Chapter 2
LITERATURE REVIEW

2.1 Country background - Turkey

The Republic of Turkey is a country that is located mainly in Asia and partly in Europe. The Anatolian peninsula comprises most (97%) of its territory, and is situated between the Black Sea on the north, the Mediterranean Sea on the south and the Agean Sea (and Marmara Sea) on the west. A small portion of Turkey’s territory (3%) is situated in south-eastern Europe, west of the Bosphorus (Istanbul straits). It covers total 780,585 square km.

Turkey has eight neighbor countries: Bulgaria and Greece on the west; Georgia, Armenia, Azerbaijan and Iran on the east; Iraq and Syria on the south.

Climate: Although Turkey is situated in a geographical location where climatic conditions are quite temperate, the diverse nature of the landscape, and the existence in particular of the mountains that run parallel to the coasts, results in significant differences in climatic conditions from one region to other. While the coastal areas have milder climates, the inland Anatolian plateau experiences extremes of hot summers and cold winters.

Population: 72 million

Literacy: 86.5%

Natural resources: Coal, iron, ore, copper, chromium, antimony, mercury, gold, barite, borate, celestite (strontium), emery, feldspar, limestone, magnesite, marble, perlite, pumice, pyrites (sulfur), clay, arable land, hydropower.

Economic overview: Turkey’s dynamic economy is a complex mix of modern industry and commerce along with a traditional agriculture sector that in 2001 still
accounted for 40% employment. It has a strong and rapidly growing private sector, yet the Government still plays a major role in basic industry, banking, transport and communication. The economic situation in recent years has been marked by rapid growth coupled with partial success in implementing structural reform measures. Inflation declined to 11% in 2004 (down from 99% in 1997), but the public sector fiscal deficit probably remained near 10% of GDP due in large part to interest payments which accounted for 40% of government spending in 2003.

**GDP:** - purchasing power parity: $551.6 billion (2005 est.)
Real growth rate: 5.1% (2005 est.)
Per capita (purchasing power parity): $7,900 (2005 est.)
Composition by sector: agriculture: 11.7%, industry: 29.8%, services: 58.5% (2005 est.)

### 2.2 Internet in Turkey

To acquire information on development of e-commerce in Turkey, the development of Internet in Turkey must be looked at.

The growth of networking in Turkey is closely associated with the expansion of telecommunications services which began a rapid advance during the 1980s. From the installation of the first telephone exchange in Turkey in 1909 through 1980, telephone line density had grown to only approximately 2.5 lines per 100 inhabitants (Wolcott, 1999). The fundamental program planned by Mr. Turgut Özal and later implemented by his administration during the 1980s placed a high value on expansion of telecommunications services. This emphasis on telecommunication was motivated from the liberal-open economy espoused by Mr. Özal and others required a quality telecommunications infrastructure and soon finished implementation in 1986.
(Wolcott, 1999); since in 1995 national telecommunication and postal organization split in two, all telecommunication services was performed by Türk Telekom. Finally, last year (2005) Türk Telekom was privatized.

International Telecommunication Union (ITU) report says that the number of the fixed telephone line in Turkey is 19,125,2000 (26.45 per 100 inhabitants) and the number of mobile phone subscriber in Turkey is 34,707.5 (47.99 per 100 inhabitants) in the year 2004. GSM operations are licensed to 3 private companies, TURKCELL, TELSIM/VODAFONE) and AVEA.

On the other hand services such as; Asynchronous Transfer Mode (ATM), Frame Relay/Leased Line (FR/LL), Asymmetric Digital Subscriber Line (ADSL), Integrated Services Digital Network (B-ISDN), Public Switched Telephone Network (PSTN) widely available. Moreover as satellite communication Türk Telekom launched 3 satellites; TURKSAT-1B (launched in 1994; coverage areas, Turkey, Central Europe and Central Asia), TURKSAT-1C (launched in 1996; coverage areas, Central Europe, Turkey, Central Asia) and TURKSAT-2A (launched in 2001; coverage areas, Turkey, Europe, Middle East, Russia, Central Asia).

In terms of Internet connectivity, there are two national backbones in Turkey. One is for the academic and the other one is for the commercial networking. Indeed both of them use Türk Telekom’s infrastructure and government finances the academic backbone.

The commercial backbone, which is called as TTNET is set up on a backbone of 13 nodes. This is a 155 Mbps ATM backbone and covers 8 big cities. Other cities are connected with either 34 Mbps or 2 Mbps. Totaly there are 140 nodes on TTNET and it has 3 international links. Two of them are fiber optics (45 Mbps and 34 Mbps), the other one is purposed for backup and it is a satellite link (34 Mbps) (Wolcott, 1999).
The academic backbone, ULAKNET has been operated by a group ULAKBIM, under the National Science and Technology Council (TUBİTAK). This is an ATM backbone which it has 95 nodes, and 38 Mbps band width. It has 3 international links; two of them are 4 Mbps satellite links and third one is a 2 Mbps frame-relay link (Wolcott, 1999).

2.3 Understanding e-commerce

E-Commerce is the physical delivery of those real orders in the virtual world. E-Commerce is a service that delivers different goods, ordered through the Internet (as well as fax or phone), to the customer.

E-business presents one of the greatest opportunities and challenges in commerce. Changes in technology, the growth of the Internet and the critical need to attract, train and retain talent, make the job one of the most challenging in retail today. The nature of trade and business is changing. Competitions in the market mean that to be successful, firms, even smaller ones have to examine every aspect of their business to ensure a profitable return on investment.

The new competition ground is electronic commerce. New technology means that unified, online supply chains are becoming the norm, together with home shopping either on the Internet or Digital TV. To compete effectively the firms must invest at speed, to attain the increase potential of these new channels.

To succeed in electronic market requires an effective strategy for both B2C and B2B operations, timely integrating existing channels to market with new complementary channels, and whatever the future holds. The cost effective and well managed integration of existing systems with new systems and new technologies are one of the major challenges that enterprises face today in moving towards the future.
Enterprises have made e-retailing a strategic priority and are pursuing B2C initiatives like ever before. The retailers currently use their websites to provide information to their customers and offer online retailing.

Customers shopping via multiple new channels (catalogue, kiosk, e-store, website) expect consistent levels of services and a more uniform shopping experience. Retailers that are able to provide the highest level of integration and information access will be able to leverage their investments to enhance the customer shopping experience. They will become more valuable to the customers in the long-term.

2.4 History of E-commerce

E-Commerce began with financial applications. During the 1970s electronic funds transfer (EFT) systems introduced among banks over secure private networks is an early example of e-commerce. Afterward in 1980s the automatic teller machines (ATMs) and point of sales (POS) systems in stores can also be examples of e-commerce.

Electronic Data Interchange (EDI) of late 1970s and 1980s is an important development in electronic commerce ground. This type of electronic messaging technologies in combination with electronic e-mail systems has used within the companies extensively to reduce the paperwork and increase the automation. EDI expanded e-commerce to other type of transactions rather than only money. For example, combined with just-in-time manufacturing EDI enables suppliers to deliver parts directly to factory floor when needed which result in savings in inventory, handling costs and communication costs.

In the early 1990s with the appearance of Internet and immediately following it, new services as World Wide Web (WWW), electronic mail (e-mail) allowed users
to explore information in multiple form of as text, graphic, audio, video and mutual communication on the Internet. This also allowed enterprises to disseminate and interchange information with customers. So, wide spreading and growing of e-commerce has started.

Nevertheless nothing is much more influential in e-commerce area as Internet. Especially the advent of World Wide Web (WWW) which is developed by The European Laboratory for Particle Physics and followed by the widespread diffusion of browser programs. Constant breakthroughs in hardware and network technologies and higher investment in communication technologies helped to accelerate the process (Dryden, 1998).

2.5 Categories of E-Commerce

There are three distinct categories of e-commerce by the nature of the market relationship; business-to-business, business-to-consumers, consumer-to-consumer.

**Business-to-business (B2B)** refers to the all transactions can occur between organizations, including purchasing, procurement, sales, payment, service and support activities. It has been establish for several years particularly using EDI over private or VANs.

**Business-to-consumer (B2C)** refers to the transactions between businesses and individual consumers. It is a retailing commerce. Within this type there are different type of business models; portals, online retailers, content providers, transaction brokers, market creators, service providers and community providers.

**Consumer-to-consumer (C2C)** refers the transactions between and among consumers with the help of an online market maker such as the auction site eBay. Sometimes it is named as peer-to-peer.
2.6 Benefits of e-commerce

The advantages of e-commerce are basically increasing sales and decreasing costs. These advantages can be divided into the benefits it provides to organizations, consumers and society.

2.6.1 Benefits to Organizations

- With the minimal capital outlay, a company can easily and quickly expand the marketplace to national, international level and locate more customers, suppliers and business partners which mean new opportunities (www.europe.eu.int, 2003), increases sales giving rise to increased revenue (Chaffey, 2002).
- E-commerce helps organizations decrease cost in creating, processing, distributing, storing and retrieving information.
- E-commerce can provide 24 hours a day and 7 days a week trading.
- E-commerce can provide better customer service, better customer communications.

2.6.2 Benefits to Consumers

- E-commerce enables consumers to shop or do other transactions 24 hours a day and 7 days a week from any location. Consumers can reach information, make decision and make purchase order in a short time.
- E-commerce facilitates competition, which results in substantial discounts.
- E-commerce makes it possible to participate in virtual auctions and allows consumers to interact with each other.
2.6.3 Benefits to Society

- E-commerce will have its greatest effect on the economic well-being of the society. It can only support the growth and development of the national economy, by creating employment and attainment to the global market opportunity to local enterprise.

- E-commerce facilitates delivery of government services at a reduced time, cost and at improved quality.

2.7 Issues in e-commerce

While e-commerce has been growing rapidly, there are several open issues that must be resolved (www.europe.eu.int.). In the adoption of e-commerce, there are many weaknesses confronted by SMEs. These general barriers to adoption of the e-commerce systems are well-known: Security and privacy, lack of skilled employees, lack of ease in using technology adapted to SMEs and also a lack of awareness of the potential benefits for them.

Security and Privacy: The proliferation of e-commerce is bringing a string of fears about security and privacy issues both for businesses and consumers. Among the biggest security worries is a perception that credit card information is not secure on the Web. Many people think privacy and security as they are same. Actually they are different.

Privacy: In e-business, the right of persons to control personal data about themselves and their behaviors (Roberts, 2003). Main privacy issues are; (1) security and privacy or sensitive consumer information related to online sales and services
transactions, (2) the collection and use of consumer data and statistics, and (3) the protection of a consumer’s right to privacy (Rayport and Jaworski, 2004).

**Security:** The ability of a system to prevent illegal or inappropriate use of its data and to deter cyber-criminals and hackers (Rayport and Jaworski, 2004).

When individuals conduct private transactions there is an assumption that personal information is not being divulged to others. When a transaction is secure, it is thought to be protected from assault or corruption. In this perspective, privacy is the ability of an individual to keep his identity confidential throughout a transaction. On the other hand anonymous transactions, using cash as the means of payment maintains privacy; but the transaction is yet not secure. Credit cards, on the other hand, offer security, but not privacy.

E-commerce consumers have preference to sacrifice privacy for additional security or to get more privacy. Actually giving credit card information to a secure e-commerce site is not risky as giving a credit card to clerk in a shop. Some e-commerce sites are gathering more information about their visitors such as; names, addresses, age, gender, income, buying preferences etc,. Some companies use this information to market additional products to visitors, but there is a concern whether the companies will sell this information to third party companies.

There are some tools and solution addressing secure e-commerce, promoted various manufacturers, standards bodies and industry associations, some of them listed below.

**Secure Socket Layer (SSL);** Netscape Communications Corporation developed this security protocol to prevent interception of information through the Internet.

**Platform for Privacy Principles;** Known as P3, it supported by the World Wide Web Consortium, the Direct Marketing Association and, in the beginning
Microsoft. This standard tries to define and describe limits on the gather and use of users’ private information from Web sites.

**Token;** Small devices which the customers can carry with. Based on challenge response system, it provides secure log on a certain Web site. (Some banks in Turkey give Tokens to their customers.)

**Secure Electronic Transaction (SET);** Developed by MasterCard and Visa with partners including IBM, Microsoft, Netscape and others. This protocol allows the parties to confirm each other’s identity, for any transaction.

**Open Profiling Standard for Authorization and Single Sign-On (OPS);** Supported by Firefly, Netscape and VeriSign, it obviates the necessity for customers to reenter information that identifies them more than once at a Web site.

Despite these tools and solutions, still security and privacy is still big concern among e-commerce consumers. However, a survey dated 1999 is conducted by IBM and Louis Harris & Associates indicated that 72% of net users are worried about Internet privacy. The study also indicated that only 21% of consumers trust Internet companies, and that 57% of Internet users in the USA (41% in UK, 56% in Germany) decided at some point not to purchase a product online because of privacy concerns (IBM, 1999).

Moreover, the majority of the participants in Udo’s study believed that the advancements in such technology as encryption and other security features are not sufficient to reduce their security and privacy concerns (Udo, 2001).

The concern of privacy and security in e-commerce is vital to its eventual success. If consumers cannot trust that their personal information and transaction are safe and secure, the Internet will not able to reach its economic potential. So, this issue must be dealt with.
**Skilled personnel required in e-commerce**: One of the reasons for not adopting to e-commerce by SMEs, lack of personnel with appropriate ICT skills. However complementary investment in skills and go on with training is a key to making e-commerce systems work.

**Customer satisfaction**: A customer is someone who purchases or rents something from an individual or organization. Customers have needs and expectations that need to be observed by the organization and customer’s satisfaction is the subject of business efficiency.

Businesses depend on their customers. In fact customers are very livelihood of business organizations. Customer satisfaction has always been assumed as a necessary condition for the success of organizations. There are several studies (see for a summary Andrea and Saraiva, 2000) that bring to evidence the benefits that derive from a high level of customer satisfaction, namely through increase of customer loyalty, reduction of price elasticity, decrease of failure-related costs, easier acquisition of new customers, increase of the products portfolio supplied to customers, brand’s and enterprise’s prestige in the market and so forth. In addition, evidence abounds from management, organization and marketing literature that customer satisfaction is positively related to increased profitability, larger market share, and growth (Naumann 2001, Meuter et al, 2000: McColl-Kennedy and Schneider, 2000) (Molla and Licker, 2001).

**Organizational acceptance**: One factor that could limit the emergence of e-commerce is lack of awareness and skills (www.europe.eu.int). While the Internet has exposed some implementation mistakes, managers often do not realize they are not executing their strategy well until the company is failing. Senior managers may be
so busy getting the company off the ground and profitable that they can neglect to give employees the information they need. Regardless of whether the company is offline, online or a combination, it will need good management, clear strategy, good processes, and solid leadership. These hybrid organizations must have clear customer communications and internal coordination processes in order to provide a consistent customer experience (Rayport and Jaworski, 2004).

**Marketing:** Many studies point to the possibility of market expansion as a major benefit for SMEs. Internet and e-commerce systems provide many benefits and they are effective tools for improving communication and quality of service for established and new customers. They enable also SMEs while remain in local and regional markets to gain access to new customers and to expand their market geographically. Realizing the full potential of e-commerce requires universal access.

The Internet has been instrumental in transforming the value chain from manufacturers to retailers to consumers, creating a new retail distribution channel (Donthu & Garcia, 1999).

**General reaction of management:** SMEs may also lack managerial understanding and skill for e-commerce. Successful integration of e-commerce systems requires many firms to restructure their business processes, to change organizational structures and to redefine their core competence and positions in the market places.

SME leaders more concerned about how to increase their profits by using e-commerce. They are concerned, however, about the complementary, invisible costs related to the management and organizational changes required for adopting new e-commerce environment.
2.8 E-Commerce payment systems

A key component to conducting business is accepting payment. The main difference e-commerce and bricks-and-mortar payment methods can be seen when evaluating the natures of the two media. Bricks-and-mortar implies the physical, while e-commerce implies the virtual. As such, an electronic medium prohibits the use of cash and encourages transactions that do not require physical funds but instead involve only data transfer (Rayport and Jaworski, 2004). Secure electronic funds transfer is crucial to e-commerce.

How individuals and organizations conduct monetary transactions in the Internet examined shortly below:

Credit card transactions: Although credit cards are popular form of payment for online purchases, many people resist the appeal and simplicity of credit card transactions due to security concerns.

To accept credit card payments, a merchant must have a merchant account with a bank. With the growth in e-commerce, specialized Internet merchant accounts have been established to handle online credit card transactions (Jian, 2004).

Digital Currency: Digital cash is one example of digital currency. It is stored electronically and can be used to make online electronic payments, digital-cash accounts are similar to traditional bank accounts: consumers deposit money into their digital-cash accounts to be used in their digital transactions. Digital cash is often used with other payment technologies, such as digital wallets. Aside from alleviating some of the security concerns many people have about online credit card transactions, digital cash allows people who do not have credit cards to shop online (Jian, 2004).

E-Wallets: To facilitate the credit card order process, many companies are introducing electronic wallet services. E-wallets allow you to keep track of your
billing and shipping information so that it can be entered with one click at participating merchants’ sites. Credit card companies, such as Visa, offer a variety of e-wallets.

There are many digital wallets on the markets that are not accepted by all vendors. Visa, MasterCard and a group of e-wallet vendors have standardized the technology with the Electronic Commerce Modeling Language (ECML) since the standard was unveiled in June 1999; many of the leading online vendors have adopted it (Jian, 2004).

**Peer-to-Peer Payments:** Peer-to-Peer transactions allow online monetary transfers between consumers. eCash Technologies Inc. runs a Peer-to-Peer payment service that allows the transfer of digital cash via e-mail between two people who have accounts at eCash-enables banks.

PayPal offers a digital-payment system. PayPal allows a user to send money to anyone with an e-mail address, regardless of what bank either person uses, or whether or not the recipient is pre-registered with the service.

eBay and Wells Fargo offer another form of peer-to-peer payment called BallPoint. It allows buyers to submit electronic payments to sellers’ checking accounts. Another peer-to-peer payment company, Tradesafe.com™, accommodates the larger amounts typically involved in B2B transactions. Tradesafe.com offers peer-to-peer credit card transactions and also provides its services to electronic merchants (Jian, 2004).

**Smart Cards:** Smart cards are able to hold more information than ordinary credit cards with magnetic strips. There are contact and contactless smart cards. Contact smart cards need to be placed in a smart card reader. The contactless card enables faster information exchange then is possible using a contact smart card. For
example, contactless cards are convenient for transportation services, such as an automatic toll payment (Jian, 2004).

2.9 E-commerce Consumer Attitudes

Beside the technology and enterprises, one of the other major elements of e-commerce is consumers who want to buy goods or services and willing to use computer technology. So their attitudes have a strong influence on their acceptance and adoption of ICT and on-line purchasing.

A model developed by Lee and Turban (2001) shows the relationship between the trust of a customer in Internet shopping and the affecting factors such as trustworthiness of Internet merchants in the Internet as shopping medium; the related factors including demography as gender, age, education, income, race, occupation etc.,

Source: Lee and Turban (2001)

Figure 2
The EC Trust Model
Consumers’ trust in Internet shopping has been modeled by Lee and Turban (2001) using four groups of factors as antecedents: (1) trustworthiness of the Internet merchant, which includes perceptions of the merchant’s ability, integrity, and benevolence; (2) trustworthiness of the Internet shopping medium, based on perceptions of an Internet merchant’s technical competence and performance level (e.g. reliability, speed, and availability), and their understanding of the Internet shopping medium; (3) contextual factors such as perceptions of the effectiveness of third party certification bodies and public key security infrastructure system; and (4) other factors, such as size and demographic variables. Individual propensity to trust was proposed as a moderator (Kim and Benbasat, 2003).

As one of major element of e-commerce and as a determinant for electronic market, consumers’ demographics is one of the objects for this study.

2.10 E-commerce and developing countries

The Internet has become a global phenomenon, transforming the way we conduct business. In 1995, fewer than 10 million people were using the Internet. Today there are approximately 1 billion users worldwide (http://turk.internet.com, 2005). This growing medium offers vast potential to bring people together from across the world, enhancing opportunities in commerce, education, health care, etc. And this has produced a booming economy known as e-commerce.

Given the Internet’s potential to drive future economic and social development, a key challenge for developing countries is to implement required policies to encourage Internet growth among their people. Government policy can have a profound impact on Internet development; the Internet has boomed despite the absence of regulation. Regulatory policies governing the telecommunications market,
however, have a direct impact on Internet development and usage by people. However, the telecommunication infrastructure is essential for the operation of Internet services and e-commerce applications.

A truly global e-commerce marketplace cannot exist without the participation of developing countries. Approximately more than half of Global Internet users, however, are in high-income countries, (North America 23.8%; Europe 28.7%) which account for just 16.5% of the world population. In 2005, Africa had just 1.7%; South America had just 7.3%; Middle East had just 2.3% and Asia had just 34.5% of the Global Internet users (http://turk.internet.com, 2005).

The biggest number of Internet user 203 million in USA, second biggest one 103 million user in China, third biggest one 78 million user in Japan. In order to user percentage of population; Turkey is ranked 24th with 7.3 million Internet user (http://turk.internet.com, 2005).

<table>
<thead>
<tr>
<th>Region</th>
<th>Internet users</th>
<th>Population (%)</th>
<th>World Population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>16,174,600</td>
<td>1.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Asia</td>
<td>323,756,956</td>
<td>8.9%</td>
<td>34.5%</td>
</tr>
<tr>
<td>Europe</td>
<td>269,036,096</td>
<td>36.8%</td>
<td>28.7%</td>
</tr>
<tr>
<td>Middle East</td>
<td>21,770,700</td>
<td>8.3%</td>
<td>2.3%</td>
</tr>
<tr>
<td>North America</td>
<td>223,392,807</td>
<td>68%</td>
<td>23.8%</td>
</tr>
<tr>
<td>South America</td>
<td>68,130,804</td>
<td>12.5%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Pacific / Australia</td>
<td>16,448,966</td>
<td>49.2%</td>
<td>1.8%</td>
</tr>
<tr>
<td>World wide</td>
<td>938,710,929</td>
<td>14.6%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Yet e-commerce offers the unique opportunity to create a truly global marketplace. Increasing shares of commercial transactions are occurring online. The Table 2 below indicates that global e-market value growing tremendously.

### Table 2 Global e-commerce spending by region

<table>
<thead>
<tr>
<th>Country Region</th>
<th>2000 Value $Billion</th>
<th>Share %</th>
<th>2005 Value $Billion</th>
<th>Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>161</td>
<td>45%</td>
<td>1,817</td>
<td>36%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>70</td>
<td>20%</td>
<td>1,718</td>
<td>34%</td>
</tr>
<tr>
<td>Japan</td>
<td>75</td>
<td>21%</td>
<td>579</td>
<td>11%</td>
</tr>
<tr>
<td>Asia/Pacific</td>
<td>19</td>
<td>5%</td>
<td>599</td>
<td>12%</td>
</tr>
<tr>
<td>Canada</td>
<td>13</td>
<td>4%</td>
<td>158</td>
<td>3%</td>
</tr>
<tr>
<td>Latin America</td>
<td>6</td>
<td>2%</td>
<td>80</td>
<td>2%</td>
</tr>
<tr>
<td>Rest of the World</td>
<td>11</td>
<td>3%</td>
<td>85</td>
<td>2%</td>
</tr>
<tr>
<td>Worldwide</td>
<td>355</td>
<td>100%</td>
<td>5,036</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: International Data Corporation (IDC)

Beside developed, developing countries also begin to benefit economically and socially from increased participation of this growing e-marketplace.

#### 2.11 E-commerce in Turkey

Most people think e-commerce means online shopping. But web shopping is only a small part of the picture. The term also refers to online stock, bond transactions, buying and downloading software without ever going to a store. In addition, e-commerce includes business to business connection that make purchasing easier for big enterprises.

The main vehicle of e-commerce remains the Internet and World Wide Web, but use of e-mail, fax and telephone orders also prevalent.
The effects of e-commerce are already appearing in all areas of business; from customer service to new product design. It facilitates new types of information based business process for reaching and interacting with customers-online advertising and marketing, online order taking and online customer service etc. It can also reduce cost in managing orders and interacting with a wide range of suppliers and trading partners, areas that typically add significant overheads to the cost of products and services.

According a survey conducted by Merill Lynch Bank for 2004 in Turkey; e-commerce market estimated as 4 billion US$ and 62% (approximately, US$ 2.5 billion) of it B2B; and remaining 38% (approximately, US$ 1.5 billion) is B2C market (www.teknoart-design.com).

Moreover; International Data Corporation (IDC) estimated the e-commerce market in Turkey will be worth around US$ 15 billion annually by the end of 2005. This will be an amount close to 2.5% GDP or around US$ 750 per web buyer. This projected level of US$ 750 per web buyer in 2005 is however, below the average level forecast for Western Europe in 2000. The table 3 and 4 indicate the situation clearly.

Table 3 Turkey B2C e-market forecast (1999 – 2005) US$ million

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
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<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
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<tbody>
<tr>
<td>B2C e-commerce</td>
<td>7</td>
<td>68</td>
<td>200</td>
<td>375</td>
<td>840</td>
<td>2,625</td>
<td>6,188</td>
</tr>
<tr>
<td>as % of GDP</td>
<td>-</td>
<td>-</td>
<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>Web buyers (B2C)</td>
<td>150</td>
<td>450</td>
<td>1,000</td>
<td>1,500</td>
<td>2,400</td>
<td>5,250</td>
<td>8,250</td>
</tr>
<tr>
<td>B2C buyers as % of total web users</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>50</td>
</tr>
<tr>
<td>Average revenue per B2C buyer (US$)</td>
<td>47</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>350</td>
<td>500</td>
<td>750</td>
</tr>
</tbody>
</table>

Source: International Data Corporation (IDC)
However, Ozalp, in her article which is based on Turkish Interbanks Card Center balance sheet, indicates total B2C e-commerce market in 2003; 250 million US$, in 2004; 550 million US$ and for the first 6 months of 2005; 430 million US$ counted in Turkey. And she estimates total e-commerce market (B2B and B2C) 3-5 billion US$ for the year 2005 (Ozalp, 2005). The Table 5 below depicts the situation more clearly.

One of the feeding factors for e-commerce market is PC and Internet penetration. In the Year 2004; Internet penetration in urban areas is around 80% (5 million people; 7% of total population) in Turkey (www.infomag.com.tr).

| Table 4 |
|-----------------|--------|--------|--------|--------|
| **Comparative internet and e-commerce figures in Western Europe (US$ billion)** |
| Total Web Users (1000) | | 63,000 | 87,000 | 114,000 | 136,000 |
| Population (million) | 382 | 383 | 385 | 387 |
| Internet Penetration (%) | 17 | 23 | 30 | 35 |
| PC Penetration (%) | 42 | 49 | 57 | 63 |
| Share of PCs with Web access | 39 | 46 | 52 | 56 |
| Total e-commerce revenue | 18.9 | 49.4 | 112 | 223 |
| o/w B2C | 5.4 | 12.5 | 26.1 | 48.6 |
| B2C web buyers (1000) | 9,038 | 15,535 | 24,210 | 33,003 |
| B2C buyers as % of total web users | 14.9 | 18.5 | 22.1 | 25.3 |
| Average revenue per B2C buyer (US$) | 597 | 805 | 1,078 | 1,473 |
| **Source:** International Data Corporation (IDC) |

| Table 5 |
|-----------------|--------|--------|--------|
| **Turkey B2C e-commerce market (US$ million)** |
| | 2003 | 2004 | 2005 (6 months) |
| Turkish Banks (balance sheets) | 250 | 550 | 430 |
| **Source:** Ozalp |
These indicators show that the current B2C e-commerce on the demand level is yet low in Turkey. There are some important barriers against its rapid development. First, catalogue shopping is not well developed. Turkish consumers still want to see and touch the product which they want to buy and prefer a face to face contact with seller. Second, there are logistic problems. The delivery or courier services have not developed well yet.

First e-commerce implementation in Turkey was Electronic Fund Transfer (EFT) between Turkish Central Bank and other banks in 1992 (Aydemir, 2004).

The government of Turkey has recognized the need for development of IT industry and information infrastructure as tools for growth of the economy.

Deeper penetration of IT applications in the economy, and in the society as a whole can help boost the economy. E-commerce applications can make it easier for the country to better integrate with the global markets, the e-marketplace. This has led the government, for the last few years to formulate liberal policies for the development and growth of the IT industry.

Thus first official studies on e-commerce in Turkey were started in 1997 by Board of Science and Technology; consequently Board of Electronic Commerce has been formed soon after; working groups for Legal, financial and technical studies organized. The Electronic Commerce Coordination Committee (ETKK) has been formed with involving certain governmental, public and private bodies in 1998. And its recommendations for a national e-commerce policy was adopted and approved as official state policy by the government. Highlights of the policy are;

- Promoting awareness of e-commerce among businesses and public;
- Providing an administrative and technical infrastructure for improving access to e-commerce;
- Creating a legal infrastructure;
- Strong cooperation at the international level including matching national policies with the rest of the world, complying with international standards and participating in international organizations.

The main achievements of the Turkish Government with respect to e-commerce are:

- Preparation of a Turkish National Information Infrastructure Master Plan (August 1997 – February 1998): Turkish National Information Infrastructure (TUENA) studied the status of information communication technologies with a nationwide survey to provide policy makers with detailed information for strategic planning.

- The establishment of SME-Net, an information and Internet service for SMEs (1997): KOSGEB has established its own intranet, called KOBI-Net (SME-Net), using Internet infrastructure to expand its facilities to SMEs within nationwide. It offers basic services to Turkish SMEs for e-commerce like e-mail service, preparation of Web pages in 7 languages (Turkish, English, French, German, Italian, Spanish and Russian) on KOBI-Net Web site, communication software to all members and opportunity to access to KOSGEB and other SME institutions’ services for free of charge (www.kobinet.org.tr).

- The Act of Electronic Signature (2004): Currently 3 organizations authorized to provide certificate.

- e-Turkey Project (1999): Turkey has involved in European Union’s project which is goaled to make European market as the most dynamic and competitive electronic market place in the world. The project called as e-Europe+; e-Turkey which are a part of this project and planned to complete important subprojects to reach 12 aims at the end of 2006.
2.12 SME segment in Turkey

The term SME has no universal definition as it covers a wide variety of definitions and measures. The most common definition used in Organization for Economic Cooperation and Development (OECD) countries is based on employment figures; correspondingly, an SME has less than 500 employees.

Although in the past years there was no general consensus of the definition of SME’s in Turkey, the SME definition is adapted to European Union’s in the year 2005. So new regulation defines SMEs as;

- **Micro Enterprise:** employee <10
- **Small Enterprise:** employee <50
- **Medium Enterprise:** employee <250

SMEs, as being one of the main forces in economic growth and job creation have a special importance, not only in developed countries but also in developing and emerging economies (Cabbar, 2000). The OECD’s statistics show that SMEs with more than 95% of the total employment, in most countries are the main source of newly created jobs, especially in advanced technology sectors and also, function as the engine of economic growth and performance (Cabbar, 2000).

In Turkey, some 3.5 million SMEs make up 98.5% of the total number of companies and are responsible for creating 56% of the nation’s employment. They generate 26% of investments, 38% of value added products, 8% of exports and 36% of all production (DİŞBANK, 2004).

As it is case with the rest of the world, SMEs are the most vital organs of the Turkish Economy as 99.5% of the manufacturing units are SMEs in Turkey. Main sectors of Turkish SMEs are;

- **26.1% metallic goods**
• 25.6% textiles, clothing, leather products
• 24.3% wood products and furniture
• 12.7% food and beverages
• 3.9% paper products
• 7.4% others

Most of the SMEs see the benefits arising from e-commerce as expanded geographical coverage giving them a larger potential market into which they can sell their products and services. Some of the key industries have high potential for easy adoption of e-commerce such as financial (stock exchange and banks), automobiles, retail, travel, IT and manufacturing. However they have financial and technical obstacles with e-commerce.

There is a survey conducted by Microsoft Türkiye in 2003 in 5 big Turkish cities (intensive SME area) among 700 SMEs. The survey indicates that PC penetration is 23%; Network penetration is 59%; e-commerce implementation is 7%; Web Site penetration is 53% among Turkish SMEs.

2.13 Conclusion

Electronic commerce is a service that delivers different goods, ordered through the Internet (as well as fax or phone), to the customer. E-commerce began with financial applications, during the 1970s, and then EDI is an important development in e-commerce ground during 1980s, but due to its complexity and high cost it could not utilize by small firms; however emergence of the Internet and WWW technology in the early 1990s provided an opportunity to utilize it for SMEs. However in spite of this opportunity there is a slow uptake of the e-commerce by SMEs.
There are several key factors such as; security and privacy, requirement of skilled personnel, organizational and managerial issues affect, acceptance of e-commerce by SMEs and consumer attitudes on online shopping in Turkey will be studied in next chapters.