Transaction Processing System (TPS)

• Whenever two people make an exchange, it is called a transaction. Transactions are important events for a company, and collecting data about them is called transaction processing. Examples of transactions include making a purchase at a store, withdrawing money from a checking account, making a payment to creditor, or paying an employee.

• Because transactions generally involve an exchange of money, it is critical that the data be protected during transmission and stored carefully so that it cannot be altered. It is also critical that the data be saved so that managers can verify the data if any conflicts arise. Also, the sales and purchase data from the foundation of the accounting and financial systems of every company, so the system must be able to produce the standard reports.
Company, is an advanced system that records and processes insurance-related transactions. Filing and processing insurance claims is a highly information-intensive process in which every step generates new data or modifies existing data. CareNet allows the company to accurately capture this data and disseminate it at the right time to its 7 million clients. The information generated by CareNet is useful both to employees of Travelers Insurance and to its clients. A Travelers employee can access the system and look at the latest transaction; an authorized client can also access CareNet to study the status of his or her insurance claim. This system, therefore, spans organizational boundaries and provides information to both internal external entities.

So when we are talking about the transactions of an organization in computerized manner, we talk about Transaction Processing System, popularly known as TPS.
- **Meaning**
  - Transaction processing systems were among the earliest computerized systems. Their primary purpose is to record, process, validate, and store transactions that take place in the various functional areas of a business for future retrieval and use. A transaction processing system (TPS) is an information system that records company transactions (a transaction is defined as an exchange between two or more business entities).

  - Transaction processing systems (TPS) are cross-functional information systems that process data resulting from the occurrence of business transactions.

  - Transactions are events that occur as part of doing business, such as sales, purchases, deposits, withdrawals, refunds, and payments. Transaction processing activities are needed to capture and process data, or the operations of a business would grind to a halt.

  - Let us look at a simple example of a business transaction. McDonald's, which sells a large number of hamburgers every day, orders raw materials from its suppliers. Each time the company places an order with a supplier, a transaction occurs and a transaction system records relevant information, such as the supplier's name, address, and credit rating, the kind and quantity of items purchased, and the invoice amount.
• **Types of Transactions**
• Note that the transactions can be internal or external.
• When a department orders office supplies from the purchasing department, an **internal transaction** occurs, when a customer places an order for a product, an **external transaction** occurs.
• **Internal Transactions:** Those transactions, which are internal to the company and are related with the internal working of any organization. For example Recruitment Policy, Promotion Policy, Production policy etc
• **External Transactions:** Those transactions, which are external to the organization and are related with the external sources, are regarded as External Transaction. For example sales, purchase etc.
• **Characteristics of Transaction Processing Systems**
• 1. A TPS records internal and external transactions for a company. It is a repository of data that is frequently accessed by other systems
• 2. A TPS performs routine, repetitive tasks. It is mostly used by lower-level managers to make operational decisions
• 3. Transactions can be recorded in batch mode or online. In batch mode, the files are updated periodically; in online mode, each transaction is recorded as it occurs.
• 4. There are six steps in processing a transaction. They are data entry, data validation, data processing and revalidation, storage, output generation, and query support.
• **Features of TPS**

1. A TPS supports different tasks by imposing a set of rules and guidelines that specify how to record, process, and store a given transaction. There are many uses of transaction processing systems in our everyday lives, such as when we make a purchase at retail store, deposit or withdraw money at a bank, or register for classes at a university. Almost all organizations, regardless of the industry in which they operate, have a manual or automated TPS.

2. A TPS is the data life-line for a company because it is the source of data for other information systems, such as MIS and DSS (Decision Support Systems). Hence, if the TPS shuts down, the consequences can be serious for the organization.

3. A TPS is also the main link between the organization and external entities, such as customers, suppliers, distributors, and regulatory agencies.

4. TPS exist for the various functional areas in an organization, such as finance, accounting, manufacturing, production, human resources, marketing, quality control, engineering, and research and development. Until a few years ago, many companies viewed the TPS for each business function as separate entity with little or no connection to other systems in the company. Today, however, many companies are trying to build cross-functional TPS to promote the free exchange of information among different business units. This is a desirable goal, but is still very difficult to achieve.
6 Process of Transaction Processing System
The six steps in processing a transaction are:

a. Data entry
b. Data Capture
c. Data validation
d. Processing and revalidation
e. Storage
f. Output generation
g. Query
• To be processed, transaction data must first be entered into the system. There are a number of input devices for entering data, including the keyboard and the mouse. Documents generated at the point where a transaction occurs are called source documents and become input data for the system.

• For example, when a customer returns an item at a store, the sales receipt becomes the source document for the transaction "return item for refund". An ATM receipt for a bank transaction becomes.
d. Processing and Revalidation

One the accuracy and reliability of the data are validated, the data are ready for processing. There are two ways to process the transactions: online and batch mode.

Following methods are available for Data Processing:

- **Online transaction processing (OLTP)** is the almost instantaneous processing of data. The term *online* means that the input device is directly linked to the TPS and therefore the data are processed as soon as it is entered into the system. Input device may be at a remote location and be linked to the system by networks or by telecommunications systems. Some examples of online transaction processing are ATM transactions, student registration for classes. The processing of flight reservations is another good example of an online system in which data are processed.

A travel agent checks for seat availability, using the data in a central computer system, and lately notifies the customer as to the status of his or her ticket. Once the reservation is made, the airline system updates its files and sends a confirmation to the travel agent. Online processing is possible because of storage, such as disks, that process data in a random order.
• **Batch Processing**, in which transactions are accumulated over time and processed identically. Batch processing may be done on a daily, weekly, or monthly basis or any other time period appropriate to the application. For example, a company may process the travel expenses of its employees on a monthly basis, whereas Bath processing usually involves. Gathering source documents originated by business transactions, such as sales orders and invoices, into groups called batches. Recording transaction data on an input medium, such as magnetic disks or magnetic tape. Sorting the transactions in a transaction file in the same sequence as the records in a sequential master file.