TECHNICAL AND SOCIAL ISSUES OF E-commerce

I. TECHNICAL ISSUES

These issues can be broadly classified into four types. They are:

A. Interoperability
B. Security
C. Privacy

A. Interoperability:

- Interoperability is the ability of systems running in different operating environments to communicate and work together.

  E.g., Clients running Windows XP can access Web pages from servers running Linux.

  For the interoperability to work, the same set of rules (protocols) must be followed. Ex: TCP/IP internetworking standards.

B. Security:

Threats to systems are of three types:

1. **Denial of service (DOS):** There are two types of DOS threats. They are:

a. **Spamming:**

i. Sending unsolicited commercial emails to individuals.

ii. E-mail bombing caused by a hacker targeting one computer or network, and sending thousands of email messages to it.

iii. Smurfing (A smurf attack is an exploitation of the Internet Protocol (IP) broadcast addressing to create a denial of service by making it inoperable.

iv. DDOS (distributed denial of service attacks) involves hackers placing software agents onto a number of third-party systems and setting them off to simultaneously send requests to an intended target.

b. **Viruses:** self-replicating computer programs designed to perform unwanted events

i. Worms: special viruses that spread using direct Internet connections

ii. Trojan Horses: disguised as legitimate software and trick users into running the program

2. **Unauthorized access:**

a. Masquerading or spoofing –sending a message that appears to be from someone else.

-Impersonating another user at the "name" (changing the "From" field) or IP levels (changing the source and/or destination IP address of packets in the network).

b. Sniffers–software that illegally access data traversing across the network.

c. Software and operating systems' security holes.

3. **Theft and fraud:**

a. Data theft already discussed under the unauthorized access section.

b. Fraud occurs when the stolen data is used or modified.

c. Theft of software via illegal copying from company's servers.

d. Theft of hardware, specifically laptops.

C. Privacy:

- **1. Threats to data:**
- **i. Data collection:**

a. Faster and easier data collection through online technology.

a. Cross-referencing (aggregation) real offline consumer data with online purchasing habits collected with or without their knowledge. Or cross-referencing online data with other online data between several Web entrepreneurs, for example, hidden data collection without consumer consent, possibly thru cookies, for example

a. **ii. Usage tracking**

a. Patterns of online activity lead to inferences about the user's product preferences for providing customized pop-up ads and referring sites.

b. May include today's spyware. Spyware: a type of program that watches what users do with their computer and then sends that information over the Internet to the spyware'sauthor.

II. SOCIAL ISSUES

1. Telecommunications Infrastructure:
   -Differences in cost of connecting and (cost/income)

2. Access Inequalities:
   -Digital Divide and access to equipment

3. Skills shortage in Information Technology :
   -Workforce shortage (large number of unfilled IT positions).
   - Global movement of IT workers ("brain drain") from developing countries to developed ones for higher salaries.
   - Retaining IT workers in the field (jobs rotations, providing training.