CHAPTER 3

E-COMMERCE APPLICATIONS IN INDUSTRIAL SUPPLY CHAIN MANAGEMENT

3.1 INTRODUCTION

Electronic commerce, commonly known as E-Commerce, is a type of industry where buying and selling of product or service is conducted over electronic systems such as the Internet and other computer networks. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction’s life cycle, although it may encompass a wider range of technologies such as E-mail, mobile devices social media, and telephones as well.

E-Commerce can be divided into:

- E-tailing or virtual storefronts on websites with online catalogue, sometimes gathered into a virtual mall.
- The gathering and use of demographic data through Web contacts and social media.
- Electronic Data Interchange (EDI), the Business-to-Business exchange of data.
E-mail and fax and their use as media for reaching prospective and established customers (for example, with newsletters).

Business-to-Business buying and selling.

The security of business transactions.

Suite Commerce, Net Suite’s ecommerce platform, enables retailers to manage transactions regardless of customer touch point (brick-and-mortar stores, online, smart phones, tablets and call centers). Providing an advanced web store that’s deeply integrated with Net Suite’s powerful financials, CRM, inventory, order and warehouse management software suite, Suite Commerce is designed to address the limitations and complexity of first generation ecommerce systems, enabling businesses to streamline processes, grow relationships and immerse customers in a personalized, richly interactive and instinctive online shopping experience, all with the benefit of a single, unified business application to help you reach more potential customers, sell more products, efficiently and accurately fulfill orders, and drive customer satisfaction across multiple channels and international regions.

E-Commerce technology is increasingly attracting the attention of researchers and managers in the 21st century. Despite this keen interest, the literature on E-Commerce remains fragmented and ambiguous. Furthermore, an in depth literature review shows that only few studies have examined major competencies in E-Commerce that are relevant to the field of operations management. Analysis of E-Commerce issues in operations management will aid understanding and improvement of the challenges faced by organizations. In addition, firms will be able to formulate strategies and invest resources appropriately, when the specific factors that enhance manufacturing and service performance are determined. Moreover, knowledge of E-Commerce issues is pertinent to achieving competitive
advantage in an ever changing economy. Hence, the objective of this study is to highlight the potential E-Commerce research themes within the realm of operations management. This article reviews relevant literature on E-Commerce in manufacturing and service operations. Employing focus group methodology, this paper also identifies pertinent research questions that are suitable for further conceptual modeling and empirical testing.

Even today, some considerable time after the so called ‘dot com/Internet revolution’. Electronic commerce (E-Commerce) remains a relatively new, emerging and constantly changing area of business management and information technology. There has been and continues to be much publicity and discussion about E-Commerce. Library catalogues and shelves are filled with books and articles on the subject. However, there remains a sense of confusion, suspicion and misunderstanding surrounding the area, which has been exacerbated by the different contexts in which electronic commerce is used, coupled with the myriad related buzzwords and acronyms.

It was not until the late 1970s that work began for national Electronic Data Interchange (EDI) standards, which developed well into the early 1990s. EDI is the Electronic transfer of a standardized business transaction between a sender and receiver computer, over some kind of private network or Value Added Network (VAN). Both sides would have to have the same application software and the data would be exchanged in an extremely rigorous format. In sectors such as retail, automotive, defense and heavy manufacturing, EDI was developed to integrate information across larger parts of an organization’s value chain from design to maintenance so that manufacturers could share information with designers, maintenance and other partners and stakeholders. Before the widespread uptake and commercial use of the Internet, the EDI system was very expensive to run
mainly because of the high cost of the private networks. Thus, uptake was limited largely to cash-rich multinational corporations using their financial strength to pressure and persuade (with subsidies) smaller suppliers to implement EDI systems, often at a very high cost. By 1996 no more than 50,000 companies in Europe and 44,000 in the USA were using EDI, representing less than 1% of the total number of companies in each of the respective continents. According to Zwass, electronic commerce has been redefined by the dynamics of the Internet and traditional E-Commerce is rapidly moving to the Internet.

3.2 DEFINITIONS

Electronic commerce or E-Commerce refers to a wide range of online business activities for products and services. It also pertains to any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact (Belgrade, Serbia).

E-Commerce is usually associated with buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network (Thomas L. Mesenbourj).

E-Commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals (Emmanuel Lallana, Rudy Quimbo, Zorayda Ruth Andam).

E-Commerce (electronic-commerce) refers to business over the Internet. Web sites such as Amazon.com, Buy.com, and eBay are all E-Commerce sites. The two major forms of E-Commerce are Business-to-
Consumer (B2C) and Business-to-Business (B2B). While companies like Amazon.com cater mostly to consumers, other companies provide goods and services exclusively to other businesses. The terms E-Business and e-tailing are often used synonymously with E-Commerce. They refer to the same idea; they are just used to confuse people trying to learn computer terms (Michael Aldrich).

3.3 E-COMMERCE ESTIMATION

International Data Corp (IDC) estimates the value of global E-Commerce in 2000 at US$350.38 billion. This is projected to climb to as high as US$3.14 trillion by 2004.

Three primary processes are enhanced in E-Business:

1. **Production processes**, which include procurement, ordering and replenishment of stocks; processing of payments; electronic links with suppliers; and production control processes, among others;

2. **Customer-focused processes**, which include promotional and marketing efforts, selling over the Internet, processing of customers’ purchase orders and payments, and customer support, among others; and

3. **Internal management processes**, which include employee services, training, internal information-sharing, video-conferencing, and recruiting. Electronic applications enhance information flow between production and sales forces to improve sales force productivity. Workgroup communications and electronic publishing of internal business information are likewise made more efficient.
### Table 3.1 Internet Economy Conceptual Frame

<table>
<thead>
<tr>
<th>Internet Economy Layer</th>
<th>Types of Companies</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer 1 - Internet Infrastructure</td>
<td>Networking hardware/software company’s line acceleration hardware manufacturers PC and server manufacturer’s internet backbone provider’s internet service provider’s security vendor’s fiber optics makers.</td>
<td>Cisco, AOL, AT&amp;Y, Qwest</td>
</tr>
<tr>
<td>Layer 2 – Internet Application Infrastructure</td>
<td>Internet commerce applications web development software internet consultants online training search engine software web enabled databases multimedia applications</td>
<td>Adobe, Microsoft, IBM, Oracle</td>
</tr>
<tr>
<td>Layer 3- Internet intermediaries: companies that link E-Commerce buyers and sellers: companies that provide net content: companies that provide marketplaces in which E-Commerce transactions can occur</td>
<td>Market makers in vertical industries Online travel agents online brokerages online advertisers internet Ad brokers portals/content providers.</td>
<td>e-STEEL, Travelocity, e-trade, Yahoo, ZDNet</td>
</tr>
<tr>
<td>Layer 4-Internet commerce: companies that sell products or services directly to consumers or businesses</td>
<td>E-Tailers Online entertainment and professional services manufacturers selling online airlines selling online tickets Fees subscription based companies.</td>
<td>Amazon.com, DELL</td>
</tr>
</tbody>
</table>

Source: http://www.internetindicators.com
3.4 DIFFERENT TYPES OF E-COMMERCE

- Business-to-Business (B2B);
- Business-to-Consumer (B2C);
- Business-to-Government (B2G);
- Consumer-to-Consumer (C2C); and
- Mobile commerce (M-commerce).

3.4.1 B2B E-Commerce

B2B E-Commerce is simply defined as E-Commerce between companies. This is the type of E-Commerce that deals with relationships between and among businesses. About 80% of E-Commerce is of this type, and most experts predict that B2B E-Commerce will continue to grow faster than the B2C segment. The B2B market has two primary components: E-infrastructure and E-markets. E-infrastructure is the architecture of B2B, primarily consisting of the following:

- Logistics transportation, warehousing and distribution (e.g., Procter and Gamble);

- Application service providers deployment, hosting and management of packaged software from a central facility (e.g., Oracle and Link share);

- Outsourcing of functions in the process of E-Commerce, such as Web hosting, security and customer care solutions (e.g., outsourcing providers such as E-Share, Net Sales, I XL Enterprises and Universal Access);

- Auction solutions software for the operation and maintenance of real time auctions in the Internet (e.g., Moai Technologies and Open Site Technologies);
- Content management software for the facilitation of Web site content management and delivery (e.g., Interwoven and Procure Net); and

- Web based commerce enablers (e.g., Commerce One, browser based, XML enabled purchasing automation software).

E-markets are simply defined as Web sites where buyers and sellers interact with each other and conduct transactions. The more common B2B examples and best practice models are IBM, Hewlett Packard (HP), Cisco and Dell. Cisco, for instance, receives over 90% of its product orders over the Internet. Most B2B applications are in the areas of supplier management (especially purchase order processing), inventory management, distribution management (especially in the transmission of shipping documents), channel management, and payment management. E-Marketer projects an increase in the share of B2B E-Commerce in total global E-Commerce from 79.2% in 2000 to 87% in 2004 and a consequent decrease in the share of B2C E-Commerce from 20.8% in 2011 to only 13% in 2012.

3.4.2 B2C E-Commerce

Business-to-Consumer E-Commerce, or B2C or commerce between companies and consumers, involves customers gathering information; purchasing physical goods or information goods (or goods of electronic material or digitized content, such as software, or e-books); and, for information goods, receiving products over an electronic network. It is the second largest and the earliest form of E-Commerce.

3.4.3 B2G E-Commerce

Business-to-Government E-Commerce or B2G is generally defined as commerce between companies and the public sector. It refers to the use of the Internet for public procurement, licensing procedures, and other Government related operations. This kind of E-Commerce has two features: first, the public sector assumes a pilot/leading role in establishing E-Commerce; and second, it is assumed that the public sector has the greatest need for making its procurement system more effective. A web based purchasing policy increases the transparency of the procurement process and reduces the risk of irregularities. To date, however, the size of the B2G E-Commerce market as a component of total E-Commerce is insignificant, as Government e-procurement systems remain undeveloped.

3.4.4 C2C E-Commerce

Consumer-to-Consumer or C2C is simply commerce between private individuals or consumers. This type of E-Commerce is characterized by the growth of electronic marketplaces and online auctions, particularly in vertical industries where firms/businesses can bid for what they want from among multiple suppliers. It perhaps has the greatest potential for developing new markets.
This type of E-Commerce comes in at least three forms:

- Auctions facilitated at a portal, such as e-Bay, which allows online real-time bidding on items being sold in the Web;
- Peer-to-Peer systems, such as the Napster model (a protocol for sharing files between users used by chat forums similar to IRC) and other file exchange and later money exchange models; and
- Classified advertisements at portal sites such as Excite Classifieds and E-Wanted, Pakwheels.com (an interactive, online marketplace where buyers and sellers can negotiate and which features “Buyer Leads and Want Ads”).

Consumer-to-Business (C2B) transactions involve reverse auctions, which empower the consumer to drive transactions. A concrete example of this when competing airlines gives a traveler best travel and ticket offers in response to the traveler’s post that she wants to fly from New York to San Francisco. There is little information on the relative size of global C2C E-Commerce. However, C2C figures of popular C2C sites such as eBay and Napster indicate that this market is quite large. These sites produce millions of dollars in sales every day.

3.4.5 M-Commerce

M-commerce (Mobile commerce) is the buying and selling of goods and services through wireless technology i.e., handheld devices such as cellular telephones and Personal Digital Assistants (PDAs). Japan is seen as a global leader in M-commerce. As content delivery over wireless devices becomes faster, more secure, and scalable, some believe that M-commerce will surpass wire line E-Commerce as the method of choice for digital
commerce transactions. This may well be true for the Asia Pacific where there are more mobile phone users than there are Internet users.

Industries affected by M-commerce include:

- **Financial services**, including mobile banking (when customers use their handheld devices to access their accounts and pay their bills), as well as brokerage services (in which stock quotes can be displayed and trading conducted from the same handheld device);

- **Telecommunications**, in which service changes, bill payment and account reviews can all be conducted from the same handheld device;

- **Service/retail**, as consumers are given the ability to place and pay for orders on the fly; and

- **Information services**, which include the delivery of entertainment, financial news, sports figures and traffic updates to a single mobile device.

### 3.5 E-COMMERCE WORLD OVERVIEW

B2C ecommerce sales grew 21.1% to top $1 trillion for the first time in 2012, according to E-Marketer. In 2013, sales will grow 18.3% to $1.298 trillion worldwide, E-Marketer estimates, as Asia Pacific surpasses North America to become the world’s number one market for B2C ecommerce sales.

B2C E-Commerce sales share worldwide, by region, 2013:

- Asia-Pacific: 33.4%, to grow to 39.7% by 2016
- North America: 31.5%, to go down to 28.2% by 2016
- Western Europe: 25.7%, to go down to 22.6% by 2016
- Eastern Europe: 3.9%, to go down to 2.7 by 2016
- Latin America: 3.5%, to remain unchanged by 2016
- Middle East and Africa: 2.1%, to grow to 2.3% by 2016

Top 5 countries, ranked by B2C E-Commerce sales, 2013:

1. US: $384.80 billion
2. China: $181.62 billion
3. UK: $141.53 billion
4. Japan: $140.35 billion
5. Germany: $53.00 billion

The rapid growth in Asia Pacific sales is a result of several factors. Three Asia Pacific markets (China, India and Indonesia) will see faster B2C ecommerce sales growth than all other markets worldwide this year, while Japan will continue to take a large share of global sales. China, unsurprisingly, is the primary driver of growth in the region. The country will surpass Japan as the world’s second-largest B2C ecommerce market this year, taking an estimated 14% share of global sales, as its total reaches $181.62 billion, up 65% from $110.04 billion in 2012. The US will remain the single country with the largest share of worldwide B2C ecommerce spending, at 29.6% in 2013, down from 31.5% in 2012 despite relatively strong growth. This will continue throughout the forecast period, though China is closing the gap fast. In 2016, China will have 22.6% of the worldwide market, vs. 26.5% in the US. China also boasts the highest number of people who buy goods online in the world (nearly 220 million in 2012), according to E-Marketer, a result of increasing internet penetration; a burgeoning middle class with growing trust in online shopping; Government-driven campaigns to promote
consumerism; as well as improved infrastructure, product selection and services offered by online sellers and retailers.

3.5.1 Components of a Typical Successful E-Commerce Transaction Loop

E-Commerce does not refer merely to a firm putting up a Web site for the purpose of selling goods to buyers over the Internet. For E-Commerce to be a competitive alternative to traditional commercial transactions and for a firm to maximize the benefits of E-Commerce, a number of technical as well as enabling issues have to be considered. The seller should have the following components, a corporate Web site with E-Commerce capabilities (e.g., a secure transaction server), a corporate intranet so that orders are processed in an efficient manner; and IT literate employees to manage the information flows and maintain the E-Commerce system.

3.5.2 Internet Relevant to E-Commerce

The Internet allows people from all over the world to get connected inexpensively and reliably. As a technical infrastructure, it is a global collection of networks, connected to share information using a common set of protocols. Also, as a vast network of people and information, the Internet is an enabler for E-Commerce as it allows businesses to showcase and sell their products and services online and gives potential customers, prospects, and business partners access to information about these businesses and their products and services that would lead to purchase. Before the Internet was utilized for commercial purposes, companies used private networks such as the EDI or Electronic Data Interchange to transact business with each other. That was the early form of E-Commerce. However, installing and maintaining private networks was very expensive. With the Internet, E-Commerce spread
rapidly because of the lower costs involved and because the Internet is based on open standards.

### 3.5.3 Application with E-Commerce

E-Commerce is usually associated with businesses conducted on the internet. In its function as an online distribution channel, it contains the buying, exchanging and selling of products, services and information on the internet or other electronic systems. From a broader perspective, E-Commerce is often mentioned as an essential part of E-Business. It includes an extensive variation of marketing and sales activities within the value chain and its business processes. In this context, E-Commerce draws on such technologies as Electronic Data Interchange (EDI), Electronic Funds Transfer (EFT), Enterprise Resource Planning (ERP), online marketing, Customer Relationship Management (CRM), data mining and data warehousing etc.

Since the number of national and cross-border businesses conducted on the internet has been accelerating quickly, many countries (e.g. the United States) and supranational institutions such as the Consumer Protection and Enforcement Network (ICPEN), the Organization for Economic Cooperation and Development (OECD) and the World Trade Organization (WTO) started to establish a regulatory framework that especially deals with online security issues, transaction processing and customer rights. In Europe, the distance selling directive provides a number of fundamental legal rights for consumers in order to ensure a high level of consumer protection throughout the EU Member States as well as the European Economic Area (EEA). The directive 2002/65/EC 7 had to be integrated into national legal systems by 4 June 2000. The proceeding of the digitalization and multilevel networking have a vast impact on the further expansion of E-Business and E-Commerce. Due to the complexity of global markets and the future technological possibilities, the importance and
possibilities of E-Commerce will increase continuously. For this reason, business models and industry structures across the world will change and reinvent themselves. Many companies and organizations already employ E-Commerce approaches successfully at various levels in the transaction’s life cycle. The reduction of transaction costs through automation and the accessibility of new potential customers make mass customization attractive for big companies and allow small businesses to easier develop niche markets.

3.5.4 **Recent E-Commerce Trends**


3.5.5 **History of E-Commerce (Past)**

E-Commerce actually began in the 1970s when larger corporations started creating private networks to share information with business partners and suppliers. This process, called Electronic Data Interchange (EDI), transmitted standardized data that streamlined the procurement process between businesses, so that paperwork and human intervention were nearly eliminated. EDI is still in place, and is so effective at reducing costs and improving efficiency that an estimated 95% of Fortune 1,000 companies use it. Prodigy was running text ads and selling flowers in the early 80s. The first documented online sale in 1994 was a CD. Online retailing began four years ago, and was pioneered largely by Internet companies that didn’t perform traditional retail, such as Amazon.com and CD Now. More recently, brand names like Barnes and Noble, the Gap, and Wal-Mart have set up shop on the Net, and many experts believe that these and other brand names will be able
to establish long-lasting presences on the Web. Today, all a person needs is a
computer, a browser, and Internet access, and he or she can buy flowers,
airline tickets, and even a car. Tomorrow who knows? The sky’s the limit.
Early in 1994, working for D.E. Shaw in New York City, Jeff Bezos, a
restless, 30 year old hedge fund manager began researching the commercial
possibilities of the Net.

A year later, Bezos drove west, raising venture funds for a new
small online book shop, to be launched from his garage in Bellevue, Wash.
Running on a Website and a warehouse, by its third year Bezos’s precocious
Amazon.com toppled $150 million in annual sales a milestone that Wal-Mart
founder Sam Walton needed 12 years and 78 stores to reach. Electronic stock
trading debuted 30 years ago with Instinet, Reuter’s computer network that
allowed after-hours trading. Charles Schwab first offered a dial-up trading
service called The Equalizer in 1985. E-Trade founded in 1982 as an
institutional trading service began offering consumer trading in 1992 through
America Online and CompuServe. True Web based trading arrived in 1994
with Chicago based NET Investor, which offered 15 minute delayed quotes
and charged $35 per trade. Ameritrade, Datek Online, and others followed,
eventually driving commissions to as low as $8 per trade, and forcing the
implementation of free, real time stock quotes in 1998. In 1994, the first
national consumer brand site www.zima.com was launched for the Coors
owned beverage Zima. In October of that year, wired magazine’s Hot Wired
(now part of Lycos-owned Wired Digital), dished up the first banner ads from
12 advertisers, including AT and T, Club Med, and Volvo.

Sales for the entire online ad industry were $1 million that year,
and Hot Wired owned 40 percent of it. In 1998, online ad revenues reached
$2 billion, topping the $1.6 billion spent on outside ads, such as billboards.
General Motors alone pumped in $12.7 million. Online ad revenue is
expected to reach $11.5 billion by 2003. 5 percent of the total U.S. ad market. Booking a trip over the Web back in 1995 meant going to a travel site and requesting a fare. In early 1997, Travelocity offered a paging service to its Web customers that alerted them if their flight was delayed. In the fall of 1997, Priceline.com launched its innovative, bid based market for discount airfares. Today you can bid on empty seats, name your price, choose a seat from a diagram, and know of fare bargains often before agents have that information. Web retail sales have jumped from a mere $700 million annually in 1996 to an estimated $20 billion in 1999, according to Forrester. Among Internet users around the globe, 10 percent shop online during a month. In addition, 15 percent of users say they have considered shopping online, but have not yet done so.

3.5.6 E-Commerce Present

In present scenario E-Commerce is playing very essential role in the online business. Although it is one of the best and cheapest intermediate for reaching out to new customers in the online market, if E-Commerce implemented effectively, it also offers a smart way of doing online business and expanding it more. An online business E-Commerce podium is planned and implemented to make the most of its reach to potential customers and provide them with a convenient, satisfying and protected shopping experience.

Some major products categories have paved the way in online business are Travel services ($5.95 billion in 1999 sales), Computer hardware and software ($5.8 billion), Books ($1.7 billion), Gifts and flowers ($730 million), Music ($540 million), and Apparel and footwear ($460 million),
3.6  TECHNOLOGIES OF E-COMMERCE

The important technologies of E-Commerce are:

- Electronic data interchange (EDI)
- Bar codes
- Electronic mail
- Internet
- World Wide Web (WWW)
- Product data exchange
- Electronic forms

3.6.1  **Electronic Data Interchange (EDI)**

EDI is the Computer-to-Computer exchange of structured business information in a standard electronic format. Information stored on one computer is translated by software programs into standard EDI format for transmission to one or more trading partners. The trading partner’s computers, in turn, translate the information using software programs into a form they can understand.

3.6.2  **Bar Codes**

Bar codes are used for automatic product identification by a computer. They are a rectangular pattern of lines of varying widths and spaces. Specific characters (e.g. numbers 0-9) are assigned unique patterns, thus creating a font which computers can recognize based on light reflected from a laser. The most obvious example of bar codes is on consumer products such as packaged foods.
3.6.3 **Electronic Mail**

Messages composed by an individual and sent in digital form to other recipients via the Internet. Electronic mail is a method of exchanging digital messages from an author to one or more recipients. Modern email operates across the Internet or other computer networks. Some early email systems required that the author and the recipient both be online at the same time, in common with instant messaging. Today’s email systems are based on a store and forward model. Email servers accept, forward, deliver, and store messages.

3.6.4 **Internet**

The Internet is a decentralized global network of millions of diverse computers and computer networks. These networks can all talk to each other because they have agreed to use a common communications protocol called TCP/IP. The Internet is a tool for communications between people and businesses. The network is growing very fast and as more and more people are gaining access to the Internet, it is becoming more and more useful.

3.6.5 **World Wide Web (WWW)**

The World Wide Web is a collection of documents written and encoded with the Hypertext Markup Language (HTML). With the aid of a relatively small piece of software (called a browser), a user can ask for these documents and display them on the user’s local computer, although the document can be on a computer on a totally different network elsewhere in the world.
3.6.6 Product Data Exchange

Product data refers to any data that is needed to describe a product. Sometimes that data is in graphical form, as in the case of pictures, drawings and CAD files. In other cases the data may be character based (numbers and letters), as in the case of specifications, bills of material, manufacturing instructions, engineering change notices and test results. Product data exchange differs from other types of business communications in two important ways. First, because graphics are involved users must contend with large computer files and with problems of compatibility between software applications. (The difficulty of exchanging CAD files from one system to another is legendary.) Second, version control very quickly gets very complicated. Product designs, even late in the development cycle, are subject to a great deal of change, and because manufacturing processes are involved, even small product changes can have major consequences for getting a product into production.

3.6.7 Electronic Forms

Electronic forms are a technology that combines the familiarity of paper forms with the power of storing information in digital form. Imagine an ordinary paper form, a piece of paper with lines, boxes, check-off lists, and places for signatures. To the user an electronic form is simply a digital analogue of such a paper form, an image, which looks like a form but which appears on a computer screen and is filled out via mouse, and keyboard. Behind the screen, however, lie numerous functions that paper and pencil cannot provide. Those extra functions come about because the data from electronic forms are captured in digital form, thus allowing storage in data bases, automatic information routing, and integration into other applications.
Customized Front Page

Product Searches
Powerful search buttons can be placed anywhere on your site, or the cart’s web pages.

Product Category Selection

Temporary Order File
Continue Shopping" can be selected at any point; or return later if interrupted.

Select Items

Customer Data File
Customer and Order information are tracked without using cookies.

Check Out Button Clicked

Sky net / FedEx press
Charges are retrieved direct from the shipping companies if required.

Customer enters ID, or / Shipping Information

Accurate Shipping Charges

Tracking Data Bases
All data storage is downloadable for local updates and management using your browser.

Final Order Acceptance

Credit Card Processing

E-Mail E-Mail E-Mail
Customer Invoice Sellers Invoice Charge Receipt

Invoices and charge slips are automatically sent to the customer and store owner.

Figure 3.2 E-Commerce System Flow Chart
3.7 IMPACT OF ELECTRONIC COMMERCE IN BUSINESS

E-Commerce and E-Business are not solely the Internet, websites or dot com companies. It is about a new business concept that incorporates all previous business management and economic concepts. As such, E-Business and E-Commerce impact on many areas of business and disciplines of business management studies. For example:

- **Marketing** – issues of on line advertising, marketing strategies and consumer behavior and cultures. One of the areas in which it impacts particularly is direct marketing. In the past this was mainly door to door, home parties and mail order using catalogues or leaflets. This moved to telemarketing and TV selling with the advances in telephone and television technology and finally developed into E-marketing spawning E-CRM (Customer Relationship Management) data mining and the like by creating new channels for direct sales and promotion.

- **Computer sciences** – development of different network and computing technologies and languages to support E-Commerce and E-Business, for example linking front and back office legacy systems with the ‘web-based’ technology.

- **Finance and accounting** – online banking; issues of transaction costs; accounting and auditing implications where intangible assets and human capital must be tangibly valued in an increasingly knowledge based economy.

- **Economics** – the impact of E-Commerce on local and global economies; understanding the concepts of a digital and knowledge based economy and how this fits into economic theory.
• **Production and operations management** – the impact of on-line processing has led to reduced cycle times. It takes seconds to deliver digitized products and services electronically; similarly the time for processing orders can be reduced by more than 90 % from days to minutes. Production systems are integrated with finance marketing and other functional systems as well as with business partners and customers.

### 3.7.1 New Products and Services

Electronic technologies significantly add to organizational agility and lead to new services valued by customers. In many cases, information and knowledge are becoming the new products or services of the future. Businesses are also able to source new materials, technologies or techniques and venture into markets previously outside the scope of business operations. Joint ventures are increasingly possible through E-technologies providing businesses with new opportunities and potential areas for growth. To access a new market, a business should consider the language of the country, ensuring navigation and important information is translated to suit. Prepare website keywords and search engine listings to suit the language. Product instructions or manuals must also be translated to suit. Some products may require approval by the country’s authorities. Check out VAT/GST and other tax issues. Establish an after-sales and repair service reasonably close to the new market. Establish a toll free number directed to either your own business or a branch or a partnering business close by. Promote the website within the new market area using the appropriate strategies, e.g. email, reciprocal links with local prominent website services and portals, newspapers, magazines, TV/Radio etc. Specify where legal issues are to be dealt with. Determine a suitable currency for exchange.
3.7.2  **Intellectual and Human Capital**

E-mail and website technologies support business, procurement, production, administration, warehousing, payment, delivery, and support and feedback systems. Together, these provide whole new opportunities for a business to capture research and leverage so much information about its customers and transactions that exponential growth in intellectual capital is emerging as a major business benefit and addition to the balance sheet. Systems that are smart and informed by business trends can improve the quality and uniformity of decision making ensuring businesses operate more effectively if staff leave or are away.

3.7.3  **Technology**

These days, electronic technologies, from an accounting perspective, should be considered an ongoing operational cost, rather than a capital investment. Thus, the key to achieving the most benefit in the bottom line from computer systems lies in choosing the right technology and implementing it to optimize the many benefits of E-Business. The above benefits are related to business infrastructure, relationships and marketplace performance perspectives. If these systems are part of a well specified and well implemented business plan, they can bring about benefits and improvements in productivity, efficiency and cost savings contribute to increase in profitability.
Figure 3.3  Estimated E-Commerce Sales: 1st Quarter 2003 - 4th Quarter 2012

Source: For information, including estimates from 4th quarter 1999 forward, visit the Census Bureau’s Web site at <http://www.census.gov/retail>.

3.8 DATA FLOW DIAGRAM (DFD)

Data Flow Diagrams show the flow of data from external entities into the system, and from one process to another within the system. There are four symbols for drawing a, Rectangles representing external entities, which are sources or destinations of data. Ellipses representing processes, which take data as input, validate and process it and output it. Arrows representing the data flows, which can either, be electronic data or physical items. Open ended rectangles or a Disk symbol representing data stores, including electronic stores such as databases and physical stores such as filing cabinets are the Data Flow Diagrams for the current system. The Context Level DFD provides a conceptual view of the process and its surrounding input, output and data stores. The Detailed DFD provides a more detailed and
A comprehensive view of the interaction among the sub-processes within the system.

**Figure 3.4 Customers - Browse Context DFD**

**Figure 3.5 Customer - Browse Detailed DFD**
Source: https://www.iusb.edu/math-compsci/_prior-thesis.pdf
Figure 3.6 Authenticated User-Purchase Context DFD
Source: https://www.iusb.edu/math-compsci/_prior-thesis.pdf
3.9 E-COMMERCE APPLICATIONS IN MANUFACTURING INDUSTRY

3.9.1 E-Commerce Trends in Industrial Manufacturing

Adoption of E-Commerce by industrial manufacturers has been unexpectedly slow, due to challenges such as the need to custom configure products, and offer complex promotions involving specific terms and conditions, and execute multiple bulk orders quickly. However, when implemented effectively, E-Commerce delivers an engaging, buyer centric online experience while allowing industrial manufacturers to reduce administrative costs, increase sales and improve brand loyalty. They can do so by adopting best practices in B2B ecommerce such as targeting customers with buyer specific promotions, recommendations and messages, increasing brand visibility through social networking and opening new markets and channels through alternate business models such as mobile commerce.

Consider a large U.S. based HVAC manufacturer that asked Cognizant to help revamp its ecommerce portal from multiple standalone applications for functions such as search, order and cart processing to a single rich Internet application based portal.

Among the capabilities provided were better navigation and robust cart capabilities; improved pricing and availability; multiple search and display options and marketing tools to help cross sell and up sell products. Within one year of its implementation, the manufacturer saw online orders rise 300% and parts sales rise by close to 150%. The three key drivers of an industrial manufacturing E-Commerce solution are expediting the shopping process, enhancing the customer experience and taking advantage of future trends and tools. The customer must be able to effectively search for products and quickly complete their purchase. Industrial manufacturers must make it easy to find products. For instance, display recently viewed and purchased
items and popular customer buys; provide multiple search options and the ability to filter on the basis of specific attributes. It is also important to make the checkout process easy, convenient and quick. Personalization requires providing customer focused marketing campaigns and promotions such as banners, recommendations and special offers. Just as vendors have done in the B2C space, industrial manufacturers can display customer specific promotions prominently on the home page to up sell and cross sell products. A rich online experience visually guides shoppers between steps, lets them easily search for, filter and compare products, and see comments by others via social media. This increases customer satisfaction as well as the size and frequency of online orders.

3.9.2   **Leverage the Latest Tools and Techniques**

3.9.2.1   **Mobile Commerce**

As E-Commerce and in-store channels converge with mobile networks, customers will be able to check promotions, product descriptions and reviews by past purchasers via their mobile and smart phones. Making it easy for them to also purchase via these devices requires single click check-out with a seamless flow of payment and shipping information between the seller’s ecommerce and m-commerce engines.

3.9.2.2   **Analytics**

Sellers should have a real time view into the Web store and into marketing campaign performance, and be able to monitor lead conversion and Web site metrics to maximize the site’s effectiveness. They should also be able to analyze cart abandonment, the performance of promotions and campaigns and have visibility into live transactions and customers details to identify up sell opportunities. Using the same skills and capabilities that have revolutionized B2C E-Commerce, industrial manufacturers are enhancing the
customer experience while reducing costs and maximizing their revenue. The Internet’s large scale global penetration has spawned an increasingly large number of technology and Web confidence consumers, creating a huge opportunity for both industrial manufacturers and their end customers. Over the past decade, E-Commerce has evolved from a basic communication and transaction channel between buyer and seller, to an end to end collaboration medium between all stakeholders. This collaboration is driven by companies looking to increase sales by offering online product recommendations and promotions, as well as end customers seeking the rich and personalized online experience that many retail Web sites offer.

As a recent article in Managing Automation notes: The industrial manufacturing sector is leading the U.S. economy out of the recession on the strength of a number of key growth strategies. Selling into new industries, innovating to develop new products and services, and leveraging the Internet to pick up the pace of business are the top growth drivers. Of the 1,176 respondents to the survey, 71% said their online strategy would be important or critical. The Internet, it turns out, has taken center stage in this recovery. The future of effective E-Commerce lies in the ability to deliver a buyer centric and engaging online experience that enables customers to interact and transact with the brand and allows manufacturers to reduce administrative costs, increase sales and improve brand loyalty.

This is achieved by reducing costs through the following means: Ensuring a minimum touch, 100% accurate order in the least possible time; understanding customer needs and behavior to deliver specific marketing messages to influence decision makers; and providing a rich customer experience by leveraging rich Internet application (RIA) technologies, easy access to data to help with buying decisions, and online post purchase support. To achieve the above stated objectives, industrial manufacturers will
need to aggressively adopt B2C and retail best practices. Target customers with buyer specific online promotions, recommendations and messages, increase brand visibility by utilizing the social networking tools. Open new markets and channels through alternate business models, such as mobile commerce. Effective ecommerce solution through the adoption of the following key drivers, expedite the shopping process. Enhance the customer experience. Evolve using future trends and tools.

3.10 E-COMMERCE APPLICATION IN AUTO COMPONENTS INDUSTRY

The automotive component industry is an important sector of the Indian economy and a major foreign exchange earner for the country. There are around 400 major players in the auto component sector. The Indian auto component industry expects to grow by over four-fold to US$ 113 billion by 2020, said Automotive Component Manufacturer’s Association (ACMA).

3.10.1 SWOT Analysis on the Indian Automotive Components Industry

3.10.1.1 Strengths

- Is globally cost competitive
- Adheres to strict quality controls
- Has access to latest technology
- Provides support to critical infrastructure and metal industries.

3.10.1.2 Weaknesses

- Industry has low level of research and development capability
- Industry is exposed to cyclical downturns in the automotive industry
Most component companies are dependent on global majors for technology

3.10.1.3 Opportunities

- May serve as sourcing hub for global automobile majors
- Significant export opportunities may be realized through diversification of export basket
- Implementation of Value Added Tax (VAT) in FY2004 will negate the cascading impact of prices

3.10.1.4 Threats

- The presence of a large counterfeit components market poses a significant threat
- Pressure on prices from OEMs continues
- Imports pose price based competition in the replacement market

3.10.2 E-Commerce Applications in Auto Industry

Figure 3.8 Example of E-Commerce Auto Industry

With estimates showing that between half and two-thirds of the value of a car is now designed and made by automotive component companies, the responsibility for innovation in the industry is being outsourced by the manufacturers. A shining example is Luxembourg’s IEE whose sensing products have almost become standard features in most cars.
sold around the world. Multinational tyre manufacturer Goodyear has one of its global research centers here, as does American firm Guardian Industries which develops and produces high specification glass for the automotive and construction industries. Delphi Automotive has a Customer Technology Centre in the south of the country along with its Global Power train and European Thermal Division HQs.


**Figure 3.9 Auto Components Product Split**


### 3.10.2.1 Engine Parts

Engine Parts is the second largest product segment of the automotive components industry with a 24% production share. The segment is classified in terms of core engine, fuel delivery and other components. There are four major players in the pistons sub segment: Goetze, Shriram Pistons and Rings, India Pistons, and Samkrg Pistons. Almost all players in the pistons sub-segment have technological tie-ups with global majors.
3.10.2.2 Drive Transmission and Steering Parts

As per the classification by ACMA, the primary sub-segments in the Drive Transmission and Steering Parts segment are: gears, wheels, steering systems, axles and clutches. Steering systems, gears and axles require high precision technology.

Sona Koyo Steering Systems, Rane Madras and Rane TRW Systems are the major players in Steering Systems. In the sub-segment of Steering Systems for Commercial Vehicles, there is only one player: ZF Steering. Technical collaboration exists for major players.
3.10.2.3 **Suspension and Braking Parts**

Suspension and Braking Parts is the fourth largest product segment of the Indian automotive components industry with a 12% production share. There are three major brake system suppliers in India: Brakes India, Kalyani Brakes and Automotive Axles.

![Figure 3.12 Suspension and Braking Parts](http://www.scribd.com/doc/55459381/E-Commerce-in-Automotive-Component-Industry)

The leading companies in the automotive components industry intend to set up TecCom, an E-Business solution for dealers and independent repair shops. TecCom is a platform for procuring and purchasing throughout the branch. With TecCom, for instance, a workshop can order parts without having to resort to countless catalogs and various DP systems or solutions. B2B approach, this electronic platform can be used to place orders, confirm deliveries and issue invoices. Toyota Kirloskar Motor (TKM) will invest US$ 107 million to make engines and gearboxes for Toyota’s new small car, Etios, which is expected to be launched by year end.
3.10.3 Hyundai Debuts Auto Industries First Internet E-Commerce System

In 1992 Hyundai launched one of the industry’s first dealer to factory shared information systems for parts, the Hyundai Retailed Based Inventory Control System where parts sales and inventory data is exchanged with dealers on a weekly basis. In 1994 the company launched the industry’s most comprehensive computer based service diagnostic system, the Hyundai Diagnostic System (HDS), one of the first systems to incorporate service manuals and be J2008 compliant. In 1995 Hyundai was a leader in the movement to electronic parts catalogs, working with partner Bell and Howell (PSC). Many foreign companies are launching electronic commerce through the Internet, and Korean conglomerates are also starting to get involved in electronic commerce. Given the fact that electronic commerce encompasses not only commerce of physical products but also invisible commerce of information and service, companies have no choice but to invest in information and service in order to attain management efficiency. Until now, electronic commerce meant simply Internet shopping malls. However, Business-to-Business electronic commerce means that companies use information systems for efficient business operation. It is a new value creating work by open networks instead of closed information exchange routes.

Because these efficiencies will affect companies’ stock values and sales increase and lead to huge cost reduction, it seems natural that companies are moving toward business to business electronic commerce. In this competitive environment, companies expect to improve management efficiency through cost reduction and product improvement. Business-to-Business electronic commerce is a process of selling, marketing and managing through the Internet, meaning that Business-to-Business electronic commerce can succeed only when the preparation processes for efficiency of
the companies are completed. However, a vague illusion about efficiency can lead to new losses for companies. Business-to-Business electronic commerce changes firms’ internal business system and industrial market structure. And this kind of E-Commerce leads to a whole value chain change by building a broad SCM, encompassing procurement, production, distribution, sales and after service. The process also aims to analyze the changes in commerce structures, relationships, market structures and value chains led by Business-to-Business electronic commerce. Because the types and characteristics of Business-to-Business electronic commerce differ in each industry, this report focuses on the automobile, electronic and construction industries where business to business electronic commerce is more active than in other industries. As a research method, theory grounded questionnaires and interviews are used to find out the company’s innovative factors and the change of value chains. As the applications that had taken charge of only restricted functions, such as EDI (Electronic Data Interchange), were pushed out, the Internet became a new medium with the development of the World Wide Web in the mid 1990s. The emergence of open architecture, with the innovative development of information and communications technology, provided an opportunity to overcome the closed business activities. When the Internet was first introduced as an electronic application within companies, its use was restricted to few activities such as sales and marketing, and the concept of electronic commerce was defined as moving offline method to online commerce. American Online (www.aol.com) and Amazon (www.amazon.com) are the leading companies of this type. But initial electronic commerce models, which just transferred traditional business models to those based on the Web, became more generally used for profits and cost reduction effects.

At the same time, the electronic commerce models were getting more interested in Business-to-Business electronic commerce, for it provided
a chance to widen the scope of doing business, from marketing and sales of business parts to customized supply chain and distribution channels. The reason for the development of business-to-business E-Commerce through the Internet is simple: the limitations of time and space can be overcome, and cost reduction by innovating business process is important. With the introduction of electronic commerce, efficiency borne by the adoption of E-Commerce becomes more crucial in business activities. The business-to-business electronic marketplace takes quickly the place of off-line commerce and grows rapidly. At last, the e-marketplace is a virtual market that links many suppliers with many consumers. According to Gartner Group, within three to five years most companies are likely to participate in the e-marketplace, with more than 20 to 30 percent of their trade completed in the E-marketplace. For example, the E-marketplace is emerging throughout all industries, such as ANX in the automobile industry, Securities hub in the financial industry, and Endear in the chemical industry in the USA. In keeping with the changes abroad, the e-marketplace is growing rapidly in Korea.

Table 3.2 Domestic E-marketplaces for Major Industries

<table>
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<th>Industry</th>
<th>Fabrics</th>
<th>IT electric</th>
<th>Medical</th>
<th>MRO</th>
<th>Trade</th>
<th>Chemical</th>
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<tr>
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<td>Heavy industry</td>
<td>Construction</td>
<td>Power</td>
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Korea is trying to achieve competitive advantage by developing electronic commerce in the imminent information society. It regards electronic commerce as a major strategy for the country’s growth and is making great efforts to develop and stimulate electronic commerce. Therefore, it is essential to pursue a rational and efficient electronic
commerce strategy in order to adjust to the rapid changes taking place in electronic commerce and become competitive in the new environment. It is also essential to be aware of accurate information and appropriate strategy related to the maturity and current state of electronic commerce.

3.11 E-COMMERCE APPLICATION IN TEXTILE MACHINERY COMPANIES

3.11.1 Global Textile and Apparel Industry

The textile and apparel trade was estimated to be USD 662 billion in 2011 and is expected to grow at a CAGR of 5% in the next 10 years. The EU, US, China, Japan and India are the biggest markets for apparel, but apparel production is primarily concentrated in China, India, Bangladesh, Vietnam and Turkey. Current global fiber mix is 41% natural and 59% Man Made fiber (MMF). Demand for MMF yarns will grow faster than demand for natural fiber yarns. The global fabric trade was estimated to be USD 74 billion in 2011 while the global apparel trade was estimated to be USD 389 billion. Knit fabric and apparel are performing better than their woven counterparts in global trade. Asian countries like China, India, Pakistan, Bangladesh, Thailand, and Indonesia are among the leading countries in terms of installed machinery capacity. China alone has a share of around 45% of world’s total installed capacity for spinning and weaving machinery.

3.11.2 Indian Textile and Apparel Industry

The Indian textile and apparel market size was estimated to be USD 58 billion in 2011 and is projected to grow at 9% CAGR to USD 141 billion by 2021. Menswear contributes 43% of the Indian market; however, this contribution is expected to drop to 40% by 2021 due to faster growth of women swear and kid swear. The domestic home textile market is growing at a CAGR of 8% and is projected to reach USD 9 billion in 2021. The technical
textiles market of India is estimated to be USD 14 billion and is expected to reach USD 34 billion by 2021, at a CAGR of 10%. Employment in the Indian textile and apparel sector stands at 45 million and with an additional employment of 60 million in allied sector, total employment figure stands at 105 million.

3.12 E-COMMERCE APPLICATION IN ELECTRONIC GOODS MANUFACTURING COMPANY

Companies in this industry manufacture semiconductors and other electronic components. Products include diodes, transistors, integrated circuits, silicon wafers, and other solid-state and semiconductor components. Companies that make capacitors, resistors, and transformers, as well as electron tubes (cathode ray tubes and vacuum tubes), printed circuit assemblies, and connectors are also included in this industry.

Electronic goods

- Flat screen televisions
- Digital cameras
- Media players
- PC notebooks

3.12.1 Production of Electronic Goods

The electronics industry, on the other hand, has a less hierarchical, more flexible (and less stable) innovation chain, with more of a two-way creativity relationship between multinationals and global suppliers. The electronics sector at least parts of it, such as computing and imaging devices may be characterized as more innovative, with more rapid change in product functionality, than the electrical goods sector. In this industry, the relationships usually change depending on the needs of the individual product
development cycles. Manufacturers come and go, depending on product development.

Electronics usually show higher sales per person than electrical goods. Growth is generally higher in this sector, which is largely due to high replacement rates emanating from short innovation cycles. In particular, according to predictions from Euro monitor growth is expected to be higher in the electronics industry than for electrical goods over the next few years. Innovative and fast developing products (such as electronic goods) often require a more flexible value chain. This is influenced by factors such as maturity of products, degree of standardization, appropriability (IPR framework), complementarily between products, and length of life cycle. OEMs (Original Equipment Manufacturers) tend to play a larger role in the electronics sector than in the sector for electrical goods. Hence, not only production, but also some development and design often takes place in another country, and the product is then rebranded.

The more dynamic nature of the electronics sector is reflected in clear differences in market concentration between different product categories of electronic products, with only major global players, such as Sony, present across more than one of the product categories. Market concentration by a few actors is therefore a more obvious feature of the electronics sector. In contrast to the electrical goods sector, energy efficiency is not a driver for electronics products. Factors such as functionality and degree of innovation are more important. In this context, avoiding competition between standards is an important factor. In the electronics sector, rapid innovations have brought with them a trend of partnerships between manufacturers, and sharing brands on the same package. This is largely due to the multi-functionality of new products.
3.12.2 Environmental Regulations

Energy labeling plays an important role in informing consumer purchases. The EUP Directive (Eco design for Energy using Products) provides for voluntary agreements on energy efficiency of electronics and electrical products. It establishes a framework under which manufacturers of energy using products will, already at the design stage, have to reduce the energy consumption and negative environmental impacts that occur during the product’s life cycle. Thus, the scope of the Directive is much wider than the WEEE or ROHS directives in that it requires eco design to be an integral part of business practice and CE marking. The Directive is meant to be used in consistency with other EU policy tools such as labeling (Energy Label and Eco label), green public procurement and targeted incentives to reach full effect. The effectiveness of the ECO design Directive and its implementing measures will be reviewed by the European Commission no later than 2012.

For electrical goods, environmental regulation and standards are also important drivers of consumer choice. In particular, products with a higher energy efficiency rating can be sold with a price premium. In addition to product safety regulations and standards, there are environmental regulations which have clear implications on the value chains. The major Eco labeling tool for electronics goods is the Energy Star initiative, which has developed into a worldwide standard. For electrical goods, the ECO energy label is usually the benchmark for energy efficiency. Other relevant environmental regulations include the WEEE Directive (Waste Electrical and Electronic Equipment, its recast is being currently discussed), which means that producers are responsible for their products at the end of life. This may include recycling of some spare parts. In addition, the ROHS Directive (Restriction of Hazardous Substances) restricts the use of mercury, lead and
other hazardous substances in electrical and electronic devices. This is important for the value chain of production of electrical machinery products.

### 3.12.3 Functioning of the Market

The retail market decreased for both sectors around 2009, with the downturn setting in earlier in the sector for electrical goods, which decreased between 2007 and 2009. The electronics goods market turned did not turn negative until 2009. The vast majority of sales are done in specialist retail stores, but the share of non store retail increased over the period 2004 to 2009. This was particularly the case for electronics goods, where the share of non store retail is higher, at around 10%. Of course, the majority of non store retail is done over the Internet, which reached over 70% of non store retail in 2009. As concerns grocery retail, its share is typically around 20% for electrical goods, and lower (around 10%) for electronics. The differences between Member states are considerable, with non store sales channels representing around 1/3 of sales in the UK. As to concentration on the retail market, there are clear differences between Member States. All in all, the retail market for the electrical and electronics sectors employ over half a Million people in the EU. Employment has remained fairly stable, though the number of retail companies decreased by almost 10% between 2004 and 2009. Market concentration increased in most Member States over 2004 and 2009, together with the average scale of operations. It is not always multinational chains that have contributed to increased concentration, but rather national or local retail chains in some Member States.

### 3.12.4 Importance of the Market for Consumers

The market for electric and electronic goods comprises numerous product categories, without which it would be hard to imagine the life of a contemporary EU consumer. Products range from appliances whose role is to
facilitate the household maintenance (e.g. vacuum cleaners, irons, dishwashers or washing machines) and food storage or preparation of meals (refrigerators, freezers, microwave ovens, coffee machines or toasters) up to devices which are used for work or entertainment and leisure activities, such as PC notebooks, televisions, DVD players, cameras, media players or smart phones.

3.13 E-COMMERCE FUTURE PROSPECTS

Experts predict a promising and glorious future of ecommerce in the 21st century. In the foreseeable future ecommerce will further confirm itself a major tool of sale. Successful ecommerce will become a notion absolutely inseparable from the web, because e-shopping is becoming more and more popular and natural. At the same time severe rivalry in the sphere of ecommerce services will intensify their development. Thus prevailing future trends of ecommerce will be the growth of Internet sales and evolution. Each year number of ecommerce deals grows enormously. Sales volumes of online stores are more than comparable with those of brick and mortar ones. And the tendency will continue, because a lot of people are imprisoned by work and household duties, while Internet saves a lot of time and gives opportunity to choose goods at the best prices. Present-day Internet sales boom is the foundation for magnificent ecommerce future. Each year number of ecommerce deals grows enormously. The quantity to quality tendency of ecommerce is also becoming more and more obvious, as the Internet has excluded geographical factor from the sale. So it doesn’t matter anymore whether your store is situated in New York or London or in a small town. To survive, merchants will have to adapt rapidly to the new conditions. To attract more customers e-store owners will have not only to increase the number of available services, but to pay more attention to such elements like attractive design, user friendliness, appealing goods presentation, they will have to
opportunely employ modern technologies for their businesses to become parts of ecommerce future.

Satisfactorily this estimated 100 million to 120 million Internet users in the country right now. Of this, 15 million to 20 million have performed online transactions. The remaining are just content consumers. According to industry projections, in the next two to three years, the number of active online people is set to grow to 300 million in India. Interestingly, that is the total population in the US, points out Narasimha Jayakumar, COO, and Home Shop18. At that point, around 50 million to 60 million people are likely to make online transactions. It will be almost equivalent to the UK population now, adds Jayakumar, to indicate the potential of E-Commerce in India. Currently, India is the third largest Internet user country in the world after US and China. As of now, the E-Commerce sales value, excluding travel bookings, is less than 1% of the total pie of an estimated $500 billion retail sale in the country. This works out to less than $5 billion. The projection is that E-Commerce will grow to $15 billion by the year 2015.

Besides cashing in on the age advantage, many E-Commerce players are innovating in a way that would benefit both the consumer as well as the company. Payment, delivery of products, stocking and warehouse management are among the areas where new ideas and concepts are making inroads. Home Shop, for instance, is encouraging consumers to use credit and debit card, rather than cash upon delivery of products in many big cities. The shopper gets an additional discount if he/she pays by card, says Jayakumar. Some other online players like Flipkart and Jabong are also bringing swipe machines to the doorstep of the customer, though not across the country yet.
3.14 CONCLUSION

A characteristic of electronic shopping environments is the removal of physical constraints for product display. It allows online stores to offer extremely a large number of products. However, consumers have limited cognitive resources and may simply be unable to process the potentially vast amounts of information on these alternatives. A potential solution to this dilemma is to provide consumers with personalized information/products selected from enormous amounts of products/information available in the electronic shopping environments. In e-commerce, Web personalization aims to identify and understand customers online, to predict their buying patterns, to identify what they want or need, and deliver appropriate products/services in personalized formats directly to them.