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### Applying Accounting Information System Theory on Computers in the Payment Cycle

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#### Abstract

The accounting information system is divided into three major subsystems: the transaction processing system (TPS), the general ledger/financial reporting system (GL/FRS), and the management reporting system (MRS). The payment cycle is a subcycle of an accounting information system's transaction processing cycle. The study systematized accounting information system theory, accounting information systems in the computerized billing cycle, including System Flowcharts to depict the cycle and internal control activities to evaluate the cycle. The study evaluated

and documented the accounting information system throughout the payment cycle at Duc Thanh Packaging and Trading Production Co., Ltd., evaluating the system's benefits and limits. The study proposes solutions to complete the system according to the realities of the Duc Thanh company, such as solutions for task division between the liabilities accounting department and the payment accounting department, as well as solutions for independent verification between the payment accounting department and the bank.

**Keywords:** Accounting Information Systems, Restructuring, Automation, Internal Controls, Payment Cycle on a Computer

#### 1. Theoretical Basis

##### Accounting Information Systems and Systems

A system is a collection of two or more parts that interact with each other to accomplish a common goal. A system consists of many interconnected subcomponents to accomplish the same purpose. The three basic components of the system are Inputs, Processing, and Outputs. An information system is a set of legitimate procedures for collecting data, processing it into information, and transferring it to users. Transactions are the system's input data. The transactions are an event that affects the organization and is processed as a unit of work by the information system. The accounting information system that handles financial and non-financial transactions directly impacts the processing of financial transactions. The accounting information system consists of three main subsystems: By transforming economic events into financial transactions, the transaction processing system serves as the functional heart of the overall information system. Record financial transactions in accounting books and provide staff with the financial information to support their everyday tasks. The accounting books and financial statements system contains the accounting books and financial statements prepared by regulations. The accounting books and financial statements system contains the accounting books and financial statements prepared by regulations. The management reporting system provides for management reports that are not legally required but are necessary for the decision-making process. The accounting information system collects data regarding transactions that are processed by the accounting information system, performs data processing, and offers information to users. At the same time, managers have an overall picture of the system through the information system, allowing them to develop a more effective internal control system.

##### *Descriptor for a Computerized Accounting Information System*

System flowcharts are used while businesses use computer system software. The system flowchart depicts the system's input data, transaction files, original records, and output reports. It also describes the system's media, such as magnetic tapes, magnetic disks, and end devices. System flowcharts are used to describe the interactions between a computer system's primary pieces-input data, programs, and output products. In practice, when organizations employ computer system software in some activities, some parts, but some activities, some parts still have manual human activities, there is a combination of document flowcharts and system flowcharts. As a result, the majority of system flowcharts continue to include document flowchart

operations.

**Billing Cycle on the Desktop**

Payment activities occur on a regular basis in the organization. Money transfers include cash transfers and bank deposits. However, due to tax rules and security concerns, cash payment transactions are typically limited to rare and modest transactions. Bank deposits are most commonly used for large-value transactions. The majority of transactions in the firm involve bank deposits. As a result, the study concentrated on the payment cycle with bank deposits.

A computerized money payment cycle is a payment cycle that includes data lookup, document preparation and bookkeeping, and accounting report production. The computerized money payment cycle depicted in Figure 1 is carried out by three departments: data processing, liabilities

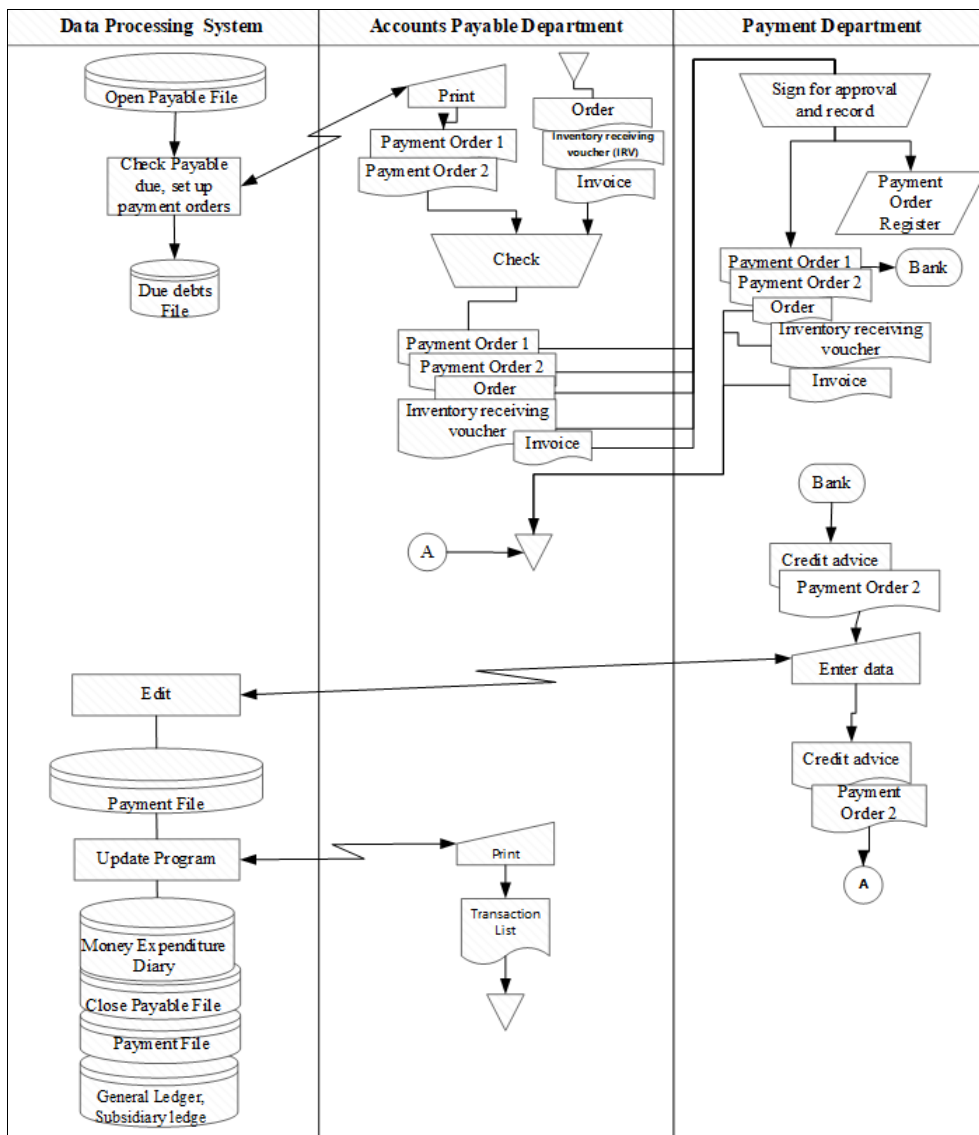
accounting, and money accounting.

*Data Processing System:* Every day, computer software discovers debts owed and produces files of liabilities owed.

*Accounts Payable Department:* Accounts payable accesses the computer system to generate an expenditure authorization and then reconciles the payment authorization with the seller's liabilities record. The documents should then be sent to the payment department.

*Payment Department:* The payment department checks, signs, and approves expenditure authorizations before entering them into the register. The expenditure authorization is then transmitted to the bank, and other documents are provided to the department. When the accountant receives the payment authorization from the bank, he or she enters it into the computer system.

*Data Processing System:* The computer department updates the program to ledger files, detail books, etc.



Bui Thi Ngoc, Tran Thi Du (2020) [1]

**Fig 1:** A computerized payment cycle for bank deposits

Depending on the degree of automation of the computer system, individual system components can be discarded, a process known as system refactoring. If the money payment system is automated at a higher step. The computer system then generates the payment authorization automatically, the

payment authorization is automatically connected to the bank, and the payment process is totally automated; the human role is only to control the computer's functioning. The computer creates reports and activity listings for control.

### **Internal Computer Control of the Payment Cycle**

Internal control of the computer payment cycle is implemented using six internal control operations. Manual payment cycle controls differ from desktop payment cycle controls.

*Transaction Authorization:* The payment cycle is still active on the computer, the authorization to approve the payable debt is assigned to the liabilities department, the activity of making an expenditure authorization is assigned to the money accountant, and the money accountant is assigned to record the payment operation into the computer system. In addition, the computer system will generate a list of transactions made and send it to the accounting department for liabilities. The liabilities accounting department monitors the computer system's operation by reviewing transaction listings. All errors of the computer system should be detected promptly.

*Segregation of Duties:* The computerized billing method eliminates the distinction between the general and detailed ledgers. Because the number of employees and departments involved in the cycle is oriented toward streamlining the apparatus, the more automated the computer system is, the less task division there is. To avoid having two incompatible operations performed by the same department, the task of determining the liabilities to be paid and the task of debt payment are performed by two separate departments, accounting for liabilities and accounting for money.

*Supervision:* Monitoring activities in the computer payment cycle include monitoring the computer system's functionality and the payment process to ensure that the correct process is followed. Monitoring becomes increasingly important when a computer system becomes more automated, as automation diminishes the system's task division functions.

*Accounting Records:* The voucher system, and accounting books in the payment cycle on computers are largely carried out by computer systems. Computer systems make bookkeeping easier and faster, but data storage protocols are essential to ensure data can be recovered and audited.

*Access Control:* Access control is critical in the computer payment cycle because access to computer systems can lead to theft, data destruction, and the use of payment credentials to make invalid payment transactions. As a result, access to computer systems must be restricted by permitting specified personnel and departments to access specific modules. At the same time, there must be anti-virus systems, preventing unauthorized access to computer systems to ensure data safety. It is vital to entrust competent individuals with the preservation, usage, and storage of expenditure permission documents in order to avoid document theft or destruction.

*Independent Verification:* Independent verification on a computer in the payment cycle has lost verification between the general ledger and the detail book. However, to ensure that payment operations are legal, the computer system will produce reports or lists of transactions conducted in order to verify the accuracy of transactions and detect computer system faults as soon as possible. An important verification of the computer-based payment system is that the reconciliation between the bank sub-book and the computer-based ledger must be consistent, and any discrepancies should be handled promptly.

### **2. Research Methodology**

*Data collection methods:* The study was conducted from two main sources, primary and secondary data sources. The author researches articles, theses, textbooks, and documents in order to organize accounting information system theory in the computer payment cycle. On the computers of Duc Thanh Packaging and Trading Production Co., Ltd., research is being conducted to conduct surveys, examine the operation process of the payment cycle, and interview departments and individuals associated with the payment cycle.

*Methods of data analysis:* To examine the existing condition and give ideas to enhance the accounting information system in the payment cycle on computers at Duc Thanh Packaging and Trading Production Co., Ltd., the study employs survey, descriptive statistics, comparison, analysis, and synthesis methods.

### **3. Current Situation and Assessment of the Current Situation**

#### ***Current Status of the Payment Cycle of Bank Deposits on Computers at Duc Thanh Company***

Payment to sellers by bank deposit can be accomplished via hard copy payment mandate or payment via Internet banking. The difference between payment via bank-by-payment authorization and payment by internet banking is that with payment-by-payment authorization, the enterprise establishes a payment authorization and sends it to the bank, while with payment by internet banking, the enterprise will make a payment order on the computer network and sign with a password through a bank message sent to or use the token sent by bank provided. At Duc Thanh Company, payment is made via bank using online banking, with one-layer security supplied by the director approving payment using the bank's token. The following departments handle the process of paying bank deposits on a computer: data processing, liabilities accounting, money accounting, chief accountant, and director.

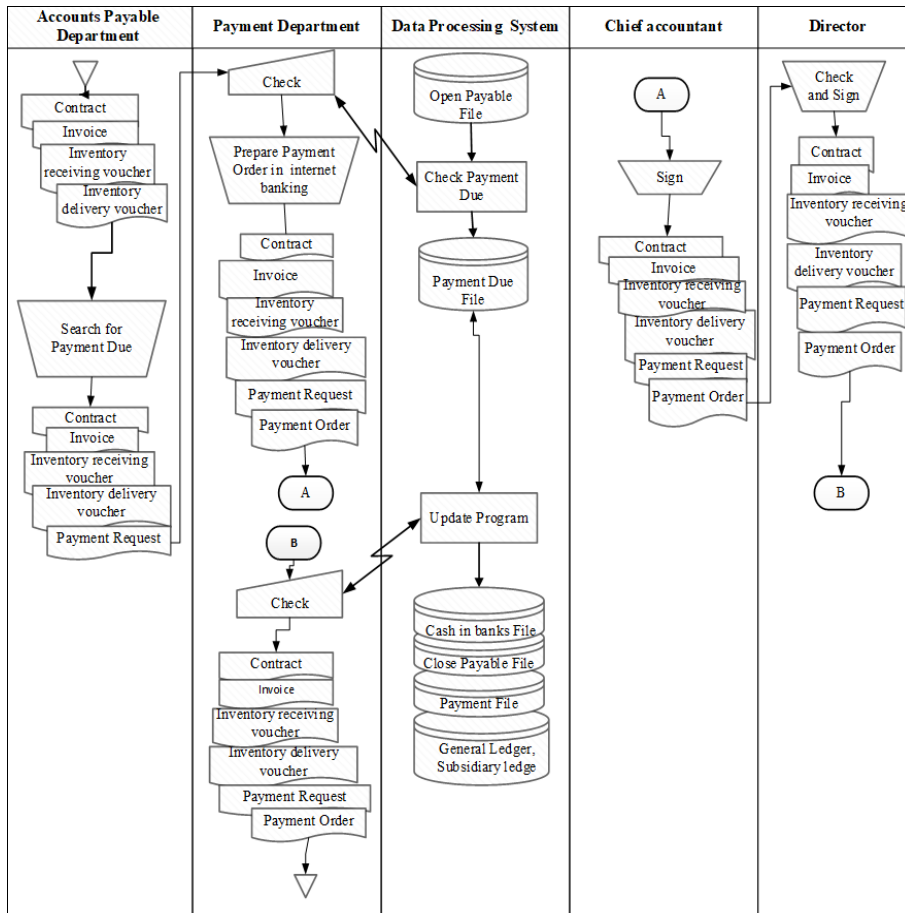


Fig 2: Flowchart of the payment cycle by bank deposit on computers at Duc Thanh Company

**Accounts Payable Department:** The liabilities accounting department reviews customer liabilities data on a regular basis and compares it to the original set of papers (invoices, warehouse receipts, contracts, purchase orders...) to identify the outstanding debts that must be paid. For debts to be paid, the liabilities accounting department sends a payment request with the original set of documents to the payment accountant.

**Payment Department: Step 1:** After receiving the payment offer and the original set of documents, the payment accountant accesses the computer system to check the debts that must be paid. Payment orders will be placed through online banking by the payment accounting department. Then, mail the set of documents to the chief accountant, including a printed copy of the payment order from the Internet system.

**Chief Accountant:** The chief accountant reviews the paperwork, signs it for approval, and then forwards it to the Director for signature.

**Director:** The director signs the payment and uses the token to approve it on the Internet banking system before sending all documents to the money accountant.

**Payment Department-Step 2:** The payment accountant receives paperwork and records payment transactions into accounting software. The software automatically uploads bank deposit information, liabilities detail books, and related account ledgers. All documentation for liabilities is returned to the payment accountant for storage.

**Data Processing System:** The data processing department is used to look up liabilities data, which is updated into the software by the payment accounting department, the program is processed, and the required files are created.

**On the computer, Evaluate the Present Status of the Accounting Information System in the Payment Cycle**

There are the following benefits from a study on the current status of the accounting information system in the payment cycle on computers at Duc Thanh company:

**About Transaction Authorization Activities:** Each employee or department performs functions within the scope of delegated duties. The accounting apparatus has been organized by many staff departments to meet the needs of use at the company. Each employee is authorized specific tasks to ensure the accounting apparatus works to meet the needs of collection, processing, and provision of business information.

**About Access Control Operations:** All companies have access control activities. Companies set up security right at the gate to prevent unwanted access. Only individuals on duty are permitted to access the company. The computer system for the company is housed in a private office area. Computer systems are only accessible to office staff. Users' passwords are immediately set on work on computers. The payment accountant and the preservation director are in charge of the USB that confirms the Internet banking transaction.

**About Bookkeeping:** The voucher system and accounting books for the company have been properly deployed. The computer-based accounting book system is printed and booked at the end of the year, stamped, and fully signed by the company in accordance with requirements.

The following are the downsides of the computerized payment system:

**About the Division of Duties:** The departments' responsibilities are very clear, however, the billing

department uses the computer system to double-check the liabilities owed. This check is performed following a search for liabilities to an appointment and the submission of a payment request by the liabilities accounting department. The preceding method consumes the liabilities accounting department's time, and the search for debts due may be inaccurate.

**About Independent Verification:** At the end of the year, the company often obtains supplementary books, debit notes, and notes from the bank and compares them to the company's bank deposit book. Taking bank documents and comparing them with the enterprise's accounting books at the end of the year easily leads to errors that are not caught in time, and the burden accumulates at the end of the year.

#### 4. Solution

The money payment cycle at Duc Thanh Company is computerized. Using computers for payment speeds up secures, and streamlines the payment process. However, in order for Duc Thanh Company's computer payment process to be more complete, the following solutions should be implemented:

**Solution of Task Division:** Currently, the liabilities accounting department searches the set of liabilities documents for liabilities due. Because of this manual process, the liabilities department takes a long time to discover the debt due, and sometimes makes mistakes, resulting in late payments to the seller or the firm being a late payment, losing the payment discount, or being paid early. As a result, the solution proposed is that the liabilities accounting department accesses the computer system to search for debts due and produces payment papers for debts due to transmit to the payment accounting department.

**Independent Verification Solutions:** Debt notifications and yes notes are bank documents that detail the contents of each financial transaction. A supplementary book, often known as a bank statement, is a document that lists a company's banking transactions for a given time period. Thus, debit notes, credit notes, and supplemental books are bank-verified records that prove transactions at the company's bank. Every day or on a regular basis, the company should visit the bank to obtain supplementary books, debit notes, and credit notes, and to check bank papers with bank deposit books on accounting software. If a disparity occurs, it must be immediately reported to the bank for correction.

#### 5. Conclusion

The study synthesized accounting information system theory in the payment cycle, which is an important cycle that requires the inspection of key parties to provide a safe, rapid, and efficient payment process. System flowcharts for computer operations are paired with document flowcharts for manual processes to explain computer accounting information systems. The computer-based payment cycle employs the theory of material control activities to assess the benefits and drawbacks of the payment cycle on the computer of the Duc Thanh enterprise. The research enterprise has benefited from the study's positive and practical solutions.

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