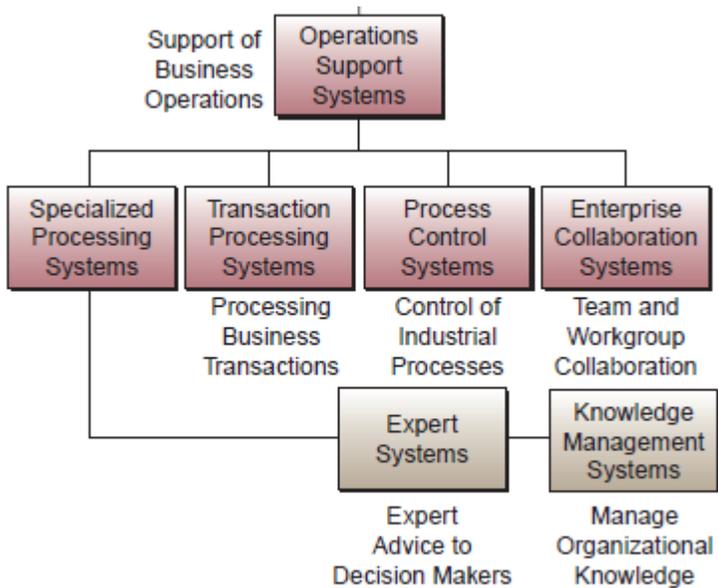


Answers for the MIS paper 2014 / July 2015

01)

- A) The role of a business firm's operations support systems is to **process business transactions, control industrial processes, support enterprise communications and collaborations, and update corporate databases efficiently.**



Transaction Processing Systems (TPS) Roles

Process business transactions: Record and process business transactions: Sales processing, inventory systems, accounting systems.

Control Industrial processes:

Eg: Processes the operations / functions by monitoring and controlling: Packaging, manufacturing

Process Control Systems:

Monitor and control physical processes: Using sensors to monitor chemical processes in petroleum

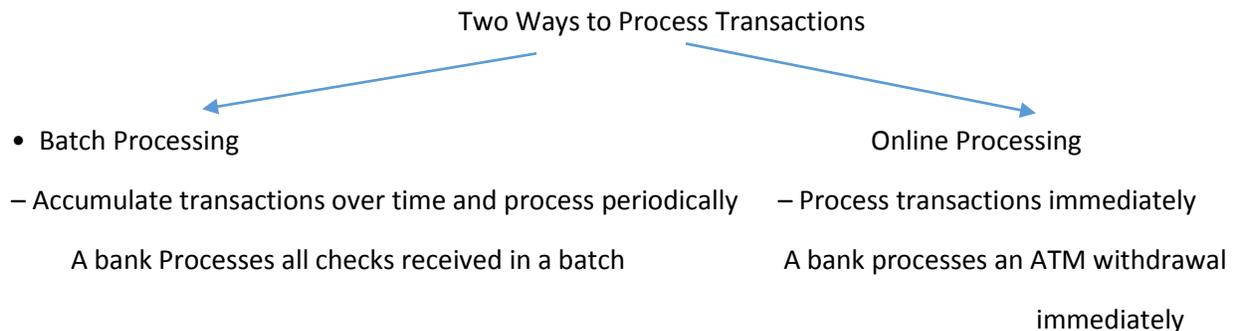
Enterprise Collaboration Systems

Enhance team and workgroup communication: email, video, conferencing.

Transaction Processing Systems (TPS)

Defn: *Computerized system that performs and records the daily routine transactions necessary to conduct the business; these systems serve the operational level of the organization*

Transaction processing systems are important examples of operations support systems that record and process the data resulting from business transactions. They process transactions in two basic ways. In *batch processing*, transactions data are accumulated over a period of time and processed periodically. In *real-time (or online)* processing, data are processed immediately after a transaction occurs. For example, point-of-sale (POS) systems at many retail stores use electronic cash register terminals to capture and transmit sales data electronically over telecommunications links to regional computer centers for immediate (real-time) or nightly (batch) processing.

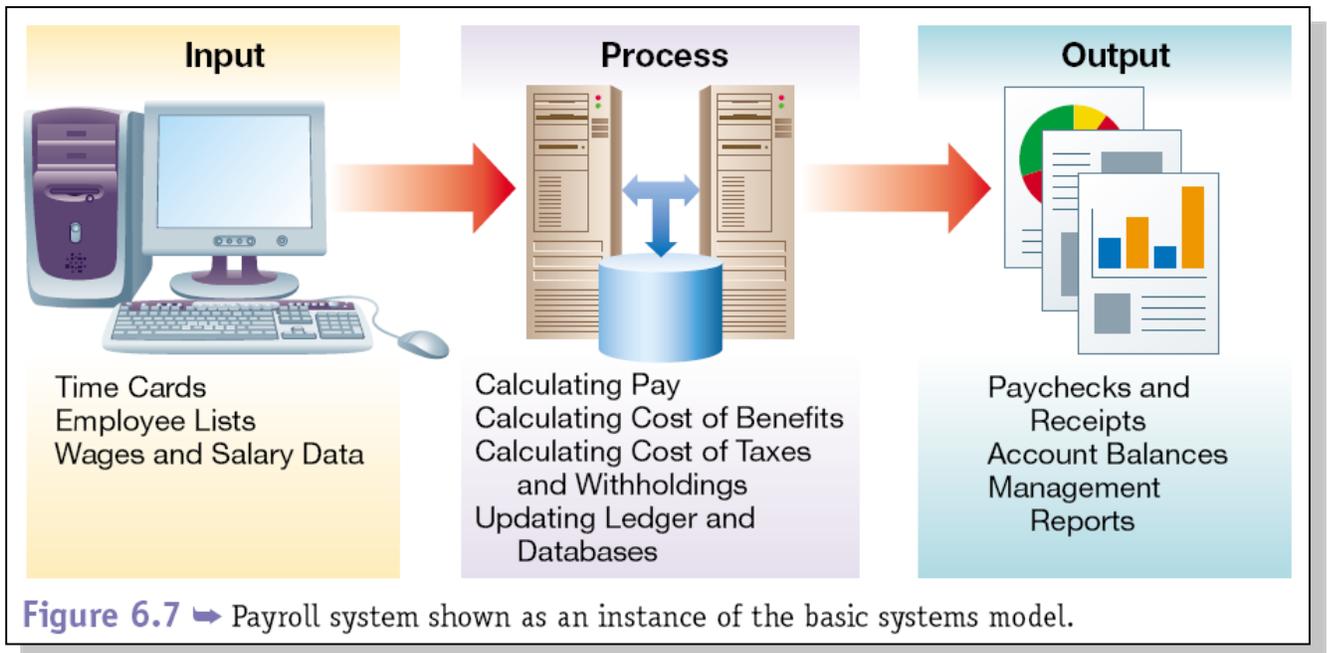


Basic Functions,

- TYPE: Operational-level
- INPUTS: transactions, events
- PROCESSING: updating; e.g. stock levels)
- OUTPUTS: detailed reports
- USERS: operations personnel, supervisors
- DECISION-MAKING: highly structured. (sale of products)

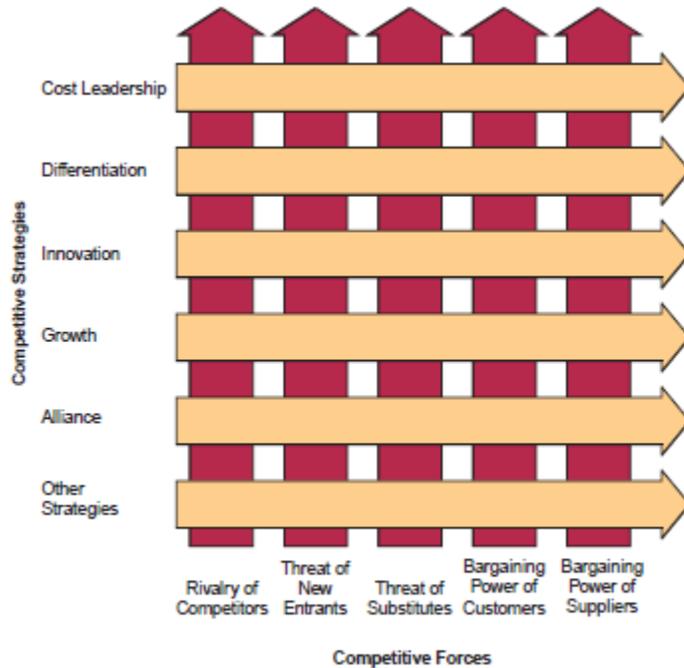
EXAMPLE: payroll, accounts payable, point of sale (P.O.S.)

payroll system



Inputs	Processing	Outputs
Transactions Events	Validation Sorting Listing Merging Updating Calculation	Lists Detail reports Action reports Summary reports?

b) below figure illustrates that businesses can counter the threats of competitive forces that they face by implementing one or more of the five basic **competitive strategies**.



Competition is a positive characteristic in business, by implement a system that allows customers to track their orders or shipments on-line is a definite advantage and I will like to explain what strategies that this company is going to peruse by achieving this as follows,

This could be considered a form of differentiation because the other competitors in the marketplace do not offer this service.

1: Differentiate:

Differentiate

- Develop new IT features to differentiate products and services.
- Use IT features to reduce the differentiation advantages of competitors.
- Use IT features to focus products and services at selected market niches.

The company is trying to introduce an online tracking system, which would be a plus point in the business world where they can gain the lead in the competition. They have achieved differentiate strategy by serving a customer in a different approach. There customers able to track their orders and shipments online. This will be satisfying the basic points above mentioned in blue box.

2: Innovative

Innovate

- Create new products and services that include IT components.
- Develop unique new markets or market niches with the help of IT.
- Make radical changes to business processes with IT that dramatically cut costs; improve quality, efficiency, or customer service; or shorten time to market.

And some can argue that this is satisfying the **Innovation Strategy, yes it is**. Finding new ways of doing business. This strategy may involve developing unique products and services or entering unique markets or market niches.

But this could be varying, if we take the given question in a way like below. **Think if other competitors also offering this online service**, then online order tracking would not serve to differentiate one organization from another.

But, if they provide customers to access shipment information via not only a computer but a mobile phone as well, then such an action could fall into both the differentiation and innovation strategy categories. This is totally base on your point of view.

c)

What does it mean to be agile?

Being agile means being able to respond adequately to changes 😊

Why is it important to respond adequately to changes?

Because the environment we live in changes all time and it has been changing faster over the years. If we don't respond adequately to those changes we may end up doing things inadequately, i.e., things that won't get us to our objectives

To be an **agile company**, a business must use four basic strategies.

A) The business must ensure that customers perceive the products or services of an agile company as solutions to their individual problems.

It can price products on the basis of their value as solutions, rather than their cost to produce. Simply we should provide a solution to cater their requirements i.e.: product or service, this is based on the individual behaviors of the customers. Basically we are in a competitive era where we should focus on individual behaviors and to satisfy their needs rather than thinking about the cost to produce.

B) An agile company cooperates with customers, suppliers, other companies, and even with its competitors:

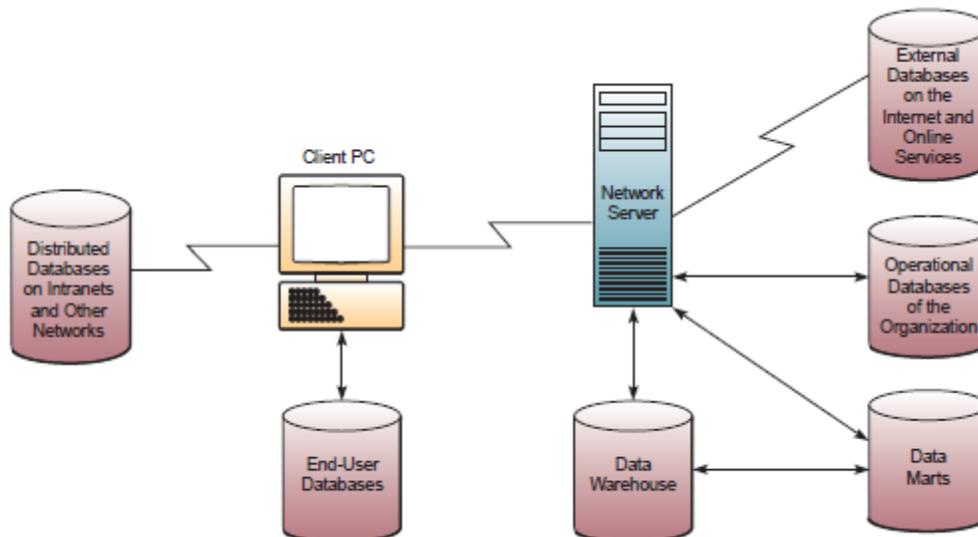
This cooperation allows a business to bring products to market as rapidly and cost-effectively as possible, no matter where resources are located or who owns them. As I mentioned above that we should focus on approaching individual customer requirements therefore we need a good customer corporation not that is enough in this rapidly changing competition, we need to have a good corporation with the suppliers, and other supportive companies. E.g: Dell manufacturers are using Intel processors for their laptops, as well as they should have a good corporation with the competitors. Where we can identify their movements by observing them.

C) **An agile company organizes so that it thrives on change and uncertainty:** It uses flexible organizational structures keyed to the requirements of different and constantly changing customer opportunities.

D) **an agile company leverages the impact of its people and the knowledge they possess:**
By nurturing an entrepreneurial spirit, an agile company provides powerful incentives for employee responsibility, adaptability, and innovation.

02)

a) Many organizations replicate and distribute copies or parts of databases to network servers at a variety of sites. These **distributed databases** can reside on network servers on the World Wide Web, on corporate intranets or extranets, or on other company networks. Distributed databases may be copies of operational or analytical databases, hypermedia or discussion databases, or any other type of database.



Advantages,

- A) One primary advantage of a distributed database lies with the protection of valuable data. If all of an organization's data reside in a single physical location, any catastrophic event like a fire or damage to the media holding the data would result in an equally catastrophic loss of use of that data. By having databases distributed in multiple locations, the negative impact of such an event can be minimized.
- B) Another advantage of distributed databases is found in their storage requirements. Often, a large database system may be distributed into smaller databases based on some logical relationship between the data and the location.
- C) In a distributed database, data can be stored in different systems like personal computers, servers, mainframes, etc. This can be your local network, or outside of your network. Seamlessly you can store whatever the data in a distributed system.

- D) A user doesn't know where the data is located physically. Database presents the data to the user as if it were located locally. This is the power of distributed systems, user does not feel any delay when accessing the data, they feel that data is located physically.
- E) Database can be accessed over different networks. Because these are networked you can access it over any connected network.
- F) Data can be joined and updated from different tables which are located on different machines.
- G) Even if a system fails the integrity of the distributed database is maintained.
- H) A distributed database is secure.

Disadvantages,

A) The primary challenge is the maintenance of data accuracy. If a company distributes its database to multiple locations, any change to the data in one location must somehow be updated in all other locations

B) Another additional challenge is the extra computing power and bandwidth necessary to access multiple databases in multiple locations.

Other Advantages :

- 1) Since the data is accessed from a remote system, performance is reduced.
- 2) Static SQL cannot be used.
- 3) Network traffic is increased in a distributed database.
- 4) Database optimization is difficult in a distributed database.
- 5) Different data formats are used in different systems.
- 6) Different DBMS products are used in different systems which increases in complexity of the system.
- 7) Managing system catalog is a difficult task.

8) While recovering a failed system, the DBMS has to make sure that the recovered system is consistent with other systems.

B)

What is Traditional File Processing?

How would you feel if you were an executive of a company and were told that some information you wanted about your employees was too difficult and too costly to obtain?

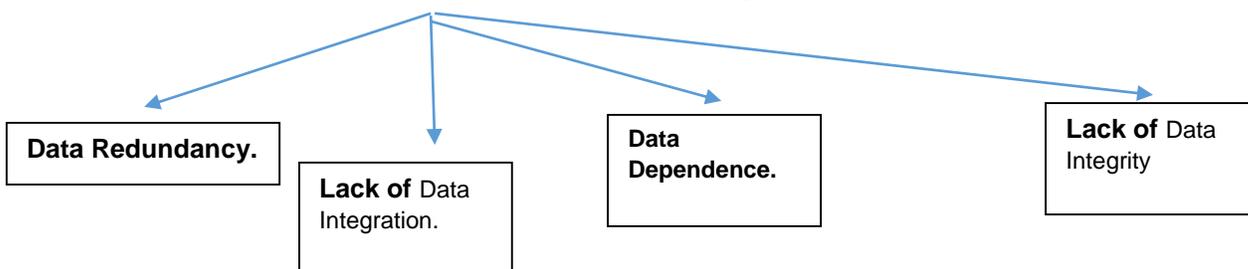
Why?

- I. The information you want is in several different files, each organized in a different way.
- II. Each file has been organized to be used by a different application program, none of which produces the information you want in the form you need.
- III. No application program is available to help get the information you want from these files.

“That’s how end users can be frustrated when an organization relies on file processing “

Our Questions and the answer :

Problems of File Processing: The file processing approach finally became too cumbersome, costly, and inflexible to supply the information needed to manage modern business



Data Redundancy:

Independent data files included a lot of duplicated data; the same data (such as a customer’s name and address) were recorded and stored in several files. This data redundancy caused problems when data had to be updated.

Separate **file maintenance** programs had to be developed and coordinated to ensure that each file was properly updated.

coordination proved difficult in practice so a lot of inconsistency occurred

Lack of Data Integration:

Data integration involves combining data residing in different sources and providing users with a unified view of these data

Having data in independent files made it difficult to provide end users with information for ad hoc requests that required accessing data stored in several different files.

Special computer programs had to be written to retrieve data from each independent file. This retrieval was so difficult, time-consuming, and costly for some organizations

End **users had to extract the required information manually** from the **various reports produced** by each separate application and then **prepare customized reports for management**

Data Dependence :

Application programs typically contained references to the specific *format* of the data stored in the files they used.

Thus, changes in the format and structure of data and records in a file required that changes be made to all of the programs that used that file.

This *program maintenance* effort was a major burden of file processing systems. It proved difficult to do properly, and it resulted in a lot of inconsistency in the data files.

Lack of Data Integrity:

In file processing systems, it was easy for data elements such as stock numbers and customer addresses to be defined differently by different end users and applications.

This divergence caused serious inconsistency problems in the development of programs to access such data.

In addition, the *integrity* (i.e., the accuracy and completeness) of the data was suspect because there was no control over their use and maintenance by authorized end users.

C)

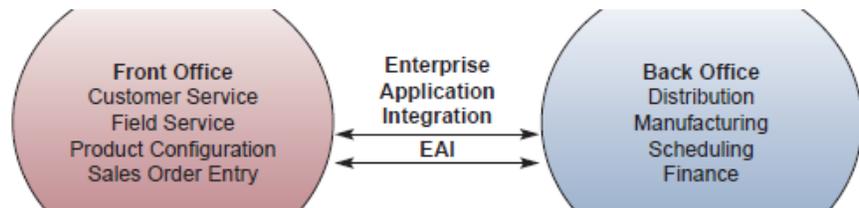
EAI software enables users to model the business processes involved in the interactions that should occur between business applications.

EAI also provides *middleware* that performs data conversion and coordination, application communication and messaging services, and access to the application interfaces involved.

middleware is any software that serves to glue together or mediate between two separate pieces of software.

Just draw the below to explain it in a meaningful manner,

Enterprise application integration software interconnects front-office and back-office applications.



EAI software can integrate a variety of enterprise application clusters by letting them exchange data according to rules derived from the business process models developed by users.

For example, a typical rule might be:

When an order is complete, have the order application tell the accounting system to send a bill and alert shipping to send out the product.

EAI software can integrate the front-office and back-office applications of a business so they work together in a seamless,

EG: the integration of enterprise application clusters has been shown to dramatically improve customer call center responsiveness and effectiveness. That's because EAI integrates access to all of the customer and product data that customer representatives need to quickly serve customers. EAI also streamlines sales order processing so products and services can be delivered faster.

Benefits,

Information Sharing: Enterprise applications enable the flow of information between separate software programs within a company, as well as from outside the company's own computer systems. This can consolidate data collection efforts, eliminating the redundancies of having each application collect and store data for its own purposes. Integration also creates a single point of access to data for the people who need it. That means employees spend less time searching for information – and the data they get is often more complete and up to date.

Process Automation: Enterprise applications can streamline processes that include data or activity from multiple software applications. For example, data from a CRM can be integrated with an e-mail marketing platform to deliver targeted messages to customers based on their prior behavior or demographics. That effort could then be coupled with an analytics package to measure the success of the email campaign.

Reduced IT Complexity: Most enterprise-level companies find it difficult to use new technology effectively. The learning curve is often steep, and a new application may not work well with the systems already in place. Enterprise application integration overcomes these roadblocks to smooth business process by combining the information and functionality of several applications into a single, easy-to-use interface

03)

A)

CRM (customer relationship management) is all aspects of interactions that a company has with its customers, whether it is sales or service-related.

A CRM system provides service reps with software tools and real-time access to the common customer database shared by sales and marketing professionals.

CRM helps customer service managers create, assign, and manage requests for service by customers.

Call center software routes calls to customer support agents based on their skills and authority to handle specific kinds of service requests.

Help desk software helps customer service reps assist customers who are having problems with a product or service by providing relevant service data and suggestions for resolving problems.

Web-based self-service enables customers to access personalized support information easily at the company Web site, while it gives them an option to receive further assistance online or by phone from customer service personnel.

Retention and Loyalty Programs : That's why enhancing and optimizing customer retention and loyalty is a major business strategy and primary objective of customer relationship management.

CRM systems try to help a company identify, reward, and market to their most loyal and profitable customers. CRM analytical software includes data mining tools and other analytical marketing software, while CRM databases may consist of a customer data warehouse and CRM data marts.

These tools are used to identify profitable and loyal customers and to direct and evaluate a company's targeted marketing and relationship marketing programs toward them.

B)

(EDI) was one of the earliest uses of information technology for supply chain management.

EDI involves the electronic exchange of business transaction documents over the Internet and other networks between supply chain trading partners.

Data representing a variety of business transaction documents (such as purchase orders, invoices, requests for quotations, and shipping notices) are automatically exchanged between computers using standard document message formats.

In supply chain management, trading partners need to constantly communicate with each other; the communications are usually recorded within their systems for further processing.

For example, when a supplier receives an order from a customer, he/she replies with the confirmation and/or modifications. This interaction needs to get into the customers' systems so that the production planning can be accurate, and promises to these customers can be made.

This is where EDI comes into the picture. If a company implements EDI for communication with its trading partners (such as its suppliers, logistics providers, warehouse operators, customers, etc.), the supply chain gets integrated electronically to all the users in the system.

what does it take to implement an EDI system? Essentially, what are the components of an EDI system? An EDI system consists of the following processes:

1. Data Conversion
2. Transmission
3. Receiving

Data conversion is the process whereby data, which is present as a different format (e.g. an Excel file), is converted to the EDI standard format. This allows for a constant platform for communication. After this, transmission takes place; transmission is the process whereby the EDI message is communicated to the other parties. Finally, the receiving process takes place. This is where the system receives other EDI messages generated from other members of the party.

Some of the key advantages of EDI include:

- Reduced errors, such as shipping and billing errors, due to eliminating the need to rekey documents on the destination side
- Increased speed
- Faster delivery due to faster information flow

c) **Access Control and Security** : E-commerce processes must **establish mutual trust and secure access** between the **parties in an e-commerce transaction** by **authenticating users, authorizing access,** and enforcing security features.

For example, these processes establish that a customer and e-commerce site are who they say they are through **user names and passwords, encryption keys, or digital certificates and signatures.**

The e-commerce site must then **authorize access to only those parts of the site that an individual user needs to accomplish** his or her particular transactions.

You usually will be **given access to all resources of an e-commerce site** except for other people's accounts, restricted company data, and Web master administration areas.

Companies engaged in B2B e-commerce may rely on secure industry exchanges for procuring goods and services or Web trading portals that allow only registered customers to access trading information and applications.

Other security processes protect the resources of e-commerce sites from threats such as hacker attacks, theft of passwords or credit card numbers, and system failures.

04)

Getting Customers to Find You 😊 :

Just because your Web store has been launched does not mean customers will come flocking to your cyber front door. – Yeah Truee

Your Web store needs to be discovered by your customers, and this means getting listed in the popular search engines.

You can submit your Web site to search engines such as Yahoo, Google, Live, and others, and each will begin looking at your Web pages and listing you when appropriate search terms are entered.

Waiting for your site to show up competitively ranked with all the other similar sites could take weeks and even months.

There is a science to search engine ranking and it is an essential element in Web store success.

Search engine optimization (SEO) is considered a subset of search engine marketing, and it focuses on improving the number and/or quality of visitors to a Web site over “natural (also called “organic” or “algorithmic” search engine) listings.

SEO, as a marketing strategy, can often generate a good return.

Serving Your Customers: Once your retail store is on the Web and receiving visitors, the Web site must help you welcome and serve them personally and efficiently so that they become loyal customers.

So most e-tailers use several Web site tools to create user profiles, customer files, and personal Web pages and promotions that help them develop a one-to-one relationship with their customers.

Managing a Web Store : A Web retail store must be managed as both a business and a Web site, and most e-commerce hosting companies offer software and services to help you do just that