of the integrated tools trial will be checked in final to avoid errors and damage, then formed in a more secure package, so that enterprise users can try the tool as a new tool for monitoring raw material needs. The use of the AHP (Analytical Hierarchy Process) method is used to measure the acceptability of monitoring tools made regarding the suitability of the industry that will utilize it. The results of the AHP calculation will then be used to analyze the feasibility of the monitoring system by comparison using conventional methods that have been used in the industry.

RESULTS AND DISCUSSION

This application is a repository for business applications that are integrated on Android smartphones to facilitate users when ordering goods on the warehouse. This application also makes it easy for the user, for example front-liner on the tenant-shop to simplify the work with the mobile device so that the front-liner can start ordering orders, dynamically updating the goods without
having to print new items, or the option to cancel reservations from consumers.

1. Main Menu

Main Menu in this application consists of Dashboard menu, Transactions menu, and Settings menu. Dashboard menu contains the global information required by the manager such as recapitulation of transaction amount, amount of transaction volume in Rupiah, last order number, and others. The Transaction menu is used in the following sections:

- Waiter that contains the results of the activity of filling the order goods application on the Android app, which starts from:
  a. Determine the number of place tenants to order goods
  b. Ordering food items containing the results of transaction activity of goods order selection
- Cashier containing the order recapitulation result made by Waiter on behalf of a certain tenant before proceeding to Warehousing
- Warehousing that contains warehouse layout tables and the following order in each warehouse number including the status of the order is being ordered, is being carried out the delivery process, or has finished the delivery process and continued by Waiter to deliver the order to tenant.

The Setting menu contains the number of tenants as well as the layout of the tenant number sequence and so on, which is possible from various floors. Administrators can set the layout on each floor.

2. Purchase Order menu

This menu can be accessed by Front liner / Waiter to request goods from certain tenants. In this Transaction menu will do the following steps:

1. Waiter shall first record personal data to the extent possible,
2. Reservation Code will be set automatically from system.
3. The data is still less able to be filled by the Waiter himself. The filled data are:
   a. Tenant Name
   b. Phone number
   c. E-mail
   d. Reservation Date (auto-set)
   e. Shop layout number code
   f. Maximum length of delivery

4. Based on customer's choice, Waiter will click Menu Selection to select the items available (eg Food, Fashion, or Accessories). These items can be set up at the beginning of the application.

3. Order menu

After Front Liner clicks on the Item Options, the details of the item will be accessible by Waiter to serve the request. In the goods of this Transaction, the following steps shall be taken:

1. In each item has been set the price of each item so that the user is sufficient with the wipe of the goods then the system performs data analysis based on order data items entered by the waiter and record data as well as record the number of orders and the amount of Rupiah orders
2. For the process of change then the old data will be updated with changes to the data and saved to the existing database on the computer cashier.
3. After the verification by clicking the PAY button then the screen at the cashier will show the payment items along with the details.
4. Cashier menu

The cashier contains details of the items that have been approved by the customer and have been shipped by the front liner. In this item will be written Name of Goods Details, Unit Price per Detail Goods, Order Number (QTY), And Total Price per Goods. It will also display Discount when there is a promo program, VAT tax, and Service Charge. After that will be the total performance to be paid.

For payment options there Cash and there is also External Credit-Visa. After the payment, the cashier will click Complete Order to the warehousing so that the cooks in the warehousing officer will see the order directly to be done, and can also use the printer as a medium order.

5. Warehouse menu

In this Warehouse Menu will be done the following steps:
1. After receiving the verification from the cashier, then the warehousing section will appear additional order items ordered so that the chef in the warehousing officer will see the order directly to be done.
2. The completed order result is inputted into the application system. Then the food items can be immediately transferred to the customer and if the waiter has delivered the goods to the tenant with a certain number of layouts, then the waiter will click the layout so that the table display on the screen will be DONE (completed).
3. Results of transactions that have been done synchronize process in the online data server that has been provided

Analyzing and Testing

Testing the application using AHP (Analytical Hierarchy Process) method by conducting a survey of 40 respondents who work as industry players, it is needed to determine the acceptance of applications if the application is applied in the industry.
Input data is inserted that has a purpose of "Implementation of industrial supply chain software", with 3 attributes that is environment of this application can be used not damage environment, flexibility is this application can be used not only computer or multi user, image performance is the appearance of software, realibility is real time, cost is the price of application, availability is application is easy to get. The attributes are elaborated with three alternative companies: property A (retail industry), property B (manufacturing industry), property C (restaurant). The result of the test by AHP method with the survey based on the questionnaire then obtained the following results.

In the graphic above, it is known that the industry is suitable to use this application obtained results, the retail industry 30.7%, manufacturing industry 39.2%, restaurant 32.1%. This indicates that the three industries are suitable for using program applications that have been created with system android system integration and display tools.

Based on testing of priority attribute, it is found that the priority of application of this program made when used by various industries among them the highest value is cost (cost) of 25.7% and performance (performance) of 24.7%.

**CONCLUSION**

The physical form of integrated monitoring tool is an electronic display device with android operating system connected to the smart tv and smart phone. Performance of work system between smart tv and smart phone device can be integrated in real time by using wireless function and FTP function (file transfer protocol). The results of the survey of acceptance of applications in the industry, 39.2% of the application is suitable for use in manufacturing industries. Priority factors required in this program are cost and systems performance.
REFERENCES


