Chapter 1
INTRODUCTION

1.1 Introduction

This study examines the active utilization of electronic commerce (e-commerce) by Small and Medium Enterprises (SMEs) in Turkey. The study examines some SMEs’ experiences of utilizing e-commerce. Further, the issues surrounding e-commerce are discussed. This chapter starts with the background of the study, a brief review the nature of problems, aims and objectives, scope of the study, overview of methodology, and the significance of the study.

1.2 Background of the Study

Internet is a vast network of individual computers and computer networks connected to and communicate with each other using the same communication protocol – TCP/IP (Transmission Control Protocol / Internet Protocol). When two or more computers are connected a network is created; connecting two or more networks create ‘inter-network’ or Internet.

The Internet is an interconnected network of thousands of networks and millions of computers linking businesses, educational institutions, government agencies and individuals together (Jian, 2004). The services, such as file transfer, Telnet, electronic mail, World Wide Web and hypertext transport protocol provide the basis to communicate, manage distribute information to businesses as well as individuals. World Wide Web (WWW) is one of the most popular services of Internet, which is providing access to web pages that is created in a programming language called Hyper Text Markup Language (HTML) and which can contain texts, graphics, audio, and video.
Internet technology has evolved to its present state by the US Advanced Research Projects Agency (ARPA) in the late 1960s and early 1970s as an experiment in wide area networking. This technology includes a set of network standards that specify the detail of how computers communicate, as well as a set of conventions for interconnecting networks and routing traffic. It is named TCP/IP Internet Protocol Suite and it can be used to communicate across any set of interconnected networks. It forms the base technology for a global Internet that connects homes, university campuses and other schools, corporations, and government labs over countries. In the U.S., the National Science Foundation (NSF), the Department of Energy (DOE), the Department of Defense (DOD), the Health and Human Service Agency (HHS) and the National Aeronautics and Space Administration (NASA) have all participated in funding the Internet, and use TCP/IP to connect many of their research sites (Comer, 1999). This network is known as the ARPA/NSF Internet, the TCP/IP Internet, the Global Internet or just Internet, the resulting this technology allows researchers at connected institutions to share information with colleagues around the world (Comer, 1999).

During this period the Internet grew rapidly and this contributed to the decommissioning of the ARPANet in 1990, although the US National Science Foundation (NSF) established a national network (NSFNet.) based on ARPA Technology (TCP/IP) using commercial telephone lines for connectivity. The NSF banned commercial traffic on the Internet until 1991 (Roberts, 2003) and soon after this time some companies have started to conduct various commercial activities on the Internet. This new activity is known as e-commerce.

Actually e-commerce is not new, before definition of it and the broadly reported emergence of Internet’s commercial applications after 1991, companies have been electronically doing business, transferring invoices, purchase orders or any other
EDI has been around for almost 30 years in the non-Internet environment (Jian, 2004). EDI is an electronic computer-to-computer transfer of standard business documents (Brady, Monk and Wagner, 2001). Enterprises have two options to operate an EDI system; they can set up their own private networks to link their business partners, or they might subscribe to a network run by an outside EDI service provider called a value-added network (VAN). Both of these two options to implement EDI systems were extremely costly. As EDI messages are repetitive, it is sensible to use some formatting (coding) standards and differ than e-mail messages. Standards can shorten the length of the messages and eliminate data entry errors, since data entry occurs only once. In the United States and Canada, data are formatted according to the ANSI X.12 standard. An international standard developed by United Nations is called EDIFACT (Jian, 2004). Some of the benefits of EDI can be as follows:

- Providing a complete paperless environment, saving money and increasing efficiency.
- Reducing errors in the business documents.
- Providing shorten payment collection.
- Delivering fast and efficient ordering.

It enables companies to communicate with their trading partners, but does not let them reach global market place and consumers, as a result EDI is only a business to business e-commerce tool. Even thought EDI is a useful e-commerce tool, due to its complexity and high cost it could not be accepted and implemented by SMEs. However Internet and web technologies offer, more convenient ways to reach trading partners, global market place and consumers for SMEs besides big businesses.

Turkey is a dynamic, emerging market economy strategically located between Europe and Asia and bordering the Mediterranean, Aegean and Black Seas. Over 73
percent of its 65 million people live in urban areas. Agriculture accounts for some 16 percent of its GDP, industry for 24 percent, and services for 60 percent. Turkey signed a customs union with the European Union (EU) in 1995 and became a candidate for EU membership at the Helsinki Summit in December 1999. Although Turkey is the world’s 17th most industrialized nation, it ranks 85th out of 173 countries in terms of Human Development Indicators, as measured by the UNDP in 2002 (The World Bank Group. 2002).

After the elections of 1999, the Government launched an extensive economic reform program to overcome chronic high inflation and restore sustained growth. In parallel it started the process of modernizing the role of the state in the economy, and addressing deep-rooted social and environmental problems. This multi-faceted program aims to lay the ground for macroeconomic stability and higher growth, to modernize institutions, as well as to reduce economic vulnerability and address the remaining pockets of poverty. The World Bank is fully engaged in supporting this effort (The World Bank Group. 2002).

After the crises in late 2000 and early 2001, the Government outlined a new economic program to bring about a rapid turnaround in the economy. The new program goes much deeper than previous attempts in addressing the structural roots of the crisis – weak public finances and a fragile banking system – while strengthening social programs (The World Bank Group. 2002).

Study shows that there is a need for e-commerce in Turkey to cope with the growing competition; this is a part of the EU integration process (Ar, 2001). Moreover, e-commerce lessens high physical transaction costs and brokerage and intermediary costs; and it resolves time constraint of physical exchanges and the problem of lack of full access to market participants. Turkey is conducive for the
implementation of e-commerce because of its relatively new telecom infrastructure and the increasing demand and usage of Information Technology applications. Turkey also has a developing economy and emerging market (Ar, 2001). Figure 1 illustrates the increasing number of Internet users in Turkey.

![Internet Users in Turkey](source: International Telecommunication Union (ITU))

According to Cabbar (2001), in order to accelerate e-commerce applications in Turkey, national policies should concern the promotion of B2B applications; setting up of e-marketplace and helping the SMEs to participate in these markets; promotion of SME support networks especially aiming at e-commerce application; raising the awareness for SMEs concerning the benefits of Information and Communication Technology (ICT) and Internet usage. Moreover, national policies should address the need to organize training activities in order to eliminate the ICT skill shortage and develop digital literacy (Cabbar, 2001).

This study presents the results of a survey that investigates the active utilization of Internet-based services by SMEs in Turkey. The researcher believes that this study will be very helpful in resolving the problems faced in developing countries in the area of e-commerce.
1.3 **Problem Statement**

Even though, e-commerce has been existing for more than 20 years (EDI) and due to its complexity and high cost it could not be utilized by small firms; however the emergence of the Internet currently provides an opportunity to utilize it for SMEs.

In spite of this opportunity; a tendency of slow uptake of the e-commerce by SMEs and their inhibitions are clear. Reasons for these inhibitions can be due to; a lack of support from management, a lack of technology skills and experience, a lack of information about security and privacy, a lack of financial and organizational resources, a lack of information about new global market (e-market place) conditions and consumers attitudes. Implications of e-commerce for the existing commercial activities of organizations and their business environment and the basic existing relationships of a company to its market are still unclear.

Thus, an empirically study about the experiences on these barriers and implications for SMEs which are actively utilizing e-commerce in Turkey will be useful for the research community, practitioners and governments and it can encourage SMEs to adopt e-commerce system.

1.4 **Objectives of the Study**

The general purpose of this study is to examine the active utilization of e-commerce by SMEs in Turkey, focusing on the following topics;

1. Security and privacy issues
2. Personnel qualification
3. Customer satisfaction
4. Organizational change
5. Marketing
6. Overall management

This study’s result can be used as a basis for future research and analysis of e-commerce adoption patterns in Turkey, or any other country.

1.5 Scope and Limitation of the study

This research study only covers the utilization of e-commerce to SMEs in Turkey as there are numerous studies on large industries. The outcome of this study is limited only to the data gathered from the secondary data (books and journals) about e-commerce and from the primary data gathered from the result of the questionnaire survey and interviews that will be conducted by the researcher.

There are inherent problems in the data due to the small size of the survey sample and the small number of respondents. The results of this survey should be viewed as indicative of the status of the utilization of e-commerce by SMEs in Turkey at the time of the survey.

1.6 Overview of the Research Methodology

For this study, primary research and secondary research are used. Primary research is conducted using questionnaire surveys that are sent to SME managers from SMEs that have already implemented e-commerce and second research is conducted using questionnaire surveys that are sent to some e-commerce consumers. The questionnaires will be used to collect quantitative data.

As stated above, this research will partially base its findings through quantitative research methods because this permits a flexible and iterative approach. During data gathering the choice and design of methods are constantly modified, based on ongoing analysis.
For this research design, the researcher will gather data, collate published studies from different local and foreign universities and articles from business books and journals; and make a content analysis of the collected documentary and verbal material. Afterwards, the researcher will summarize all the information, make a conclusion and provide insightful recommendations on the application of e-commerce to SMEs in Turkey.

1.7 **Significance of the Study**

This study can be helpful to SME business practitioners as it can be a guide for them when they employ e-commerce systems to their businesses. By examining the risks and other factors involved in e-commerce, small and medium businesses will be able to design measures to minimize the risks. Further, through the understanding of the needs of their customers in terms of security and satisfaction, this study can help SMEs in the process of implementing e-commerce. Furthermore, this study can be a significant endeavor in promoting e-commerce awareness among consumers who are still hesitating to shop online. This study will be useful for future researchers on e-commerce and its application to Small and Medium Enterprises.

1.8 **Definition of Terms**

*E-commerce* refers to the buying, selling, marketing, and servicing of products or services over computer networks (www.encyclopedia.com). Basically, the information technology industry might interpret it as an electronic business application aimed at commercial transactions. An unconventional definition of e-commerce might explain it as the manner of business commercial communications and management through electronic methods, such as electronic data interchange and automated data-collection systems.
**E-business** refers to any information system or applications that empower business processes. Currently, e-businesses are mostly done with web technologies (www.encyclopedia.com).

**Small and Medium-sized Enterprise (SME)** refers to companies whose headcount or turnover is below certain limits (www.encyclopedia.com). In Germany, SME refers to the traditional limit of 500 employees while e.g. in Belgium it could have been at 100. But nowadays the EU is standardizing the concept. Its current definition categorizes companies with less than 50 employees as small, those with less than 250 as medium enterprise in Turkey.

### 1.9 Organization of the Thesis

**Chapter One** provides an introduction to the study, describing its objectives, scope and limitations, an overview of the research methodology, and significance of the study.

**Chapter Two** presents the review of the literature on electronic commerce. The findings from various books, journals, magazines, newspapers and Internet search regarding electronic commerce will be discussed here. The content will cover background information on Turkey, e-commerce history, categories, benefits and current issues. This is followed by a discussion on e-commerce in developing countries and Turkey. Finally, the SME in Turkey is described.

**Chapter Three** focuses on the methodology of the study. This includes the discussion on the questionnaires and data collection method. Part of the discussion also includes the population and the sample of the research.

**Chapter Four** is devoted towards the analysis of the data gathered from the survey and interviews.
Chapter Five provides the summary of the objectives and the empirical findings and conclusion of the research and a few recommendations to be considered.

1.10 Conclusion

Like elsewhere in the world today, Turkey is opening up to the idea of e-commerce. Turkish citizens have begun to experience the reality of the Information age, whether they realize it or not. In this research we analyze the utilization of e-commerce by Small and Medium Enterprises in Turkey and try to investigate the factors that constraint e-commerce application.