1.1.4. Framework of E-Commerce

Figure 1.1 shows the generic framework of e-commerce.

E-Commerce Applications
- Supply Chain Management,
- Video on Demand
- Remote banking
- Home shopping
- Procurements and purchasing
- Online marketing & advertising

Common Business Services
Infrastructure
(Security/Authentication-Payment,
Directories/Catalogs)

Messaging and Information
Distribution Infrastructure

Multimedia Content and Network
Publishing Infrastructure

Information Superhighway
Infrastructure (Telecom, Cable TV,
Wireless, Internet)

Public Policy Legal and Privacy Issues

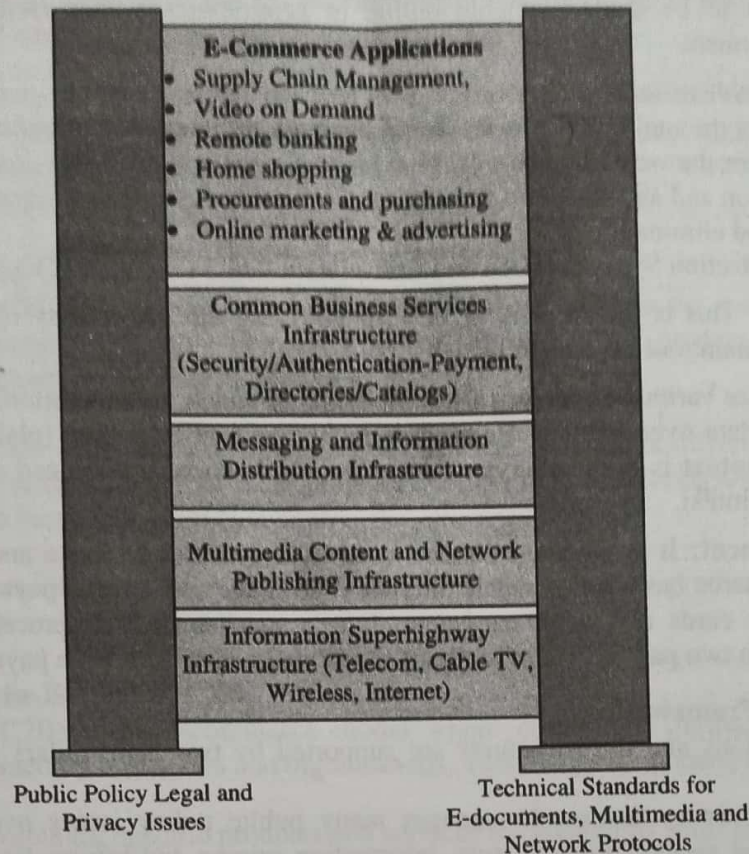Technical Standards for E-documents, Multimedia and Network Protocols

Figure 1.1: Generic Framework of Electronic Commerce

Elements of E-Commerce Framework

1) **Information Super Highway (I-Way):** Information superhighway is the base for transportation which permits transmission of content. It is also known as I-Way.

   The union of content and distribution channels is simplified by the Information Superhighway and it unites organizations which results in vast business as well as cultural growths over Internet.

   As regular commerce needs interstate highway road network to carry goods from one point to another point, similarly I-Way infrastructure is required for any effective e-commerce application or activities. This developing I-way infrastructure comprises of many computers, networks for communication and software required for communication.

2) **Multimedia Content and Network Publishing:** In non-electronic world different kind of products are stored in distribution warehouses and are transported using logistic solutions. Whereas in electronic world content is transmitted over the Internet using World Wide Web (WWW). It is commonly known as Web. It is a system of interlinked documents that are accessed via Internet.

   Through Web, small businesses and individuals can develop content in the form of HTML (Hyper Text Markup Language) and publish it on the web server. Web consists of huge collection of "web pages" of information linked to each other around world. So with the help of web sites, user can create product information and publish it in a distribution centre.

3) **Messaging and Information Distribution:** There are a lot of information distributions and messaging technologies that provides transparent mechanism for transferring information content over network infrastructure layer. This transparent mechanism is accomplished through software systems that implement Hypertext Transfer Protocol (HTTP), File Transfer Protocol (FTP), and Simple Message Transfer Protocol (SMTP) for exchanging multimedia contents such as text, pictures, video, and audio.

4) **Common Business Services:** Common business services infrastructure provides different techniques for facilitating buying and selling process. For successful e-commerce applications, it is required that information sources to be made available online to geographically dispersed clients and working of transactional environment.

Common business services infrastructure consists of four elements:

i) **Security:** This is the major concern for doing business on internet. Strong web site security measures constantly monitor the web site for:
     a) Authentication and authorization activities
     b) Detection and elimination of virus
     c) Intrusion Detection Systems (IDS) and firewalls

ii) **Authentication:** This is the security process of verifying the authenticity of user. **For example,** the password is the main tool for authentication.

iii) **Encryption:** Since various businesses feel vulnerable to attack, so encryption is used to provide secure transmission of data over Internet. Encryption technique translates data (plaintext) into a secret code (ciphertext). **Plaintext** is the unencrypted message. **Ciphertext** is produced after applying encryption function over Plaintext.

iv) **Electronic Payment:** It is payment method used by businesses to make and receive payments over Internet. E-commerce has a lot of viable alternative to make and receive payment such as digital cash, e-cheques, credit cards and debit cards etc. It is a mechanism that processes an online financial exchange between two parties. These methods of normally equal to offline payment methods.

Pillars of E-Commerce Framework

All e-commerce applications and infrastructures are supported by two main pillars as shown in **figure 1.1.** These are as follows:

1) **Public Policy and Privacy Issues:** It manages many public policy issues over the network such as universal access, equal access, privacy, trust, information pricing and information access. Privacy issues includes what information is private and who has right to use Internet information. Legal framework for e-commerce is recognized by related laws and certification authorities.

2) **Technical Standards:** Technical standards provide universal format in which electronic data is transferred over networks and is received across user interfaces. These define the details of user interfaces, information transport protocol and transaction security protocol. These standards are necessary to:
     i) Transfer of data across different networks.
     ii) Ensure compatibility & generalization of different network environments.