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Accounting Information System on Computer in the Purchase Cycle-Duc Thanh Company Case Study

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Abstract

An accounting information system comprises a collection of small systems or material and immaterial components that work together to process financial transaction data and generate financial information. An information system that uses a computer will use a system flowchart for description. This study generalized the theory of system flowcharts in the computer purchase cycle. At the same time, apply the internal control theory to evaluate the system and improve its operation more effectively. The report describes the current state of the accounting information system in the computer buying cycle at Duc Thanh Packaging and Trading Production Co., Ltd. The study employed a system flowchart to depict the status of the purchase cycle on the computer, assessed the system's benefits and limits, and studied ways to improve the system.

1. Theoretical Basis
Accounting Information Systems and Accounting Information System Description Tools

An information system is a set of valid procedures for collecting data, processing it into information, and distributing it to consumers. Information system objectives là support the stewardship function of management, support management decision-making, and support the firm's day-to-day operations. Information systems are divided into accounting information systems and management information systems. The accounting information system's information processing objects are financial transactions and non-financial transactions that have a direct impact on the system's financial transaction processing. "A financial transaction is an economic event that affects the assets and equities of the organization, is reflected in its accounts, and is measured in monetary terms Nonfinancial transactions are events that do not meet the narrow definition of a financial transaction" (Hall, A. J. (2007) [5]. Accounting information systems are classified into two types based on data processing and storage methods: manual accounting information systems and computerized accounting information systems. Businesses will utilize the tool Document Flowcharts to describe manual accounting information systems. When a firm uses computers, a System Flowchart is used to describe the system.
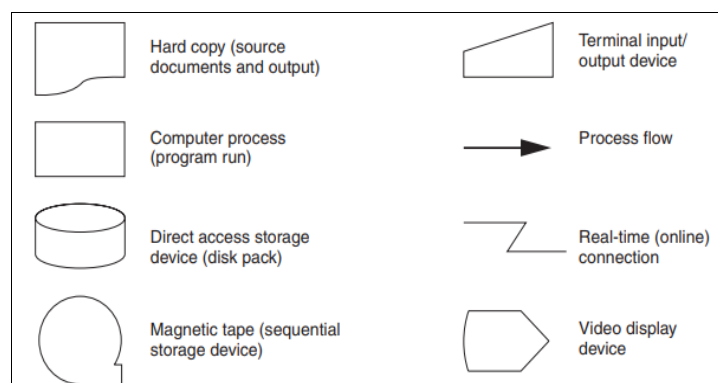
Hall, A. J. (2007) [5]

Fig 1: Symbol Set for System Flowcharts

A system flowchart is used to depict the relationships between the main elements-input data, programs, and output products—of a computer system. System flowcharts represent the system's input data, transaction files, master records, and output reports. It also describes the system's medium, such as magnetic tape, magnetic disk, and terminal devices. In reality, there is a combination of Document Flowcharts and System Flowcharts in case a business uses computer system software in some activities and some departments. There is still manual human activity. Therefore, most System Flowcharts still have Document Flowcharts operations.

Computer Purchasing Cycle

The computer purchasing cycle is a purchasing cycle that is supported by a computer software system and uses computer software to communicate information amongst departments. The computer software system will assist users in data retrieval, document creation, accounting bookkeeping, and so on. Depending on each business, the level of automation applied varies. The more a corporation automates, the less human engagement in individual tasks is required, and the human role is primarily focused on controlling and inspecting activities. Automate the purchasing cycle with the participation of a Data Processing System. Data Processing System stores purchasing activity information automatically compiles documents, automatically records accounting books, and generates accounting reports. The following departments are in charge of the automated purchasing cycle:

*Data Processing System:* The Data Processing System accomplishes two jobs in two stages. State 1: Check Inventory and prepare Purchase Order. The basis for implementation is the Inventory File and Vendor File. Stage 2 is after completing the import, the Accounts Payable Department performs Enter data. The Data Processing System department changes data in the computer system and necessary files automatically.

Purchasing Department: The Purchasing Department accesses the computer system, checks orders and prints orders, then transfers orders to relevant departments. The existence of the purchasing department is here as a final control step before the order is sent to the supplier. The Purchasing Department will assist in eliminating computer errors when placing purchases, avoiding the situation of ordering undesirable things at exorbitant prices.

Receiving Department: The receiving department's presence guarantees that items are received by what the firm ordered, checks the quality of the goods, and generates a goods receipt report.

Accounts Payable Department: The Accounts Payable Department plays an important role in the computerized purchasing system. The payables department enters purchasing transactions into the computer system, keeps track of debts, and makes debt payments on behalf of the company.

Thus, despite the availability of computers, the existence of some departments such as purchasing, receiving, and accounts payable is required. When the purchasing department is bypassed and the business's computer system can connect directly to the seller's computer system, orders are placed by the computer system. The data from the buyer is directly sent to the seller's computer system.
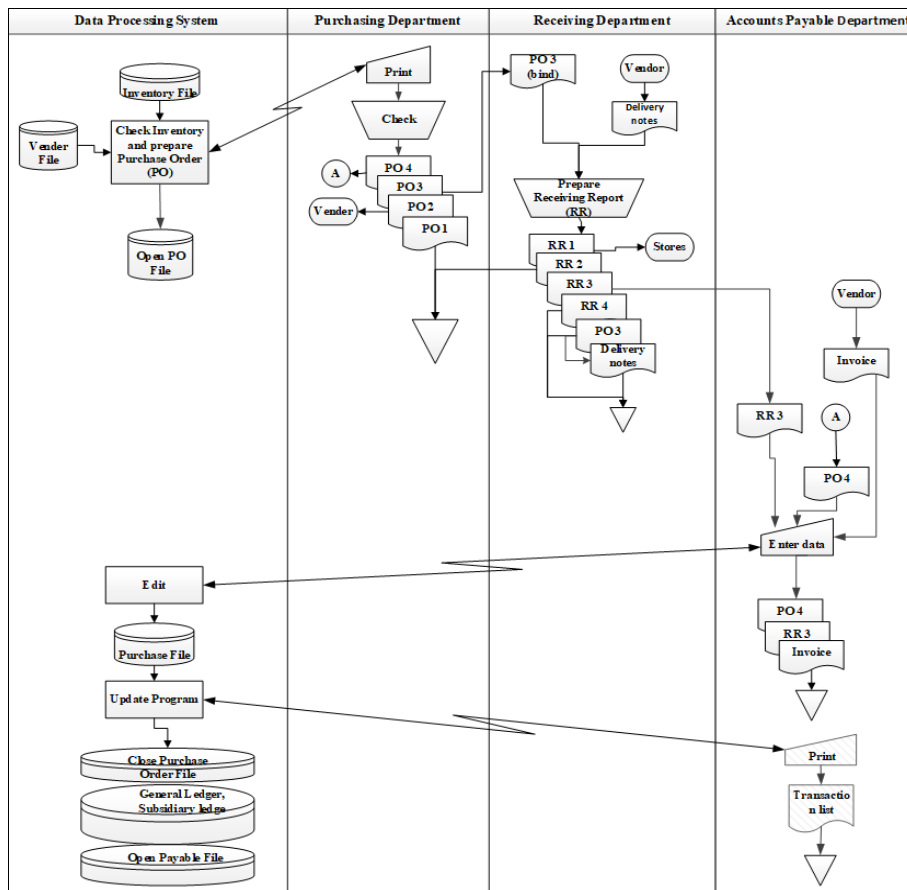
Bui Thi Ngoc, Tran Thi Du (2020) [1]

Fig 2: Computerized purchasing cycle

Internal Computer Control of the Purchasing Cycle

Transaction Authorization: The use of computer systems in the purchase cycle has reduced manual functions, such as recognizing inventory that needs to be replaced, to be performed by computer systems instead. The computer system automatically updates the recording of general accounting books and detailed accounting books. It is critical to control input data submission and ensure that the software's automated transactions and reports are error-free. Therefore, transaction authorization in a computerized purchasing system authorizes the purchasing department to decide which orders are sent to suppliers. The accounts payable department is also authorized to enter purchase data into the computer system and save papers.

Segregation of Duties: The computer system is used to assist in the task division here. It is vital to distinguish between tasks performed by computers and tasks performed manually by humans. The computer handles the responsibility of tracking inventory and identifying which inventory has to be refilled, as well as accounting entries. The purchasing department and the accounts payable department are in charge of order approval and purchase transaction recording activities in the computer system. Because the number of parts participating in the system is reformed in the direction of reducing the number, reducing manual operations, and strengthening inspection and supervision activities, the more limited the task division control becomes.

Supervision: Monitoring purchasing actions on a computer necessitates knowledge of computer systems. An understanding of computer systems is required to detect mistakes in computer processes. Furthermore, despite the use of a computer system, receiving monitoring is still a vital activity in the purchase cycle to verify that commodities are received accurately, in appropriate quantity and quality.

Accounting Records: The computerized purchasing cycle accounting system is automated. However, the accuracy of the accounting books in this program depends on the user's active data entry. As a result, accuracy in document collection and data entry into computer software is required to ensure correct accounting data. Simultaneously, you must ensure data storage if the computer is damaged or data is lost due to a virus.

Access Control: Accounting records are kept on digital storage media by computerized accounting information systems, with few or no hard copies kept. Because magnetic recordings are vulnerable to illegal access, records must be safeguarded by limiting file access, and computer programs must be safeguarded and monitored. for transactions involving data access and dumps. Accounting records should be protected from illegal access and destruction by managers using suitable security policies.

Independent Verification: The independent verification functions between the general ledger and the detailed ledger are no longer available in the computer-based purchasing cycle because the computer system automatically records the detailed ledger and general ledger, and thus the data between the general ledger and the general ledger are no longer available. Inventory details and inventory ledger are always the same, as are the accounts payable details book and accounts payable ledger. In the computerized purchasing cycle, independent verification operations will verify the actual quantity of inventory in the warehouse and the quantity of inventory currently on the accounting books. This verification action is carried out as part of inventory operations. Inventory operations can be undertaken on a monthly or irregular basis, depending on the demand for inventory information.

2. Research Methods

Methods of Data Collection: The data for the study was gathered from two main sources: primary data sources and secondary data sources. To synthesize theories about information systems, the author used secondary data to examine articles and books on accounting information systems in general and accounting information systems in the purchase cycle in particular. The author performed a survey at Duc Thanh Packaging Production and Trading Company Limited using primary data. Observing the actions of the accounting information system during the purchasing cycle, reviewing documentation governing the company's procedures and processes, and interviewing departments relevant to the purchasing cycle are all part of the survey process. Duc Thanh Packaging Production and Trading Co., Ltd.'s purchasing procedure.

Method of Data Analysis: The current status of the accounting information system in the computer purchasing process at Duc Thanh Packaging Production and Trading Co., Ltd. was evaluated using descriptive statistics and comparison and synthesis methodologies.

3. Actual Situation

Printing companies in Vietnam face stiff competition from Chinese printing companies. The development of e-commerce and the logistics industry allows for the quick and low-cost shipment of goods from China to Vietnam. This makes it challenging for printing companies in Vietnam to retain traditional customers and grow the market. Printing companies are constantly attempting to strengthen their position in the Vietnamese market. Along with investments in printing systems and printing product processing machines, printing companies in Vietnam also invest in computer systems and accounting software, as well as business management software, to provide effective accounting information, thereby improving production and business efficiency. The study conducted a case study of Duc Thanh Packaging and Trading Production Co., Ltd., one of Hanoi's printing companies that has invested in computer systems for accounting and managerial operations. The following system flowchart describes the computer purchasing cycle at Duc Thanh Packaging and Trading Production Co., Ltd.:
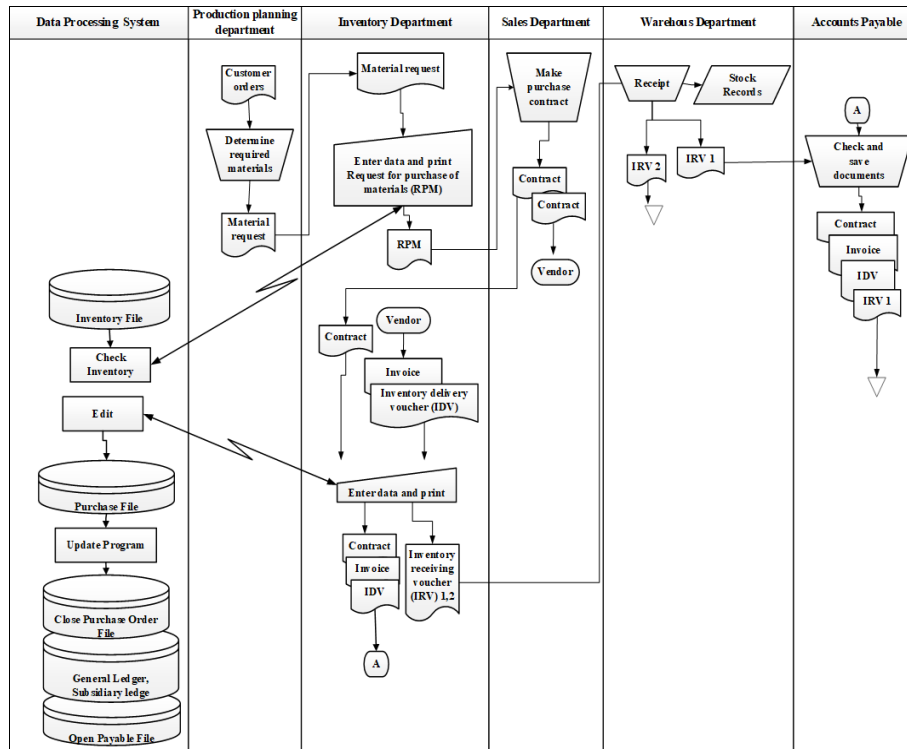
Fig 3: Computer purchasing cycle of Duc Thanh Packaging and Trading Production Co., Ltd

Production planning department: At a printing company, production needs are often determined relatively accurately based on customer orders, because the characteristics of the printing business are production according to customer orders. The production planning department determines the amount of materials to utilize based on the orders in the production plan and submits a Material request to the inventory department.

Inventory Department: The inventory department receives the Material request, and will access the computer system to check the amount of inventory available and identify materials that need to be purchased additionally**.** The inventory department establishes a Request for purchase of materials to send sales department.

Sales Department: The sales department receives a material buy request, looks for suppliers, and obtains bids from vendors. Sales contracts are signed by the sales department. After signing with the seller, the contract of sale is placed in the inventory department.

Inventory Department: When the seller's items, invoices, and warehouse receipts are sent, the accountant enters data into the software using the seller's documentation. At the same time, the inventory accounting department connects to the computer system and prints out the two-link warehouse receipt, which is then delivered to the warehouse. Purchase contracts, invoices, and warehouse receipts of the seller are sent to the debt accountant.

Data Processing System: The data processing system modifies the software and creates a purchase file. Then perform program updates on purchase files, payable files, and inventory files. The computer system also updated the general ledger and subsidiary financial system at the same time.

Warehouse Department: The warehouse department and the seller count the products, insert the real number into the Inventory receiving voucher, and award the seller a link Inventory receiving voucher. The Warehouse Division of

Stock Records. The Inventory Receiving Voucher is then forwarded to the Accounts Payable Department for payment actions.

Accounts Payable Department: Receive papers, review and compare them, then save them to the unpaid debt file.

The following benefits were discovered through a survey on the computer purchasing process at Duc Thanh Packaging and Trading Production Co., Ltd.:

Transaction authorization: At the Duc Thanh company, transaction authorization activities are easily visible. The purchase order is created by computer at Duc Thanh Company; nevertheless, the purchasing department is authorized to print the order and check it before sending it to the department and sending it to the vendor. This is a critical authorization action that ensures the purchase order is not flawed owing to ordering the incorrect type and amount of products. The receiving department has the authority to receive products directly from the incoming supplier and generate a receipt report. Although the purchase cycle is done on a computer, the receipt is done manually by a human. The liabilities accounting department is in charge of tracking liabilities. As a result, the computer-based purchasing cycle encompasses multiple departments, each of which is assigned specific functions to maintain the smooth functioning of the purchase cycle, minimize risks, and meet the needs of companies in collecting, processing, and disseminating information.

Access control: Duc Thanh companies have strict access control operations for inventory and computer systems. The inventory of the company is kept in locked warehouses overseen by the storekeeper. The company's computer system is kept in secured rooms; after working hours, rooms are locked and assigned to management workers. If the firm observes a long holiday, such as Tet or National Day, the room door is sealed, the seal is signed by the departments, and the company's seal is used. The computers at the company are set up with direct user passwords, and each

employee has a password to access the administrative side of the task.

Accounting records: Accounting books are completely compliant with rules. Duc Thanh Company's documentation ensures that arising economic processes are reflected. The computer ledger system must conform to the accounting form of the applicable unit, and at the end of the year, the full accounting book system must be printed, sealed, bound, and stored according to requirements.

However, the accounting information system in the buying cycle on the computer of Duc Thanh company still has several drawbacks:

Automate purchasing activities: Currently, Duc Thanh Company has integrated the buying cycle on computers, with computers automatically recording accounting books and accounting reports, as well as automatically creating purchase request forms. However, several operations of the computer-based purchasing cycle are still done manually, such as creating material request forms and keeping warehouse books. Many activities are performed manually, resulting in lengthy execution times, time-consuming warehouse bookkeeping, and paper costs when printing papers.

Independent verification: Independent verification is a cross-departmental control activity that detects disparities, errors, and fraud. There is no reconciliation between the warehouse and the inventory accounting department in Duc Thanh's present purchasing cycle, which can lead to a difference between the inventory on the accounting books and the real inventory at the enterprise's warehouse.

Accounting records: The liabilities accounting department keeps track of outstanding liabilities, but it does not yet have access to the tools to check payments due. If the enterprise does not pay on time as specified in the contract, payment may be delayed, the enterprise's reputation may suffer, or the enterprise may lose the payment discount.

4. Solution
The accounting information system in the purchase cycle on computers at Duc Thanh Company has supplied information about purchasing operations, asset protection, and fraud prevention. However, this cycle must include some of the following comprehensive solutions:

Solutions for automating the purchase cycle on the computer: The computer acquisition cycle at Duc Thanh firm is still done manually, but if these parts are used, the computer will be more efficient. The production planning department must enter data about orders into the computer system, and the computer will automatically generate a Request for Purchase of Materials, so the Production planning department does not need to make a hard copy Material request. This saves the Production planning department time, as well as the cost of printing and circulating Material requests. To ensure monthly reconciliation between the two departments, enterprises must construct the warehouse accounting administrative part on the computer. The warehouse accounting administrative part functions independently of the inventory accounting administrative part.

Independent verification solutions: The real inventory now in the warehouse and the inventory data of the inventory accounting department must be compared at Duc Thanh Company; the reconciled data is about quantity. The warehouse department accesses the software at the end of

the month, enters the warehouse module, prints the Import-Export-Inventory summary table, and sends it to the inventory accounting department for comparison.

The liabilities accounting section provides bookkeeping solutions: The liabilities accounting department must use the computer system every day to check the liabilities to identify the debts that must be paid. The liabilities accounting department then analyzes the information about the debt to be paid with the set of unpaid liabilities documents to establish the debt that must be paid. This solution aids in the tracking of liabilities in real-time, ensuring that firms do not pay early or late, thus protecting their interests and reputation.

5. Conclusion
The study synthesized accounting information system theory in the computer purchasing cycle, as well as accounting information system theory in the computer purchasing cycle with the typical case of Duc Thanh enterprise. The system flowchart was used in the study to explain the purchase cycle on Duc Thanh's computer, remarking on the system's merits and shortcomings. Based on the current situation of the Duc Thanh company, the research offers solutions tailored to the company's needs, such as solutions for computerizing the purchase cycle, solutions for independent verification between the warehouse department and the inventory accounting department, and solutions for documents and accounting books in the liabilities department. The research has the impact of assisting printing firms in particular and businesses in general in having documents to study and apply in the practice of each business to improve the accounting information system in the computer acquisition cycle.

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