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## Designing an Accounting Information System According to the Production Cycle in Manual Accounting

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#### Abstract

In the management and operation of businesses in general and manufacturing businesses in particular, a management information system is indispensable, in which the accounting information system plays a key role. There are many aspects to organizing an accounting information system in an enterprise, but designing an accounting information system according to the production cycle in manual accounting is extremely necessary. The article summarizes the forms of production, thereby focusing on designing a production accounting information system based on batch production. Building a system of batch production documents, including a production schedule, list of raw materials, technological process sheets, production orders, etc.At the same time, the article also builds a flow chart of batch production documents. Including: The planning and production department, the production department, inventory control, and the cost accounting department.

Keywords: Accounting Information System, Production Cycle, Manual Accounting

## 1. Introduction

An accounting information system is a structure that businesses use to collect, store, manage, process, retrieve, and report financial data. This helps businesses save time and minimize errors in the process of recording, classifying, and reporting financial information. It provides accountants and financial managers with accurate and timely data to support business decision-making. It also helps businesses meet financial and tax reporting requirements, ensure transparency, and comply with relevant legal regulations. In business, specially trained accountants work extensively with accounting information systems to ensure the highest level of accuracy in financial transactions and company record-keeping, as well as make financial data easily available to those who need to access it legally while keeping it intact and secure.

Designing an accounting information system according to the manual production process in an enterprise plays an important role. The production cycle in manual accounting is a series of repetitive activities that involve converting inputs, including raw materials, labor, and other resources, to create a finished product or service. The goal of the cycle is to ensure the cost of raw materials and other resources needed for the production process is lowest, production capacity is optimally exploited, and existing resources are utilized. Maximize, avoid wasting resources, and minimize errors in the production process. In addition, the production cycle also aims to ensure the best quality of products and services and to fully and accurately determine and calculate product costs for an order or an object. Calculate a specific price. In addition, through the production cycle, managers can perform cost fluctuation analysis to serve cost management in the enterprise.

## **2. Forms of Production**

Depending on the type of product being produced, a company may use one of the following production methods:

Continuous production: creates uniform products through a consecutive series of standard procedures. Petrochemical products and cement are produced using this method. The characteristic of this method is that companies always try to maintain a necessary amount of inventory to meet expected sales demand. Consumption forecasting, along with information about available inventory, will drive this production process.

Form of production to order: This involves the production of individual products in accordance with the customer's technical requirements. Production is initiated by orders, not by inventory levels.

Batch production: production of a group of separate products (product batch). Each product category in the same batch is often similar in terms of raw material requirements and production organization. The number of products in each batch needs to be



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large to accurately calculate the costs for set-up and reequipment for each production batch. This is the most common production method and is used to produce products such as mobile phones, household appliances, canned products, tires, textbooks, etc.

## **3. Batch Production System**

#### The Nature of the Batch Production System

The batch manufacturing system includes four basic processes: production planning and control, production execution, inventory control, and cost accounting. The data flow diagram (Fig 1) summarizes the concept of a batch production system.



Fig 1: Batch production data flow diagram

#### Documentation of the Batch Production System

To implement a batch production system, the company can rely on different documents. For a production-to-order company, those are orders. For mass production companies, based on market demand forecasts.

A production schedule is a standard plan for starting production. This plan describes the specific products to be produced, the quantity of products to be produced in each batch, and the production schedule from start to finish.

The bill of materials gives details about the type of raw material, quantity of raw materials, and assemblies used in the production of each part of the product. The material requirement for the entire shipment is determined by multiplying the quantity of goods in this bill of materials by the number of items in the shipment.

The technological process sheet indicates the production process that a batch of products must follow during production. Conceptually, the "technological process sheet" is similar to the "materials list". While the bill of materials details material requirements, the process sheet details the sequence of operations (machining and assembly operations) and the standard time for each stage of work.

Production orders are made based on the raw materials list and technological process to detail materials and production activities (processing and assembly, etc.) for each shipment. These work orders, along with shipping tickets, kick-start the production process on the manufacturing floor.

Shipping notes record the work done at each production facility and allow the movement of work or batches of products from one production facility to the next.

The raw material purchase requisition form allows the warehouse keeper to issue raw materials to individuals or

production units during the production process. These slips usually only detail standard quantities. Materials needed that exceed the standard quantity require separate material requisitions that are clearly identified as excess material requisitions. This allows for tighter control by highlighting excess material usage. In some cases where less standard raw materials are used for production than expected, manufacturing plants will return unused materials back to the warehouse with a material return note.

#### Flow Chart of Production Activities in Batches

The flow chart of batch production activities is shown in Figures 2 and 3. The flow chart illustrates the departments involved, the tasks performed in each department, and the documents to initiate or receive after each task. The documents presented in the flow chart are hard copies. However, there may be many companies that transfer data digitally through computer systems using data entry screens or collect data by scanning barcode tags.



Fig 2: Flow chart of batch production cycle documents



Fig 3: Flow chart of batch production cycle documents (continued)

1. Production Planning and Control Department:

This department performs two main activities: (1) planning of materials and production activities; and (2) production planning.

Raw material requirements and manufacturing operations:

Raw material requirements for any batch of product are the difference between the quantity of raw materials needed and the actual amount of raw materials available in inventory. Information on raw material requirements is obtained from inventory analysis, consumption forecasts, technical specifications (if any), and bills of materials. The result of this activity is the generation of purchase requisitions for increased materials. The procedures for preparing orders and requiring inventory are the same. Production requirements are shown on the technological process sheet.

Production planning: The overall production plan will be established to suit different batches of products. This plan is affected by time constraints, batch sizes, and technical requirements set out in the bill of materials and process sheet. Production planning creates production orders, shipping tickets, and material requisitions for each batch of products in the production process. A copy of the work order is sent to the cost accounting department to establish a new work-in-process cost account for the product batch. Production orders, shipping notes, and material request notes participate in the production process and are delivered to different production workshops in the order shown on the technological process sheet.

## 2. Production Department:

Carry out production activities. Actual production activities take place when workers obtain materials from storage through material requisitions. These materials, as well as the processing and labor required to produce the product, must be used in accordance with the requirements of the work order. When work is completed at a specific production facility, a supervisor or other authorized person signs a shipping slip to authorize the shipment to continue to the next production facility. To demonstrate that a production phase has been completed, a copy of the shipping sheet is sent back to the production planning department to be updated in the open work order file. When the final shipping ticket is received, the open work order record is closed. The finished product, along with a copy of the work order, is sent to the finished product repository. Additionally, a copy of the work order is sent to inventory control to update the records of finished products stored. Manufacturing plants also play an important role in recording labor time costs. These jobs are processed by supervisors by sending time cards and job tickets to the cost accounting and payroll departments at the end of each workweek.

## 3. Inventory Control:

Inventory control activities: Inventory control includes three main activities.

First, inventory control provides production planning and control activities with reporting on the status of finished products and raw materials in stock.

Second, the inventory control function involves continuously updating material inventory records from material requisitions, excess material requisitions, or returns. materials.

Based on the receipt of production orders from the final production facility, the inventory control department records completed production by updating the finished goods inventory record.

One goal of inventory control is to minimize inventory costs while ensuring that existing inventory still meets current demand. The inventory model used to achieve this goal helps answer two basic questions: When will inventory be purchased? How much inventory will be purchased?

## 4. Cost Accounting Department:

Production cycle cost accounting activities record the financial effects of production activities that occur during production. Figure 7-18 shows cost accounting information tasks and data flows. The cost accounting process for the given manufacturing process begins when the production planning department sends a copy of the original production order to the cost accounting department. This activity marks the start of production by establishing a new document to record in the work-in-progress book. This record is a detailed book for the work-in-progress control account in the general journal.

When materials and labor are increased during production, documents reflecting these events are sent to the cost accounting department. The inventory control department will send copies of material requisition slips, material excess slips, and material return slips. The different production workshops will send completed work orders and shipping notes. These documents, along with the standards provided in standard costing records, allow cost accountants to update work-in-progress accounts that are affected by standard changes in direct labor costs. Direct material costs, direct material costs, and manufacturing overhead costs. Deviations from standards will be recorded to show deviations in material usage, direct labor, and manufacturing overhead costs.

The receipt of the final shipping note for a particular shipment signals the completion of the manufacturing process and the transition of the product from work in progress to finished product. At this time, the cost accounting department will close the work-in-progress cost account. Periodically, the information shown on the workin-progress account is recorded in journal documents and sent to the general accounting department to record in control accounts.



Fig 4: Flow chart of cost accounting documents

## 5. Conclusion

Science and technology are increasingly developing, leading to the strong development of other economic sectors. That has posed a huge challenge for businesses in terms of storing and managing financial and accounting information. At this time, the role of the system will be maximized. An accounting information system is a very important part of setting up and managing a business accounting system. Accounting information systems undertake the task of storing and processing information to provide the most useful and reliable information to serve the strategic decisions of businesses. From there, transparent financial sources are provided promptly to help businesses attract the International Journal of Advanced Multidisciplinary Research and Studies

attention and trust of investors and world agencies. At the same time, the business's reputation and ability to access new capital sources are improved. Advanced. Therefore, a scientific and reasonable accounting information system will increase the value of the business through improving operational efficiency, increasing operating efficiency, increasing competitiveness, and supporting control.

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