

MIS

UNIT 4

TRANSACTION PROCESSING SYSTEM

TPS is an information system that is used to process day to day transactions such as purchases, expenses, sales, receipts, payments, etc. TPS may provide us with meaningful routine reports such as profit & loss a/c and balance sheet, etc.

TPS basically manipulates data from business transactions.

The users of TPS generally are not in a position to make typical management decisions.

TRANSACTION PROCESSING SYSTEM

A TPS captures data, processes it and makes available such data in the form of reports to be utilized by the management. TPS is the oldest known information system used for business applications. However, TPS has progressed a lot since then, majorly due to availability of the Internet.

A TPS may be defined as an Information system that collects, stores, retrieves day to day transactions of the organization.

TRANSACTION PROCESSING SYSTEM EXAMPLE

TPS generally may be used in Railway Reservation Systems, Accounting Systems, Banking Systems, etc. Global economy is a major reason for the advancement of TPS.

OBJECTIVE OF TPS

Process data generated by and about transactions

Maintain a high degree of accuracy

Ensure data and information integrity and accuracy

Produce timely documents and reports

Increase labor efficiency

Help provide increased and enhanced service

Help build and maintain customer loyalty

Achieve competitive advantage

MAJOR CHARACTERISTICS OF TPS

Large amounts of data are processed.

The sources of data are mostly internal, and the output is intended mainly for an internal audience.

The TPS processes information on a regular basis: daily, weekly, monthly, etc.

Large storage (database) capacity is required.

High processing speed is needed due to the high volume.

TPS basically monitors and collects past data.

MAJOR CHARACTERISTICS OF TPS (CONTI.)

Input and output data are structured (i.e., standardized).

Low computation complexity is usually evident in TPS.

A high level of accuracy, data integrity, and security is needed.

High reliability is required.

Inquiry processing is a must.

TRANSACTION PROCESSING CYCLE

The process of data collection, data editing, data correction, data manipulation, data storage, and document production.

Transaction Processing Activities

The processing of individual transactions, of course, depends to a degree on their nature. The general elements of transaction processing include:

Data Collection, Data Editing, Data Correction, Data Manipulation, Data Storage

Data Collection

Capturing and gathering all data necessary to complete the processing of transactions.

Direct data entry is commonly employed through source data automation. Increasingly, transaction processing systems rely on electronic data interchange (EDI). By replacing paper documents with formatted transaction data sent over telecommunications networks, these systems provide for computer-to-computer communication without repeated data entry. Although used internally by some firms, EDI primarily serves the needs of intercompany communication.

Data Editing

The process of checking data for validity and completeness.

Data Correction

The process of reentering data that was not typed or scanned properly.

Data Manipulation

The process of performing calculations and other data transformations related to business transactions.

Data Storage

The process of updating one or more databases with new transactions.

DOCUMENT PRODUCTION AND REPORTS

Many TPSs produce transaction documents, such as invoices, purchase orders, or payroll checks. These transaction documents produced by TPS may be divided into two classes: action documents and information documents.

1. **Action documents** direct that an action take place. Turnaround documents initiate action and are returned after its completion to the requesting agency. They therefore also serve as input documents for another transaction.

2. **Information documents** confirm that a transaction has taken place or inform about one or several transactions. Transaction documents require manual handling and, in some cases, distribution of multiple copies. The process is costly and may lead to inconsistencies if one of the copies fails to reach its destination.

QUERY RESPONSES AND REPORTS

TPS offer certain querying and simple reporting capabilities, albeit much less elaborate than those of management reporting systems. Most queries produce a screenful of information. However, reports are also often produced as a result of inquiries.

Unlike management reporting systems, TPSs typically provide a limited range of preplanned reports. The content and format of such reports are programmed into the TPS software and the reports are produced on schedule. The TPS reports are often quite long.

QUERY RESPONSES AND REPORTS

The following report types are produced by TPS:

- 1. Transaction Logs** - are listings of all transactions processed during a system run and include purchase order manifests or sales registers.
- 2. Error (Edit) Reports** - error reports list transactions found to be in error during the processing. They identify the error and sometimes also list the corresponding master file or database records.
- 3. Detail Reports** - detail reports are extracts from the database that lists records satisfying particular criteria.
- 4. Summary Reports** - typical summary reports produced by TPSs include financial statements.

TRADITIONAL TRANSACTION PROCESSING APPLICATIONS

1. Order processing systems

Module 1 : Order entry

Activity : The order entry system captures the basic data needed to process a customer order. With an on-line order processing system, the inventory status of each item is checked. If an order item can't be filled, a back order is created.

Order takers can review customer payment history data to see if credit can be extended. With EDI, a customer can place orders directly from its purchasing TPS into the order processing TPS of another organisation. With EDI, orders can be placed any time of day / night, and there is immediate notification.

Module 2 : Sales configuration

The sales configuration system ensures that the products and services ordered are sufficient to accomplish the customer's objectives and will work well together.

Sales configuration programs can suggest optional equipment, solve customer problems and answer customer questions, eliminate mistakes, reduce costs, increase revenues.

Module 3 : Shipment planning

The shipment planning system determines which orders will be filled and from which location. The output shows where each order is to be filled and gives a precise schedule. The system also prepares a picking list that is used to select the ordered goods.

Module 4 : Shipment execution

The shipment execution system coordinates the outflow of products from the organisation. The shipping department is given responsibility for packing & delivering the products.

The system receives the picking list from the shipment planning system. After shipment execution, 'shipped orders' transactions go to the invoicing system.

These transactions specify what items were shipped, the quantity, and to whom. This data is used to generate a customer invoice. The shipment execution system also produces packing documents, which are enclosed with the items being shipped, to tell customers what is in the shipment, on back-order...

Module 5 : Inventory control

For each item being picked, a transaction is passed to the inventory control system.

In this way, inventory records reflect the exact quantity on hand of each stock-keeping unit.

Once products have been picked out of inventory, other documents & reports are initiated.

Module 6 : Invoicing

Customer invoices are generated based on records from the shipment execution TPS. Most invoicing programs automatically compute discounts, taxes, and miscellaneous charges.

Module 7 :Customer interaction

Customer interaction system monitors & tracks each customer interaction with the company.

Goal: To build customer loyalty.

Module 8 : Routing and scheduling

A routing system determines the best way to get products from one location to another.

A scheduling system determines the best time to deliver goods & services.

Scheduling & routing programs are connected to the organisation's order & inventory TPS.

TRADITIONAL TRANSACTION PROCESSING APPLICATIONS

2. Purchasing systems

Module 1 : Inventory control

The firm must ensure that there's enough raw / packing material, & maintenance parts.

Module 2 : Purchase order processing

The purchase order processing system helps complete transactions quickly and efficiently. The buying process is facilitated by keeping data on suppliers' goods and services.

Module 3 : Receiving

The receiving system creates a record for the expected receipts. A centralised receiving department takes incoming items, inspects them, and routes them. Any items that fail inspection are sent back to the supplier.

Module 4 : Accounts payable

The accounts payable system increases control over purchasing while regulating cash flow. Major outputs = cheques to suppliers for materials & services. Input from the purchase order processing system provides an electronic record to the accounts payable application that updates the database.

TRADITIONAL TRANSACTION PROCESSING APPLICATIONS

3. Accounting systems

Module 1 : Budget

The budget transaction processing system amasses budget data and distributes it to users.

Module 2 : Accounts receivable

The accounts receivable system manages the cash flow by keeping track of money owed. When goods are shipped, the customer's accounts payable system receives an invoicing transaction, & the customer's account is updated in the supplier's accounts receivable system

Major output: monthly bills / statements sent to customers.

Module 3 : Payroll

Primary outputs: payroll cheque & stub, and the payroll register (=summary report)

The number of hours worked is collected, and weekly / monthly paycheques are prepared.

Module 4 : Asset management

Capital assets last several years, while their value depreciates, resulting in a tax reduction.

The asset management TPS controls investments & manages depreciation for tax benefits.

Module 5 : General ledger

Every monetary transaction that occurs must be recorded in a general ledger. A computerised general ledger system allows automated financial reporting and data entry.

The ledger application produces a detailed list of all business transactions & activities. Reports: profit & loss statements, balance sheets, general ledger statements.