Accounting Information Systems for A Distribution Company

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Abstract— **A distribution company with consigned goods needs to record their transactions. They need to view a flexible consignment report, value-added tax (VAT) excluded price, and pricing based on first in first out (FIFO) method. Based on this background, a structural accounting information system is designed to meet the company's requirements. The system was build using PHP language and MySQL database.**

The results obtained from the system are master recording for suppliers, customers, salespersons, and goods data. Transactions include purchases, purchase returns, sales, sales returns, and consignment. All transactions are integrated with inventory stock card and the journal. This software also generates financial statement such as income statement, owner's equity statement, and balance sheet.

Keywords-accounting information system; financial statement; income statement; balance sheet

I. INTRODUCTION

A distribution company receives their goods from consignment process. The goods are sent in larger units, e.g. boxes. If customers want to buy goods in smaller unit, the company will buy one box from supplier then sell some pieces to customer. The other goods which were not sold will be the company's inventory. If there is a tender, the company may provide custom goods based on customer's request.

In doing their business process, all transactions are already recorded, but the consignment process is not flexible. One of the examples is the recording of sold goods can only be seen monthly, e.g. the company sold 3 boxes of goods in the first week of June, then they sold another 2 boxes in the second week, it can only be seen as 5 boxes sold in a month. Because of the weekly payment method, the company needs to view the sales weekly. Other problems are the value-added tax (VAT) didn't show on payment and price differences between transfer-in and transfer-out process.

II. THEORETICAL FOUNDATIONS

A. Accounting

Accounting is an information system, which measures business activities, processes data into reports, and communicates results to decision makers [5].

1) Charts of Accounts

A list of the accounts in the ledger is called a chart of accounts (COA). The accounts are normally listed in the order in which they appear in the financial statements [1]. Organizations use COA to list all of their accounts and account numbers.

2) Financial Statements

Companies prepare four financial statements from the summarized accounting data [3]:

- An income statement presents the revenues and expenses and resulting net income or net loss for a specific period of time.

- An owner's equity statement summarizes the changes in owner's equity for a specific period of time.

- A balance sheet reports the assets, liabilities, and owner's equity at a specific date.

- A statement of cash flows summarizes information about the cash inflows and outflows for a specific period of time.

B. Accounting Information Systems

Accounting information systems (AIS) collects, records, stores, and processes accounting and other data to produce information for decision makers [4]. There are six components of an AIS:

- The people who use the system

- The procedures and instructions used to collect, process, and store data

- The data about the organization and its business activities

- The software used to process the data

- The information technology infrastructure, including the computers, peripheral devices, and network communications devices used in the AIS

- The internal controls and security measures that safeguard AIS data

These six components enable an AIS to fulfill three important business functions:

- Collect and store data about organizational activities, resources, and personnel.

- Transform data into information so management can plan, execute, control, and evaluate activities, resources, and personnel.

- Provide adequate controls to safeguard the organization's assets and data.

III. SYSTEMS ANALYSIS

A. Business Process Analysis

1) Consignment Process

Supplier will send goods weekly with memo listing each goods sent and the amount. Warehouse staffs will check the items received then store them in the warehouse.

2) Sales Process

Customers will order goods through the salesman who visit them regularly. The salesman will make a sales order which will be given to the sales counter staff. Sales counter staff will check the amount of inventories. If it is not enough, the company will order some goods to the supplier first. If it is enough, the sales counter staff will check the customer's credit limit. If the credit limit is not maxed, the sales counter staff will make the sales invoice and delivery note. Otherwise, the sales counter staff needs to ask for approval from the sales manager. The delivery note will be given to the warehouse staff who will pack and deliver the goods to the customer. Customer may pay with cash or credit. Due date for credit payment is 30 days, 45 days, or 60 days.

B. Needs Analysis

After analyzing the old systems and the problems, parts of the systems that need to be improved are:

- Customizable consignment report that can be viewed based on specific time period, so the company can view the report either weekly or monthly

- Systems which show goods price without VAT and the total amount of VAT, because the existing systems only display VAT inclusive price.

- Systems which adjust purchase price, because there might be a difference on transfer-in and transfer-out price if there is a price change mid-period.

IV. SYSTEMS DESIGN

A. Data Flow Diagram (DFD)

A data flow diagram (DFD) graphically describes the flow of data within an organization. The highest-level DFD is referred to as a context diagram because it provides the reader with a summary-level view of a system [4]. In accounting information systems for a distribution company there are 3 external entities: owner, supplier, and customer. Owner is the party who will receive reports generated by the system. Supplier is the party who sell or provide goods for the company. Customer is the party who buy goods from the company. Context diagram for this system is shown in Figure 1.
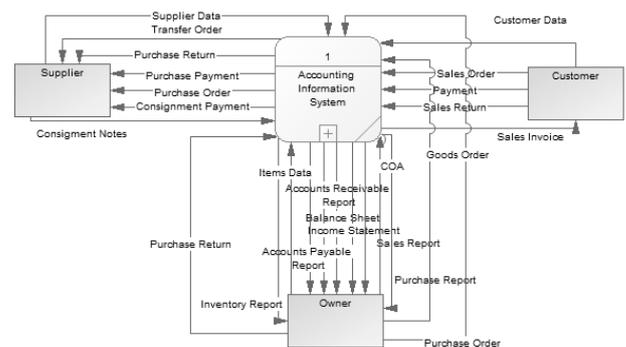

Figure 1. Context diagram

B. Entity Relationship Diagram (ERD)

An entity-relationship diagram (ERD) is a graphical representation of an entity-relationship model (E-R model) which is a detailed, logical representation of the data for an organization or for a business area [2].

V. IMPLEMENTATION

A. Purchase Order

Purchase order process is the process of recording order request for the supplier. In purchase order form, user can input data of goods the company want to purchase.

B. Purchase

In purchase form, user can choose a purchase order which is already made. After choosing the purchase order, list of goods from that order will be added to the purchase detail, which is shown in Figure 2. After purchase data is added, data will be added to inventory stock card and posted to journal as well.

Figure 2.   Purchase form

C.   Consignment Goods Received

In consignment goods received form, user can input data of goods received from supplier, which is shown in Figure 3. Data will also be added to inventory stock card and posted to journal.

Figure 3.   Consignment goods received form

D.   Consignment List

Consignment list shows detail of each consignment transaction, which is shown in Figure 4.

Figure 4.   Consignment list

E.   Sales Order

Sales order process is the process of recording order request from the customer. In sales order form, user can input data of goods the customer requested.

F.   Sales

In sales form, user can choose a sales order which is already made. After choosing the sales order, list of goods from that order will be added to the sales detail, which is shown in Figure 5. After sales data is added, data will be added to inventory stock card and posted to journal as well.

Figure 5.   Sales form

G.   Account Receivable Payment

Data for account receivable payment can be recorded using account receivable payment form, which is shown in Figure 6.

Figure 6.   Account receivable payment form

H.   Reporting

1)   Sales and Purchase Reports
This software provides sales and purchase reports so the owner can look at the summary of sales or purchase transactions in a specific period.

2)   Inventory Report
This software provides inventory report which contains the amount of each item and total amount of all items.

3)   Account Payable and Account Receivable Reports

Account payable and account receivable reports contain data of all debts with the due dates.

4) General Ledger

A general ledger contains all accounts with their balances, as shown in Figure 7.

Figure 7. General ledger

5) Trial Balance

A trial balance is a list of accounts and their balances in a specific period, as shown in Figure 8.

Kode Akun	Nama Akun	Debit	Kredit
	TRIAL BALANCE		
	JULY 31, 2015		
1-1110	PETTY CASH	504,272,000.00	0.00
1-1120	BANK	972,573,000.00	0.00
1-1210	ACCOUNTS RECEIVABLE	5,105,000.00	0.00
1-1301	INVENTORY	59,990,000.00	0.00
2-1101	ACCOUNTS PAYABLE	0.00	39,368,000.00
2-1140	CONSIGMENT PAYABLE	0.00	13,436,000.00
3-1000	OWNER'S EQUITY	0.00	1,500,000,000.00
4-1100	SALES	0.00	15,152,000.00
5-1100	COST OF GOODS SOLD	12,116,000.00	0.00
6-1100	UTILITIES EXPENSES	1,900,000.00	0.00
6-3001	SALARIES	12,000,000.00	0.00
	Total:	1,567,956,000.00	1,567,956,000.00

Figure 8. Trial balance

6) Income Statement

The income statement reports the revenues and expenses for a specific period of time, as shown in Figure 9. Segmented income statement based on location is shown in Figure 10.

Figure 9. Income statement

	GENERAL	SURABAYA	BANJARMASIN	TOTAL
SEGMENTED INCOME STATEMENT				
FOR THE MONTH ENDED JULY 31, 2015				
REVENUES				
SALES REVENUE				
SALES		13,482,000.00	1,670,000.00	15,152,
TOTAL OF SALES REVENUE	0.00	13,482,000.00	1,670,000.00	15,152,
TOTAL OF REVENUES	0.00	13,482,000.00	1,670,000.00	15,152,
COGS				
COGS				
COST OF GOODS SOLD		10,666,000.00	1,450,000.00	12,116,
TOTAL OF COGS	0.00	10,666,000.00	1,450,000.00	12,116,
TOTAL OF COGS	0.00	10,666,000.00	1,450,000.00	12,116,
EXPENSES				
GENERAL EXPENSES				
UTILITIES EXPENSES	1,900,000.00			1,900,
TOTAL OF GENERAL EXPENSES	1,900,000.00	0.00	0.00	1,900,
SALARIES AND WAGES EXPENSES				
SALARIES	12,000,000.00			12,000,
TOTAL OF SALARIES AND WAGES EXPENSE	12,000,000.00	0.00	0.00	12,000,
TOTAL BIAYA	13,900,000.00	0.00	0.00	13,900,
NET INCOME / LOSS:	-13,900,000.00	2,816,000.00	220,000.00	-10,864,

Figure 10. Segmented income statement

7) Owner's Equity Statement

The owner's equity statement reports the changes in owner's equity for a specific period of time, as shown in Figure 11.

OWNER'S EQUITY STATEMENT	
FOR THE MONTH ENDED JULY 31, 2015	
OWNER'S CAPITAL, JULY 1	1,500,000,000.00
NET INCOME	-10,864,000.00
INVESTMENTS	0.00
DRAWINGS	0.00
OWNER'S CAPITAL, JULY 31	1,489,136,000.00

Figure 11. Owner's equity statement

8) Balance Sheet

Balance sheet reports the assets, liabilities, and owner's equity at specific date, as shown in Figure 12.

Figure 12. Balance Sheet

VI. CONCLUSION

- The system fits the distribution company's system requirement.

Figure: Income Statement (Figure 9)

	INCOME STATEMENT	
	FOR THE MONTH ENDED JULY 31, 2015	
REVENUES		
	SALES REVENUE	
	SALES	15,152,000.00
	TOTAL OF SALES REVENUE	15,152,000.00
TOTAL OF REVENUES		15,152,000.00
COGS		
	COGS	
	COST OF GOODS SOLD	12,116,000.00
	TOTAL OF COGS	12,116,000.00
TOTAL OF COGS		12,116,000.00
EXPENSES		
	GENERAL EXPENSES	
	UTILITIES EXPENSES	1,900,000.00
	TOTAL OF GENERAL EXPENSES	1,900,000.00
	SALARIES AND WAGES EXPENSES	
	SALARIES	12,000,000.00
	TOTAL OF SALARIES AND WAGES EXPENSE	12,000,000.00
TOTAL BIAYA		13,900,000.00
	NET INCOME / LOSS:	-10,864,000.00

- All transactions are already integrated with the inventory stock card and journal.

- The software can provide reliable financial statements, including income statement, balance sheet, and owner's equity statement.

- Based on the questionnaire, 87,5% user thought that in general this software is good.

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