

E-Business Models and E-Business Products

(Chapter # 2)

1. E- Commerce:

Definition:

Word e-commerce (electronic commerce) refers to a variety of different online business activities for products and/or services. Business transactions might include ordering, selecting goods, invoicing and payment. They may also involve the agreement of contracts, the arrangement of the arrangement of delivery, the declaration of tax and after sales service.

Key word in E-commerce is that business is done without any physical exchanges or direct physical contact.

E-Commerce types:

Major types of e-commerce can be categorized:

1. Business to- Consumer (B2C)
2. Business-to-Business (B2B)
3. Consumer-to-Consumer (C2C)
4. Business-to-Government (B2G)
5. Mobile commerce (m-commerce)

1. Business to Consumer (B2C)

“It is commerce between companies and consumers, involves:

- Customers gathering information;
- Purchasing physical goods like books or travel or
- Information goods like downloadable digitized material content, such as software, music or electronic books.”

Example:

As an example from in B2C field is Amazon.com which based on big variety of assortment is closer to a internet shopping mall.

Suitability (Areas of Success):

There has been a great success at least in following areas:

- a) Real estate,
- b) Travelling;
- c) Auctions;
- d) Banking or personal finance management;
- e) Customer support service

Non Suitability (Not Successful Areas):

Not so successful area for B2C is:

- a) Daily groceries;
- b) Other area is items that need “touch or trial” like clothes or luxury items

Disadvantages of B2C:

i. Security Concerns:

When you enter your credit card and personal information on vendor's website, you have no control on where that information is going, also threat of hackers to get your personal information is also growing.

ii. Relationship between seller and distribution channels:

iii. What you see is sometimes NOT what you get:

Goods such as books, and electronic items can be safely purchased through internet, but other goods such as perfumes or clothes may be little trickier to acquire without sampling.

iv. Logistics, shipping, Distribution and delivery Challenges:

These challenges sometimes produce very disappointing results. The challenges associated with logistics become even more complicated because there are so many intermediaries involved in B2C i.e. if a customer in Pakistan buy a product from placing a order in Finland website, and product may be required from distributor in USA then you can imagine the challenges.

2. Business 2 Business (B2B)

B2B area is nowadays growing much faster than B2C and about 80% of the ecommerce is this type. B2B e-commerce is simply e-commerce between two or more companies/Businesses.

Main focus in B2B is on procurement.

B2B Vs B2C:

There are two distinct aspects of B2B e-commerce that separate it from the more familiar business-to-consumer (B2C):

- Flexibility in pricing;
- Integration of business systems;

Difference between Traditional Business Transaction and B2B:

The major differences are the “target audience” and “level of sophistication of tools” that are used in doing business. Other differences are:

- a) All the transactions are **carried out electronically** through internet without having to leave physically;
- b) **Paperless transactions** are hallmark of E-Commerce, whereas “paper trails” are key in traditional business transactions;
- c) B2B **significantly reduces cycle time** between transacting parties;
- d) Paper based commerce **isolates the system and procedures** of business partners, B2B integrates them closely.

Advantages and Disadvantages:

i. Security Concerns:

When you enter your credit card and personal information on vendor's website, you have no control on where that information is going, also threat viruses and hackers attack often overshadow the success of B2B transactions.

ii. Logistics, shipping, Distribution and delivery Challenges:

These challenges sometimes produce very disappointing results. The challenges associated with logistics become even more complicated if a company in Pakistan buy a product from placing an order in Finland website, and product may be required from distributor in USA then you can imagine the challenges.

3. Business to Employees (B2E)

B2E e-commerce is simply e-commerce where employees work from home or field office, over the internet to access their company's system for sharing information and knowledge remotely and conducting transactions between head office and factory.

Example:

Classical example is "employee self administered benefit schemes" where employees are granted secure access from home to maintain and monitor their benefits, such as medical benefits and pension plans.

4. Consumer to Consumer (C2C)

Consumer-to-consumer (C2C) e-commerce occurs between private individuals or consumers.

Examples:

Examples of C2C e-commerce are:

- a) **Auctions portals, such as eBay**, which allows online real-time bidding on items being sold in the Web;
- b) **Peer-to-peer systems, such as the Kazaa or Napster model** where private individual share files containing different kind of data. In Finland it is illegal to share any kind of copyrighted material in peer to networks;
- c) Common Chat rooms are also good example of C2C interaction

Advantages:

a) Cost and Time saving:

Communication through traditional means is expensive and time consuming . Internet through C2C models has allowed cheap, swift and effective communication options for consumers.

b) Consumer Choice:

When being made aware of the good and bad about the particular product through diverse set of views and opinions that are expressed, consumers are being able to exercise greater degree of freedom in their choices of purchasing or not purchasing the particular product.

c) Suppliers' opportunities:

It offers supplier a great opportunity to reach a diverse audience. Such sites not only home to "existing clients" but also house to "new customers".

5. Government to Citizen (G2C)

Government to Citizen (G2C) e-commerce is the transactions taken place between government agencies and its citizens as well as with outsiders.

Examples of Pakistani G2C Transactions:

- a) Central Board of Revenue (www.cbr.gov.pk): serves as an important link between public and Government to provide useful information on taxation and related matters.
- b) Government of Pakistan (www.pak.gov.pk): provide useful information to its citizens.
- c) Tourism Development Corporation (www.tourism.gov.pk): provide important information to its citizens and tourists across the world about tourism opportunities in Pakistan.

Challenges in implementing Successful G2C strategies in Pakistan:

1. Cheap and Secure Access:

One of the biggest challenges is the availability of **“cheap and secure access”** to Government sites. Unless citizens do not have confidence that accessing the site is

- Secure; and
- Their private information will not be compromised

G2C transaction in Pakistan will not expand into more serious areas of Government E-commerce.

2. Equal Access:

Another challenge faced by Pakistan is social one. Government should assure that access is available to all classes of citizens. If access is available only to citizens of certain cities like Islamabad, Lahore and Karachi, it will create an even greater wedge between these cities and the rest of the country.

2. E - PAYMENT MODES:

Popular e-payment modes are described below:

1. E-cash;
2. Smart card e-payments;
3. Electronic purse/ e-wallets;
4. Credit cards;
5. Cyber cash;
6. Digicash;
7. E-money.

1. E-cash: (Product = online cash)

Various products have been developed which are online equivalents to cash by utilizing public key cryptography. The banking industry was the greatest barrier as there was no general acceptance of this as valid currency.

2. Smart card e-payment: (Online purse built with microchip and can be reloaded at any time)

Smart cards, similar to phone cards, are built with microchips as an **“Online Purse”** to store money. They are best suited for smaller value transactions and can be reloaded at any time from banking machines or proprietary systems.

3. **Electronic purse/ e-wallets:** (Vendor specific and restrict consumer choice of shopping)

Electronic purse or e-wallets, developed by several vendors, are vendor specific and are suitable for smaller transactions. As consumer purchased smaller value transactions the amount was deducted from the purse automatically. It can be reloaded at any time with value as required but it restrict the consumer choice from where they could shop.

4. **Credit cards:**

The most popular e-payment mode is the credit cards best suits for larger value transactions. Traditional credit cards such as:

- Master card;
- Visa; and
- American Express

have been accepted as most common way to purchase online goods.

The main challenges are that these:

- are not suitable for smaller transactions; and
- issues of authorization and security.

5. **Cyber cash:**

Net search for better material

6. **Digi-cash:** (differ from other in internet payment method as it uses coin based system backed by gold)

Digi-cash, an advanced electronic payment mechanism for both open and closed network systems, is different from any other services because of internet payment method.

It usually uses a coin based system that is backed by gold or dollar or other strong currency and is issued to consumer by minting bank. Consumer spent the money as he wishes, but the minting bank cannot track purchases.

7. **E-cash/e-money:**

“e-money or digital money is used to describe various online payment services such as:

- Cyber cash; or
- Digi-cash.

Currently little volume is done via these modes of payment.

i. **How e-money backed:**

It usually uses a coin based system that is backed by gold or dollar or other strong currency and is issued to consumer by minting bank. Consumer spent the money as he wishes, but the minting bank cannot track purchases.

ii. **Why e-money used:**

- Bank issues e-money as it is much **“Cheaper”** than traditional dollars and cheques;
- Consumer find e-cash as much **“Cheaper and more private”** than credit cards;
- It is more **“convenient and flexible”** than traditional money.

iii. **Risks of e-money:**

- Criminals creating their own “mints” of e-cash which could potentially be indistinguishable from real dollar;
- Tax evasion and money laundering.

iv. E-cash internet payment process

(Similar to E-PAYMENT process – refer to MRS notes)

3. E – Commerce Related Technologies:

1. Internet
 2. Intranet
 3. Extranet
 4. Value Added Network
 5. Electronic Data Interchange (EDI)
 6. Electronic Fund Transfer (EFT)
 7. Electronic Catalogs
 8. Bar Codes
 9. Technical Data Interchange
 10. Legacy Data Management (LDM)
- } <Refer it to Chapter 12 – Networking Portion>
- } < Refer it to MRS Notes>

7. Electronic Catalogs:

Electronic catalog provides information about product announcement, special sales and inventory status, and can contain full specification about each product listed. Moreover, Electronic catalog:

- a) Can be **available** to existing and potential customers all the time 24/7;
- b) Can give company **access to global markets** without reporting a physical presence;
- c) Can facilitate **better customer’s services**.

From supplier’s point of view, putting product line in to electronic catalog on WWW can save enormous amount of money in respect of developing, printing, and distribution cost.

8. Bar Codes:

Bar codes, an automatic identification technology, are machine readable symbols. They can be read into any computer system that can import any pre-printed data

Uses:

They can be used in many production and inventory environment. Some of its uses are as follows:

- i. Material handling;
- ii. Monitoring Work-in-progress (WIP);
- iii. Point-of-sale record keeping;
- iv. Assembly verification;
- v. Shipping and receiving;
- vi. Document tracking;
- vii. Air-line baggage sorting;
- viii. Employee ID cards.

9. Technical Data Interchange (TDI)

TDI refers to standard electronic processes used in the exchange of technical information, drawings, manuals and specifications. It enables secure reliable communication.

Benefits:

- i. It makes it easier for designers and manufacturing engineers to **collaborate on projects**;
- ii. It **accelerates design cycle** and reduces errors;
- iii. It **reduces procurement cycle** and improve quality;
- iv. It uses **computer analysis for components** and manufacturing process thus reduces several types of production problems;
- v. It creates opportunities for **better customers support**.

10. Legacy Data Management (LDM):

LDM is a process and methodologies developed to maintain, track, store and use the large volume of data generated by business in cost effective manner.

Benefits:

- i. Cost savings;
- ii. Occupies less storage space;
- iii. Enhanced data consistency;
- iv. Increased data availability;
- v. Minimal data loss;
- vi. Performing system need analysis;
- vii. Performing cost benefit analysis;
- viii. Developing a conversion plan.

4. E – Commerce Security:

E- Commerce security depends upon the following

- 1. Security
- 2. Authenticity
- 3. Privacy
- 4. Recourse

TECHNOLOGIES MAKING E-COMMERCE SAFE

1. SECURE SOCKET LAYER (SSL)/ TRANSPORT LAYER SECURITY (TLS)

- a) It is cryptographic protocol;
- b) SSL protocols encodes the whole session among computers and provides the safe communication service on internet and is widely used in e-commerce transactions;
- c) For online communications SSL allows traffic b/w a web server and its clients (like web browser) to be strongly encrypted, using the public key technology.
- d) When compared with SET Protocol for online electronic transactions, the major disadvantage of SSL is that it cannot prevent personal information being stolen. Further, merchant can examine or temper this information.

2. SECURE ELECTRONIC TRANSACTIONS (SET)

- a) SET Protocols ensures that your entire credit card number is never travelling across the internet, rather this information is transmitted in pieces and that no human eyed sees the entire credit card number.
- b) SET is a common secure e-commerce payment protocol where five parties are involved in the process; namely
 - o Customer
 - o Seller
 - o Payment Gateway
 - o Certificate Authority
 - o Issuer
- c) It is not recommended for micropayment because it is consider being time consuming because of several parties involved. Besides all parties may have to authenticate themselves, for security reasons, introducing more penalties performance wise.

3. AUTHENTICATION

It is a process where a computer system can determine whether a person is who he claims to be. Its criteria can be narrowed down to three sources

- a) Something known—e.g., a password.
- b) Something possessed—e.g., an ID badge.
- c) Something inherent—e.g., an individual's hand, face, voice, eyes, or any other measurable physical attribute that is unique to that person

4. CRYPTOGRAPHY

- a) Converting scrambling plain text (often referred to as ordinary text or clear text) in to cipher text (encrypted or scrambled text) and vice versa.
- b) Text is encrypted by passing through a unique algorithm to disguise the data.
- c) The objective of it is to ensure confidentiality, integrity and non-repudiation and authentication.

5. PUBLIC KEY CRYPTOGRAPHY

- a) It comes in pairs: a private key, which is only known to the owner and a public key which is made widely available.
- b) Whatever a private key encrypts the corresponding public key can decrypt and vice versa.
- c) Banks and its client use it for secure payment transaction

5. E – Commerce Planning Checklist:

Planning is an integral part of any successful venture. To help achieve your e-commerce goals following checklist should be considered:

1. Planning: (Factors need to be considered)

- 1. What **advantages** will your company gain from becoming accessible on web?
- 2. What **disadvantages** will your company encounter from becoming accessible on web?

3. How will you **overcome those disadvantages**?
 4. Who is your e-commerce **target market**?
 5. How does your electronic business **compare with** your traditional business?
2. **Setup:** (Factors need to be considered)
1. Have you secured a **registered domain** name for your online business?
 2. What **hardware** do you plan to use?
 3. What **software** do you plan to use?
 4. What **type of communication services** do you plan to use?
3. **Advertising and promotions:** (Factors need to be considered)
1. How will you **generate demand** for your product and services?
 2. Will you incorporate some form of **push - technology** to keep your customer informed?
4. **Customer services and support:** (Factors need to be considered)
1. What **payment options** will you offer: Credit cards, PayPal, electronic funds etc?
 2. How will you **support** your website customers?
 3. How will you **process** orders?
 4. How will you **fulfill** orders?
 5. How will you **process** payments?
5. **Security:** (Factors need to be considered)
1. What **type of security** your e-commerce website uses?
 2. How your e-commerce business **provides secure shopping** for customers?
 3. How will you **convince customers** that your site is secure?
 4. Will your e-commerce business **uses Secure Socket Layer (SSL)**?
 5. Have you obtained **digital certificate (DC)** for your e-commerce business?
 6. Will your business **uses Secure Electronic Transactions (SET)**?
 7. Will your business **uses electronic data interchange (EDI)** for security?
 8. Will your business follow **Open Buying on Internet (OBI)** standards?
6. **Legal Issues:** (Factors need to be considered)
1. What **legal issues will your e-commerce business encounter**? Do they include copyrights, trademark or patent concerns?
 2. What **privacy and confidentiality concerns** will exist for your business?
7. **Globalization:** (Factors need to be considered)
1. Do you need to establish your **website in several languages**?
 2. Will you **accept payments in currencies** other than US Dollars?
 3. Will you offer **import and export assistance**?

Additional Content from PBP (only differences)

1. THREE PILARS OF E-COMMERCE

- 1) Electronic information – available application packages
- 2) Electronic relationships – website portal – attract visitors
- 3) Electronic transactions – Secure – Available Service – Integrity

2. WHERE ARE BUSINESSES EMPLOYING E-COMMERCE SOLUTIONS?

- 1) Corporate purchasing
- 2) Marketing and promotions
- 3) Brand management and awareness
- 4) Brand management made easy
- 5) Advertising e-mail
- 6) Making first impression in cyber space as it counts
- 7) Inventory management for global entities
- 8) Supply chain management
- 9) Customer relationship management
- 10) Sales force automation
 - o Customer billing and payment
 - o Online help desk

3. HOW ARE ORGANIZATIONS USING THEIR E-COMMERCE SITES?

- 1) Product catalogue and online buying
- 2) Purchase orders/ order entry
- 3) Logistics control
- 4) Customer service
- 5) Call centers

4. COMMON MISCONCEPTION ABOUT E-COMMERCE (MYTHS)

- 1) It's cheap, easy and lucrative
- 2) Everyone is doing it - Customers are buying the web
- 3) Middleman are eliminated
- 4) All products becomes commodities and playing field is level
- 5) Brand building is easy on the web

5. WHAT ARE REQUIREMENTS FOR SETTING UP E-BUSINESS?

- 1) Telecommunication infrastructure
- 2) Hardware
- 3) Software
- 4) Services
- 5) An SSL (Secure Socket Layer) certificate
- 6) Transaction processing
- 7) Order fulfillment
- 8) Customer registration
- 9) Feedback mechanism
- 10) Promotion and maintenance
- 4) More competitive prices and increased price

6. WHAT IS DIFFERENT ABOUT INTERNET AND E-COMMERCE?

1. Interact directly with their customers
2. Global in its operations
3. New economies of information
4. Almost incredible level of speed
5. New networks of communication
6. Appearance of new intermediaries and disappearance of existing ones
7. New business partnerships
8. Promotes transparent pricing
9. Facilitates personalized attention
10. Sophisticated market segmentation opportunities
11. Can be either a supplementary or complementary channel
12. Dynamic pricing

7. KEY STEPS TO CONSTRUCT EFFECTIVE E-COMMERCE STRATEGY

1. Upgrade customer interaction
2. Understand customer segments
3. Understand service processes
4. Define the role
5. Decide technology
6. Deal with the tidal wave
7. Create incentives
8. Decide on channel choices
9. Exploit the internet
10. Implement

WHEN DEVELOPING AN E-COMMERCE STRATEGY CONSIDER

- a) Organization culture
- b) Systems and infrastructure
- c) Training
- d) Looking to the customers

8. POTENTIAL BENEFITS OF E-COMMERCE FOR BUSINESSES

- 1) Internet and web based e-commerce
 - a. Is more affordable than traditional EDI
 - b. Allows more business partners to be reached
 - c. Can reach more dispersed geographical customer base
- 2) Procurement processing cost can be lowered
- 3) Cost of purchases can be lowered
- 4) Reduction in inventories
- 5) Lower cycle times
- 6) Better customer service
- 7) Lower sales and marketing cost

POTENTIAL BENEFITS OF E-COMMERCE FOR CONSUMERS

- 1) Increased choice of vendors and products
- 2) Convenience from shopping at home or office
- 3) Greater amount of information that can be assessed on demand

comparison capabilities

- 5) Greater customization in the delivery of services

9. ELECTRONIC DATA INTERCHANGE (EDI)

- 1) Electronic data interchange (EDI) is one of the first e-commerce applications in use between business partners for transmitting business transactions between organizations with dissimilar computer systems.
- 2) It involves the exchange and transmittal of business documents, such as invoices, purchase orders and shipping notices, in a standard, machine-processable format.
- 3) The transmission use standard formats, such as specific record types and field definitions. The process works by data from a business application translated into a standard format, transmitted over communication lines to a trading partner, and re-translated by the trading partner's application.

EDI BENIFITS

- 1) reduced order transit time delays
- 2) reduced labour cost associated with re-keying data
- 3) reduced or eliminate data errors
- 4) improved customer service
- 5) reduced inefficiencies associated with paper handing (filing, copying archiving)
- 6) reduced working capital and inventory
- 7) improved trading relationships
- 8) faster response time from suppliers
- 9) reduced recurrent expenditure
- 10) improved organizational effectiveness
- 11) reduced supplier cost through improved tendering process

MANAGEMENT CONCERNS FOR EDI

- 1) Strategic implications of EDI (why get into EDI)
- 2) Implementation strategy (how one resolves the structural change in implementing EDI)
- 3) Competitive advantage (how one can take some competitive advantage in implementing EDI)

EDI RISK FACTORS

- 1) Unauthorized Intruder Accessing Information.
 - a. Hacker accessing the system.
 - b. Interception during transmission.
 - c. Wiretapping
- 2) Loss of Data Integrity.
 - a. Intruder modifying/fabricating.

- b. Absence of paper audit trail.
- c. Physical signatures are missing.
- d. Errors introduced in the system.
- e. Corruption by authorized personnel.

- 3) Lack of Transaction Completeness.
 - a. Loss of transaction during transmission.
 - b. Duplication of transaction due to retransmission.
- 4) Unavailability of EDI system.
 - a. Logical causes, such as virus, trojan horses, programming errors, hardware and software errors.
 - b. Natural causes, such as fire, flood, earthquake, power failure, etc.
 - c. Sabotage by authorized person.
- 5) Inability to transmit transactions
- 6) Lack of legal guidance

EDI CONTROL ACTIVITIES

1. Access Control.

- a. Password; dial-back mechanisms; user ID; storage lockout; different levels of access.
- b. Improving cable protection; routing message through secured medium; fiber optics; encryption; traffic padding; confidential electronic envelope. Signal meters; leakage protectors; Electromagnetic shielding; penetration resistant conduits.

2. Authentication.

- a. Acknowledgment protocol. Computerized log. Digital signatures; notarization mechanisms. Edit checks. Separation of duties; different levels of access.

3. Acknowledgment.

- a. Batch totaling; sequential numbering.
- b. One-for-one checking against the control file.

4. Fault tolerant systems.

- a. Anti-virus packages; error free software and hardware.
- b. Off-site backup; RAID; disk mirroring
- c. Training; dissemination of procedure and policies on control.
- d. Structured/standardized data format; adherence to ANSI/EDIFACT protocol.
- e. Agreement on legal definitions, responsibilities, and obligations.

