Development of Integrated Information System for Travel Bureau Company

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Abstract. Related to the effectiveness of decision-making by the management of travel bureau company, especially by managers, information serves frequent delays or incomplete. Although already computer-assisted, the existing application-based is used only handle one particular activity only, not integrated. This research is intended to produce an integrated information system that handles the overall operational activities of the company. By applying the object-oriented system development approach, the system is built with Visual Basic .Net programming language and MySQL database package. The result is a system that consists of 4 (four) separated program packages, including Reservation System, AR System, AP System and Accounting System. Based on the output, we can conclude that this system is able to produce integrated information that related to the problem of reservation, operational and financial those produce up-to-date information in order to support operational activities and decision-making process by related parties.

1. Introduction
The operational activities of a travel bureau company in running its business is quite complex. In addition to having to face many people who must be served as customers, the company also involves many parties. The first parties involved are the agents from abroad who send their guests to be served. The agent will send a reservation for guests to be served with a number of services in the form of tour packages. Tours package are a packaging of various products, such as hotels, restaurants, transport and so on, which are generally not owned by the company. These products are obtained from various suppliers. During the guest service, the company also hires tour guides, who are not corporate employees either.

There are a number of sections involved in the company's operations. The marketing department begin with prepares the tour package and offers it to the agents. Then the reservation section will receive and prepare tour package reservation from the agent. The preparation includes coordinating with suppliers related to the products ordered. When the reservation is final, then the next operational section is assigned to handle the guests, starting from the pick-up time, during service and until the guests return to their country. Related to this guest service, will arise income or expense. All matters relating to these financial transactions are handled by the finance department. To further facilitate the management, then this financial section will also be divided into accounts receivable, accounts payable and general.

The rapid development of information technology, especially the Internet, was very impact on the existence of the business includes travel bureau company [1]. Many travel bureau companies that had been mushroomed, it turns out that many who disappeared and stay nameplate only. But on the other
hand, it turns out there are also many people who open new businesses such as travel bureau, by utilizing the existence of information technology [2].

In the midst of increasingly fierce business competition and the easier and faster people obtain information, then every company must prepare himself well. The main thing to be prepared is the company's ability to provide accurate information quickly. Information becomes something important, in addition to meeting customer needs, is also needed to support the decision-making process. Accurate and timely information will improve the quality of the decision itself. The availability of the dimensions of information technology systems will improve the utilization of modern information systems to facilitate administrative procedures, increase efficiency among employees, improve output, and save time and money [3]. Considering the average returns the results indicate that firms which use Accounting Information Systems (AIS) for the whole of their management obtain a higher, more positive figure with regard to the other groups of firms which show a negative average [4].

In recent years, “Big Data” has attracted increasing attention. In “Big Data” era, financial work which is dominated by transaction, business record, business accounting and predictions may spring to life. The analysis of "Big Data" associated with Accounting Data Processing, Comprehensive Budget Management, and Management Accounting through its influence on ideas, functions, modes, and methods of financial management, concludes that the challenge for the company is how to foster strength and avoid weaknesses so that the company remains invincible in the era of "Big Data" [5].

To improve the ability to provide accurate and fast information to support decision-making processes and other needs, a number of companies have been computerized in their business activities [6]. Various information systems have been developed to manage data and processes that provide information to those who need it. But unfortunately, many of the existing information systems are only able to provide information partially, only in certain areas. Although already built several information systems to meet various information needs, still every information system is running its own way. As a result, changes that occur in an information system, will not affect other information systems, so that the resulting information becomes not up to date in real time.

This research will attempt to solve the existing problems related to the lack of data between existing information systems, as they are built separately. This research is expected to be able to produce an integrated information system, integrated between the modules of the system with each other. Each system module is an information system that handles a particular problem within the company. While each of these system modules remains separate from each other, they are interconnected. Changes that occur in a module will be able to impact on other system modules. This can happen because they are built in an integrated and integrated with others. The result is an information system capable of producing up to date information in real time [7].

2. Methodology
The development of this system is done by applying object oriented system development approach, with emphasis on 3 (three) main stages namely OOA, OOD and OOP. The OOA (object-oriented analysis) is a process that begins with an understanding of the manner in which the system will be used by people, if the system is human-interactive. The objective of OOA is to develop a series of models that describe computer software as it works to satisfy a set of customer-defined requirements [8]. The analysis emphasizes on investigation of the problem and requirements, rather than a solution [9].

The OOD (object-oriented design) transform the analysis model created using object-oriented analysis into a design model that serves as a blueprint for software construction. Unlike conventional software design method, OOD results in a design that achieves a number of different levels of modularity. Major system component are organized into system-level modules called subsystem. Data and the operation that manipulate the data are encapsulated into objects [8]. Design emphasizes a conceptual solution (in software and hardware) that fulfill the requirements, rather than its implementation [9].

Object-oriented programming (OOP) is a programming paradigm based on the concept of objects, which may contain data, in the form of fields, often known as attributes; and code, in the form of procedures, often known as methods. A feature of objects is that an object's procedures can access and
often modify the data fields of the object with which they are associated (objects have a notion of this or self). In OOP, computer programs are designed by making them out of objects that interact with one another [10].

3. Results and discussion

3.1 Analysis of the System
Travel bureau company is a company that sell tours package products, either directly to customers (guests) or through other travel agents, generally residing abroad. This tour package is the composition of various products obtained from various suppliers, such as tours, hotels, restaurants, transport and others, according to the request of guests. If the tour package is sold, then the reservation section will handle the ordering of these products to the related supplier. At the same time will be prepared the itinerary (schedule of tour activity) and tour guide who escort guests, if needed.

In general, the company has a number of staff assigned to handle business operations. The staff is divided into three parts, namely the reservation, operational and accounting. The reservation staff is assigned to sale package/tour products and to handle all administration relate to reservation until ready to be handled by the operations section. The operational staff is assigned to implement the reservation that has been confirmed. Tasks include pick-up on arrival, transfer in / out and so on. All matters about financing and payment of customer service activities handled by the accounting staff [11].

Upon arrival, guests, especially group guests, are handled entirely by the assigned guide. Guest handling is tailored to the already prepared itinerary. During this guest handling, the guide is possible to do optional tour sales, additional tour packages outside of the existing itinerary. For the additional price of this tour, it is entirely left to the guide with a benchmark price from the office. Cash payment is also handled by the guide and will be deposited to the cashier at the office. For this matter, the guide will be given a commission [12].

After the guests return to his / her place of origin, all billing affairs shall be borne by the agent who sends the guest. The company will send the invoice to the agent in question. This invoice will be recorded as accounts receivable from the relevant guest agent [13]. All billing affairs of this receivable will be fully handled by the receivable division (AR), under coordination with the Accounting Section.

Guests who handled by the agent does not have to pay the product bought. The system will record the bill as receivables to an agent. The agent would pay a month later, according to the contract. All suppliers who have provided services or products on handling of the guest will send invoices to the office for the sale of products / services on behalf of the concerned guest [14]. This invoice is then recognized as a trade payable to the supplier. All business registration and payment of this trade payable will be fully handled by the account payable division (AP) under coordination with the Accounting Section.

![Integrated Information System](image)

**Figure 1.** The Program Package Relationship in the Integrated Information System
Based on the above description of the activities, then the needs of the system in this travel agency company is an integrated system, which can handle 4 (four) main activities of the company, namely reservation, accounts receivable, accounts payable, and financial reporting. Each of these activities will be handled by a separate program package, but internally (data) these four programs are integrated with each other. Figure 1 shows the linkage of all four existing program packages.

Reservation System program package is a program package used for recording and managing reservation data of guests. The program package is also equipped with Service Handling, Creating Invoice, and Creating Profit Loss facilities for selected reservation data. Service handling facilities are used for the management of service products provided for the guests concerned and the operational preparation and tour activity of guests. Inviting facility invoices are used to issue invoices on behalf of guests related to the service packs they order. The facility of creating profit loss is a facility to know the amount of gross profit/loss from certain guest reservation data.

AR System (Account Receivable System) program package is a program package specifically used to handle accounts receivable company to agents who have sent their guests [15]. As previously described, all guest bills on tour packages purchased are charged or incurred by the agent who sent them. Registration of billing to the agent of the guest who sent it can be done in the package of Reservation System program or AR System package. Specifically, this bill data is managed in this system.

AP System (Account Payable System) program package is a program package specifically designed to handle the company's account payable problem [15]. Company's account payable occurs as a result of a company purchasing a product from a supplier provided to a guest for the service purchased in the reservation. Purchase of products is done on credit, and usually will be billed payment through the invoice delivery to the company after the guests finished enjoying the product service. The invoice's invoice from the supplier is then recorded as an account payable by the company.

Accounting System program package is a package of programs that are specifically used to handle the preparation of corporate financial statements. As a package of programs that deal with corporate financial reporting, indirectly this program package is also associated with AR System and AP System which specifically deals with the problem of accounts receivable and payable, as previously described.

3.2 Design of the System

After successfully investigating the existing problems, then we can do the next stage in system development, which is the design stage. At this stage we create a blueprint of the built system. Blueprint in the form of modules of the system can be determined by creating a class diagram of the system. A class is the description of a concept from the application domain or the application solution. Classes are the center around which the class view is organized; other elements are owned by or attached to classes [16].

Classes that belong to this system can be seen in Figure 2. The whole class can be grouped into 3 (three) groups, namely Boundary class, a class that limits the interaction between systems with other worlds, Control class, which is the class that controls other class calls, which has rules of the business, and Entity class, a class that stores information that may later be stored on storage media [17].

The control class is FrmMainMenu which will control the entire calling of the existing class. FrmMainMenu will be divided into 4 (four), adjusted to the number of existing program packages, frmRSVSystem for the Reservation System program package, frmAPSystem for Account Payable System, frmARSSystem for Account Receivable System and frmAccountingSystem for Accounting System.

Entity class includes Employee which is used to record employee data and at the same time as user of system, Agent for agent data that sending guest, Supplier for supplier data providing service product, Reservation for reservation tour data, Guide for tour guide data, Account for account data company, and Journal for financial transaction data.

Figure 2 shows that the Employee class, which is a representation of the system user, has 2 (two) sub-classes: Manager and Admin, representing each of the other levels of the user. The user of this system is divided into 3 (three) levels adjusted to the scope of what the user can do in the existing...
program package. Users with Manager Level, in addition to perform activities as well as users generally, can also perform the editing of existing data. While for Admin level users, in addition to doing data editing, can also perform data deletion. Only Admin users have data deletion authority.

Figure 2. Class Diagram of System

Classes other than those already categorized into the Control and Entity classes are the Boundary class. This Boundary class is a class that represents the various functions that any programming package can perform. The interaction and interrelationships between classes and functions performed by each class can be seen in the class diagram in Figure 2.

3.3 Implementation of the System

Based on the system design obtained, it will be implemented into a program with the OOP approach. The programming language used is MS. Visual Basic .Net with MySQL as the database package. The program generated consists of 4 (four) program packages namely Reservation System, AR System, AP System and Accounting System. In addition to having a special menu in accordance with its function, the four program packages have the same main menu that is Login to enter the system, Master Data to manage the master data, Creating Report to generate reports and Exit to exit the system, as shown in the system design in Figure 2. Reservation System program packages will have a Reservation menu that is used to handle the reservation of the tour package from the guests. AR and AP System program packages will have a Recording menu used to record invoice and payment, related to account receivable on Agent and account payable to Supplier. While the Accounting System program package will have a Book Keeping menu that is used for historical journal recording and book closing on cashier of account payable and accounts receivable.

The four program packages, though created separately, are actually linked to each other. This is possible because they use the same data. The data used is the data in the category Entity class, i.e. data
Employee, Agent, Supplier, Reservation, Guide, Account and Journal. Thus, the reports that will be generated from each program package will be up to date and integrated with each other.

4. Conclusion
This study resulted in a system consisting of 4 (four) program packages that will overall handle the main activities of travel bureau companies, namely reservation management, account receivables handling, account payable handling and corporate financial management. Although made separately, program packages are integrated with each other through the use of the same data. Changes made to one of the program packages will impact on other program packages. The resulting report will be up to date and integrated.

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