FINAL PROJECT

E-COMMERCE A COMPARISON BETWEEN GREECE AND PORTUGAL

BY

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1.0 Introduction

In the modern time of the Information society one third of households in the European Union is connected with the Internet and two third of Europeans have a mobile phone.

Half of the employees use computers in their work as well it is anticipated in the future that they are going to appear more powerful computers and faster networks. As a result, it is an emergency of reforming the whole economy. With the introduction of new technologies, they should change the practices and employments rules in order to ensure the benefits of technology. The sector of Internet is big enough so as to wield in the whole economy.

Meanings as electronic commerce (e-commerce), electronic business (e-business) and electronic banking transactions (e-banking) consist of regular practice services for a few enterprises and individual users who purchase and make transactions through the Internet.

The public sector, in its effort of using the information’s technology and communication for the development and the offer of effective services for the individual users and the enterprises, invokes a certain amount of electronic government (e-government) programmes.

This project has as a subject matter the Electronic Commerce and the diffusion of it in the whole economy. It examines in depth subjects that concern the security of electronic transactions and protection of personal data. It also refers on importance of using the new technologies in the business sector and the advantages that come from this use.

In addiction to this, it is analysed the role of European Union in to the expansion of e-commerce in the European countries and the future measures for the development of the new technologies.
More specific the project starts with the history of Internet and how it was developed through the years. In the first chapter, the project gives the meaning and the definition of e-commerce, how it leads to the New Economy and analyzes a programme held by the European Union which is called e-Europe action plan. In continuation it deals with the European Union policies about e-commerce and gives information for the European framework, the promotion of e-commerce and the e-Government.

The chapter three begins with the security of electronic transaction and how important it is for the users. In addiction, the protection of privacy and personal data is also a subject that it is analyzed in depth. Furthermore, risks that come from the use of the new technologies are mentioned. As a result cryptography and digital signatures are provided as the solutions taken to lower these risks.

Chapter four is about the abilities and the perspectives of e-commerce. First of all it deals with the connection between e-commerce and employment, secondly the opportunities for the companies and the benefits for providers and consumers. Another major subject which is analyzed in this chapter is the domain names. Valuable information is given about e-Business and its strategic dimension.

The whole chapter five is about legislation for e-commerce. It talks about legal issues about e-commerce business and law for consumers.

In conclusion, chapter six examines the Greek and the Portuguese reality for e-commerce and makes a comparison between these two European countries.
2.0 Internet: History and General Issues

2.1 Internet History

Welcome in the magic world of information and communication. The Internet or World Wide Web (www) is the biggest computer network in our planet. The most interesting thing that makes Internet special is that there's no server to control the whole network, something that happens in an intranet. This is a result from the connection between all the networks and the isolated users all over the world, and it's one of the most important features of the Internet. Used by many people and organizations to communicate and share information, the Internet links computers of different sizes and types. Many organizations and institutions contribute their computing resources to maintain and update various parts of the Net. The Internet is indisputably a collaborative, joint entity. No one person, governmental or non-governmental organization can claim ownership or control of the Internet.

The earliest model of the Internet was created with extreme reliability in mind and it use, was for completely different reason. In 1969, ARPA (Advanced Research Project Agency), which is part of the US Department of Defence, started to build a leased network, which they called ARPANET (Advanced Research Project Agency Network). This network linked four nodes (four American Universities) that were using supercomputers. The impact of ARPANET was tremendous. Using NCP (Network Control Protocol), it allowed the transfer of information between nodes running on the same network, so scientists and researchers were able to access remote computer systems, and share computer resources at a rate of 50 kbps.

In 1972, Ray Tomlinson of BBN (Bolt Beranek and Newman) created the first e-mail program, which enabled electronic messages to be sent over decentralized networks. E-mail rapidly gained popularity, and became the most common means of communication over networks.
In the early 1970s, a group from ARPA began to develop a new protocol, called **TCP/IP** (Transmission Control Protocol/Internet Protocol), which allowed different computer networks to interconnect and communicate with each other. ARPANET also launched its first commercial application, called **TELNET**, during this era. Soon after, ARPANET expanded to connect universities and research centers in Europe, and eventually, became a global network. By the late 1970s, people were able to participate in discussions over networks through newsgroup services, such as USENET.

When other networks, such as **CSNET** (Computer Science Network), **BITNET** (Because its Time Network), **NSFnet** (National Science Foundation network) started to offer e-mail and FTP (File Transfer Protocol) services in the 1980s, inter-network connections became prevalent, so every network had to use the TCP/IP suite of protocols, which replaced NCP completely. The term Internet, which refers to the group of computers communicating via TCP/IP, started to become popular.

In the early 1990s, a menu-based interface, called Gopher, was introduced. Gopher was the first simple way of finding information on the Internet by allowing access to textual information. One of the most important developments in the evolution of the Internet, however, was the **www** (World Wide Web), which is an easy-to-use interface. Its ability to display information in different multimedia forms (text, images, audio, video) made the www extremely popular. After the introduction of the www, several ISPs (Internet Service Providers) started to offer dial-up Internet services to their subscribers. Many companies and businesses also started to offer Internet-related products and services, such as search engines, browsers, programming languages for web development, etc. Currently, there are millions of web sites providing a wide-range of information (cultural, political, scientific, industrial, etc.) on the Internet, in addition to web sites offering e-commerce and online transactions. (http, itep.ae)

**Internet2** (**the second generation of Internet**) launched in 1996 under the auspices of the University Corporation for Advanced Internet Development (UCAID), and is a high-speed computer network development project aimed at
accelerating the creation of tomorrow's Internet. Internet2 is not physically separate from the Internet and will not replace it. Internet2, whose high-speed fiber optic backbone came online in 1999, will accelerate the transfer of network applications and services to more Internet communities, and drive revolutionary Internet applications.

**Next Generation Internet (NGI)** begun in October 1, 1997, the NGI is a multi-agency initiative designed to develop 100 - 1000 times faster and more powerful networking technologies than those currently available on the global internet.

The NGI initiative aims to develop advanced end-to-end networking technologies, and introduce revolutionary applications for use by businesses, universities, schools and, eventually, the general public.
2.2 Internet and Electronic Commerce

2.2.1 Introduction to Electronic Commerce

The history of ecommerce is a history of how Information Technology has transformed business processes. There have been several key steps in the history of e-commerce. The first step came from the development of the Electronic Data Interchange (EDI). EDI is a set of standards developed in the 1960's to exchange business information and do electronic transaction. At first there were several different EDI formats that business could use, so companies still might not be able to interact with each other. However, in 1984 the ASC X12 standard became stable and reliable in transferring large amounts of transactions (http, e-commercetimes.com-part1).

The next major step occurred in 1992 when the Mosaic web-browser was made available, it was the first ‘point and click’ browser. The Mosaic browser was quickly adapted into a downloadable browser, Netscape, which allowed easier access to electronic commerce. The development of DSL was another key moment in the development of e-commerce. DSL allowed quicker access and a persistent connection to the Internet. Christmas of 1998 was another major step in the development of e-commerce. AOL had sales of 1.2 billion over the 10 week holiday season from online sales. The development of Red Hat Linux was also another major step in electronic commerce growth. Linux gave users another choice in a platform other then Windows that was reliable and open-source. Microsoft faced with this competition needed to invest more in many things including electronic commerce.

Napster was an online application used to share music files for free. This application was yet another major step in e-commerce. Many consumers used the site and were dictating what they wanted from the industry. A major merger, in early 2000, between AOL and Time Warner was another major push for electronic commerce. The merger, worth $350 million, brought together a major online company with a traditional company. In February 2000 hackers attacked some major players of e-commerce, including Yahoo, eBay and Amazon. In light of these attacks the need for improved security came to the forefront in the

It is predicted that revenues, up until 2006, will grow 40% to 50% yearly. Expectations of higher prices as well as larger profits for e-commerce business are also present. Also, we will see a larger presence by experienced traditional companies, such as Wal-Mart, on the Internet. It is believed companies in general will take this mixed strategy of having stores online and offline in order to be successful. It can be seen that there will be a large growth in Business-to-Consumer (B2C) e-commerce, which online businesses is selling to individuals. However, even though B2C electronic commerce may be the most recognizable there are different varieties.

Today the largest electronic commerce is Business-to-Business (B2B). Businesses involved in B2B sell their goods to other businesses. In 2001, this form of e-commerce had around $700 billion in transactions. Other varieties growing today include Consumer-to-Consumer (C2C) where consumers sell to each other, for example through auction sites. Peer-to-Peer (P2P) is another form of e-commerce that allows users to share resources and files directly.

**The Future of E-commerce**

The ongoing developments in the convergence of commerce and the Internet are unlikely to replace the physical market. However, more merchants will take advantage of this virtual community where small businesses with better products and better customer service can compete equally with large corporations. The current benefits of e-commerce will continue, and perhaps in the future it will be even more beneficial to those who choose to be part of it. E-commerce is not a trend, because its effects in the business world are widespread. It is definitely here to stay and will continue to grow and progress for the coming years.
2.2.2 What Is E-commerce, Meaning and Definitions

The E in e-commerce stands for "electronic" and the electronics referred to are information and communications technologies. Specifically, E-commerce is the process of managing online financial transactions by individuals and companies. This includes Consumer to Consumer (C2C) Business to Consumers (B2C) and Business-to-Business transactions (B2B).

The focus of e-commerce is on the systems and procedures whereby financial documents and information of all types are exchanged. This includes online credit card transactions, e-cash, e-billing, e-cheques, electronic invoices, purchase orders and financial statements. E-commerce also includes the effects on the organization, the processes that support and govern commercial activities and society as a whole. These include:

- Organizational management
- Commercial negotiations and contracts
- Legal and regulatory frameworks
- Financial settlement arrangements
- Taxation, among many others

Sometimes we see the term "e-business" used instead of "e-commerce". These terms have different meaning but sometimes are synonymous. E-business has a very broad meaning, which includes organizational, cultural and legislative issues. Specifically, e-business is doing many business activities electronically using Internet-centric technologies. The focus of e-business is on the application of Internet technologies in the management of day-to-day business processes.

E-business processes include not only online marketing and sales, but supply-chain and channel management, manufacturing and inventory control, financial operations and employee workflow procedures across the entire organization. Essentially e-business technologies empower customers, employees, suppliers, distributors, vendors and partners by giving them powerful tools for information management and communications.
The intent of e-business is to apply the benefits of Internet technologies to better manage a company's total value-chain with a focus on workflow, distributed workgroup computing and Internet-centric, knowledge-oriented operations at all levels. (http, virtuni.org)

Whatever term we use either e-commerce or e-business, the fact is one. Both terms are in peoples’ lives and they shape their future and their companies. A new technological generation begins which will make peoples’ lives easier.

2.2.3 E-commerce and The New Economy

The spread of Internet-based technologies throughout society has become the dominant economic reality of the 21st century. The e-economy - the use of information and communication technologies for product and process innovation across all sectors of the economy - has emerged as the primary engine of productivity and growth for the global economy. Successful economic strategies will enhance our capacity to adopt and exploit these technologies to create competitive advantage. (http, Strategies for the 21st Century)

In an ideal market economy, a perfect competition delivers peak performance. For perfect competition to exist, not only are many buyers and sellers needed for each particular good, but perfect information about products (for example, availability, quality and specification), demand, prices and delivery schedules are also required. As business-to-business (B2B) commerce shifts to the internet and secure business intranets, better information will move markets closer to the textbook model of perfect competition.

By improving the flow, accuracy and timeliness of information, secure Internet-enabled systems provide greater transparency and efficiency at all points along the supply chain. Simply put, the internet is a continuation of technological improvements that delivers information faster and cheaper, reduces search and transaction costs in online markets and improves the management of transporting an inventorying product. As B2B e-commerce boosts productivity and reduces costs, the long-run beneficiaries will be consumers who will enjoy lower prices and higher living standards.
The New Economy commonly referred to is a subset of a much bigger picture. As described by Levy, the true New Economy consists of dynamic global markets characterized by flexible, digitized production where risk, innovation, being first-to-market, and forging strategic alliances rule the day.

"The New Economy is part of the third major age in our societal growth. First there was agricultural, then industrial, and now the Internet age and we haven't even begun to really enter the Internet age yet."

(Mitchell Levy)

The Birth of B2B E-commerce
Although the Internet originated more than 30 years ago, its commercial viability and significant impact on productivity really began with the creation of the World Wide Web (www) a decade ago. The web enables documents, sound, video, images and other information forms to be instantly viewed and inexpensively accessed from anywhere in the world. The number of web sites has grown from 10,000 in January 1995 to over 29 million today (Figure 1). These are currently more than 2.7 billion pages on the web, and the number is rising by 5 million every day.

Figure 1: Number of Internet Sites Surges at End of Decade

![Graph showing the increase in number of internet sites from 1993 to 2001.](http://netcraft.com/survey)
While e-commerce forecasts vary, researchers agree it is growing fast and that its greatest economic impact will come from B2B e-commerce (which constitutes 90 percent of the total). B2B e-commerce includes the creation of Internet-enabled marketplaces for trading goods and services online and business process improvements from the physical world to secure business intranets. The part of B2B e-commerce expected to grow the fastest is e-marketplaces which use vast amount of information and bring together multiple sellers and buyers.

Despite the recent dot-com implosion, B2B e-commerce is still growing. Many companies are working together to built secure online B2B exchanges that will allow buyers and sellers to transact business and share information through e-marketplaces and supply chains. B2B e-commerce addresses many of the imperfections found untraditional market structures and moves markets closer to perfect competition.

In conclusion, despite the collapse of many dot-coms and the shuttering of many e-marketplaces, the fundamentals behind B2B e-commerce and its impact on the New Economy remain strong. Efficiency improvements and cost savings already archived through B2B e-commerce have likely led to higher productivity growth, lower costs and reduce pricing power, which should allow the economy to grow faster without inflationary pressures. While most of these gains will occur between businesses the greatest beneficiaries of B2B e-commerce will be consumers, who will enjoy lower prices and higher living standards.

### 2.2.4 e-Europe Action Plan

The e-Europe initiative was first proposed by the European Commission at the end of 1999 and endorsed by the European Council in Feira as part of the Lisbon Strategy to modernise the European economy. The objective of eEurope was an ambitious one: to bring every citizen, school and business online and to exploit the potential of the new economy for growth, employment, and inclusion. The first e-Europe Action Plan, 2000-2002, had three aims: a cheaper faster more secure Internet; investment in people and skills and stimulating the use of the Internet. It consisted of 64 targets and nearly all were successfully achieved by
end 2002. The second stage is the e-Europe 2005 Action Plan which was endorsed by the European Council in Seville. The 2005 objective is that Europe should have modern online public services (e-government, e-learning services, e-health services) and a dynamic e-business environment and, as an enabler for these, widespread availability of broadband access at competitive prices and a secure information infrastructure. (http, europa.eu.int/information)

The objective of the action plan is to provide a favourable environment for private investment and for the creation of new jobs, to boost productivity, to modernize public services and to give everyone the opportunity to participate in the global information society. e-Europe 2005 aims to stimulate secure services applications and content based on a widely available broadband infrastructure. This action plan will succeed the e-Europe 2002 action plan endorsed by the Feira European Council in June 2000. e-Europe is a part of the Lisbon strategy to make the European Union the most competitive and dynamic knowledge-based economy with improved employment and social cohesion by 2010.

e-Europe 2002, with the joint effort of all stakeholders, has already delivered major changes and has increased the number of citizens and businesses connected to the Internet. It has reshaped the regulatory environment for communications networks and services and for e-commerce and opened the door to new generations of mobile and multimedia services. It is providing opportunities for people to participate in society and helping the workforce to acquire the skills needed in a knowledge-driven economy. It is bringing computers and the Internet into schools across the Union, bringing governments on-line and focusing attention on the need to ensure a safer online world.

The information society has much untapped potential to improve productivity and the quality of life. This potential is growing due to the technological developments of broadband and multi-platform access, i.e. the possibility to connect to the Internet via other means than the PC, such as digital TV and 3G. These developments are opening up significant economic and social opportunities. New services, applications and content will create new markets and provide the means to increase productivity and hence growth and
employment throughout the economy. They will also provide citizens with more convenient access to information and communication tools.

Most services are provided by the market. Developing new services needs significant investment, most of it from the private sector. But there is a problem: funding more advanced multimedia services depends on the availability of broadband for this service to run on, while funding broadband infrastructure depends on the availability of new services to use it.

Action is needed to stimulate services and infrastructure to create the dynamic where one side develops from the growth of the other. Both developing services and building infrastructures are mainly tasks for the private sector and e-Europe will create a favourable environment for private investment. This means not only developing an investment friendly legal framework but also taking action that stimulates demand and so reduces uncertainty to private investors.

e-Europe 2005 applies a number of measures to address both sides of the equation simultaneously. On the demand side, actions on e-government, e-health, e-learning and e-business are designed to foster the development of new services. In addition to providing both better and cheaper services to citizens, public authorities can use their purchasing power to aggregate demand and provide a crucial pull for new networks. On the supply side, actions on broadband and security should advance the roll-out of infrastructure.

The Lisbon strategy is not just about productivity and growth but also about employment and social cohesion. e-Europe 2005 puts users at the centre. It will improve participation, open up opportunities for everyone and enhance skills. E-Europe contains measures regarding e-inclusion in all action lines. One important tool to achieve this is to ensure multi-platform provision of services. It is generally accepted that not everyone will want to have a PC. Making sure that services, especially online public services, are available over different terminals such as TV sets or mobile phones is crucial to ensuring the inclusion of all citizens.
The eEurope action plan is based on two groups of actions which reinforce each other. On the one hand, it aims to stimulate services, applications and content, covering both online public services and e-business; on the other hand it addresses the underlying broadband infrastructure and security matters.

By 2005, Europe should have:

 ✓ Modern online public services
   • e-government
   • e-learning services
   • e health services
 ✓ a dynamic e-business environment
 ✓ widespread availability of broadband access at competitive prices
 ✓ a secure information infrastructure

The action plan comprises four separate but interlinked tools.
Firstly, policy measures to review and adapt legislation at national and European level, to ensure legislation does not unnecessarily hamper new services, to strengthen competition and interoperability, to improve access to a variety of networks, and to demonstrate political leadership. E-Europe 2005 identifies those areas where public policy can provide an added value and therefore focuses on a limited set of actions in priority areas. Some key targets are:

➢ Connecting public administrations, schools, health care to broadband
➢ Interactive public services, accessible for all, and offered on multiple platforms
➢ Provide online health services
➢ Removal of obstacles to the deployment of broadband networks
➢ Review of legislation affecting e-business
➢ Creation of a Cyber Security Task Force
Secondly, e-Europe will facilitate the exchange of experience, of good practices and demonstration projects, but also of sharing the lessons from failures. Projects will be launched to accelerate the roll-out of leading edge applications and infrastructure. Thirdly, policy measures will be monitored and better focussed by benchmarking of the progress made in achieving the objectives and of the policies in support of the objectives. Fourthly, an overall co-ordination of existing policies will bring out synergies between proposed actions. A steering group will provide a better overview of policy developments and ensure a good information exchange between national and European policy makers and the private sector. This steering group would also make an early participation of candidate countries possible.

This action plan is a proposal to Member States to take some far-reaching commitments. It is an invitation to the private sector to work with the Commission and Member States to realise the e-Europe objectives. It sets out the initiatives the Commission will or is willing to take. Overall the action plan sets the scene for a coordinated European policy approach on information society issues. The e-Europe action plan should be confirmed as a key element in the Lisbon strategy. If successful, this plan will have a significant impact on growth and productivity, employment and social cohesion in Europe. (http, europa.eu)
2.3 The Globalization Of Services

Economic theory defines services as intangible, perishable, heterogeneous goods that usually require consumption at the same time and in the same place as their production (Pitt et al., 1999). Service Industry has been identified as the fastest growing component of the global economy. The sectors of retail, wholesale, construction, transportation, banking, finance, communication, professional, insurance, tourism, education and health care account today more than 25 percent of the total global trade and this percentage is growing rapidly (Kotabe et al., 1998).

As a result, the service sector today drives the Direct Foreign Investments among industrialised countries and shapes the markets of the developing countries (i.e. India, China). The rapid increase in trade of services worldwide is mainly due to the government deregulation and technological advances in data processing and telecommunications. In particular this dramatic increase in the globalisation of services is attributed to:

- Service suppliers following manufacturers who have globalised.
- The opening of previously closed markets (i.e. China and Russia).
- The elimination of exporting barriers.
- The development of certain economies and the demand for more services.
- Technological developments and particular the emergence of the Internet.

Internet and information technology constitute the evolutionary agent of service industry. Internet’s rapid adoption by both consumers and businesses has caused fundamental changes in the economics of services and in turn new network-based global e-commerce business models have emerged and have began to dominate to that we call today New Economy.

"Internet is a virtual realm where products and services exist as digital information and can be delivered through information-based channels."

(Meuter et al., 2000)
It is generally accepted that the nature of service products ranks distribution as the major determinant of business effectiveness and efficiency and thus the success of the service provider. Within the global market place, timely distribution is closely linked with the complexity of *Capacity Management*.

Capacity Management is created due to the perishability of the service product. Unlike the consumption of the tangible goods where time is available for inspection of quality, services are produced and consumed almost simultaneously (Carmen & Langeard, 1980). Therefore, service managers cannot pre-produce and store services for future consumption and facing the challenge of maintaining their operation at its optimum capacity while searching for sufficient demand to match their capacity in order to maximise revenue.

Information technology and particular the Internet has become increasingly important in the direct and indirect distribution of services, and has assumed a central role in the crucial links among service providers, distributors and consumers. Figure 2 shows how Internet and its related technologies are shaping the Service organisations distribution channels.
The term *Electronic distribution* (e-distribution) is well known today as *Electronic Commerce* (e-Commerce). Since the emergence of the Internet different authors have contributed different definitions about e-commerce. However, all focus to the central theme that e-commerce handles business transaction over communication networks. *Dutta*, defines e-commerce as:

"The sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunication networks"

(Dutta, 1997)
The particular definition includes all the elements that e-commerce is incorporating today. Buyer-and-seller relationships, transactions between businesses, and internal processes that support transactions within corporations.

**Figure 3: E-commerce in Europe, 1999 (as a % by product)**

Undoubtedly, e-commerce today has gained much of attention by practitioners and academics worldwide. This attention is rather justified, since e-commerce very rapidly dictated organisations of all sizes to redesign their strategies and to involve them into a new challenging marketplace and market-space (Rayport & Svioka, 1995). Its phenomenal growth has accelerated the technological evolution and has altered the nature of competition as businesses worldwide used to know it.

*Figure 3* shows, which industries are driving e-commerce development within Europe. Currently Tourism Industry, as a genuine Service Industry, presents a high rate (17%) of e-commerce diffusion.
2.4 The Policies on E-commerce

2.4.1 The European Framework

The European e-commerce framework is intended to be a light one. Legislation is limited to what is strictly necessary in order to avoid any over-regulation that would act as a deterrent. It sets rules and principles that are valid throughout the European Union only in essential areas such as personal data, privacy, copyrights, legal responsibility, illegal and harmful content, cybercrime, taxation, etc.

This framework is technology-neutral. This is made necessary by the fact that e-commerce and new Internet services are based on technology in constant evolution. Any technological solution embedded in law could make this law obsolete before it comes into force. It must therefore be up to industry to choose and implement the most appropriate technological solutions to uphold the law at a given time.

E-commerce legislation is complemented by self-regulation, which the Commission sees as an efficient and flexible alternative to address certain issues: for instance through codes of good conduct or alternative dispute resolution mechanisms. This, of course, implies some real cooperation between government and industry, leading to a kind of co-regulation.

Another problem with e-commerce is that it ignores borders. No individual government can regulate the Internet in isolation. This also applies to the E.U as a whole. At the same time, creating a consistent global framework is a major challenge considering the diversity of political and legal systems, as well as cultures. However, we must agree on minimum rules at international level and to this end, and whenever possible, E.U legislation embeds the necessary international cooperation mechanisms.

In addition to legislative measures, the E.U has also adopted more specific measures to support the development of e-commerce in the E.U:
1. The promotion of electronic procurement by E.U governments.
2. Setting-up an "eu" top-level domain name.
3. Measures aimed to help small and medium sized enterprises enter in the e-commerce era. This includes take-up and best practice research projects, as well as the more recent "Go digital initiative".

In the sector of business, we are concerned about the fact that only a fraction of small companies are actively using the Internet for electronic commerce. They are not getting the full benefits of e-business along the full chain from supply and procurement ("upstream") to sales and customer management ("downstream"). Yet, in the E.U alone, there are an estimated 19 million SMEs, who thus play a significant role in our economy.

However, in some E.U Member States the figures are looking more reassuring. In the UK, for example, the Department of Trade and Industry found that the connectivity rate for UK micro businesses (0-9 employees) rose from 15% to an amazing 55% between 1999 and 2000.

In an effort to encourage small businesses to use the Internet commercially, the European Commission launched "GoDigital" earlier this year. GoDigital is aimed at helping them use the Internet more and better.

The ambitious programme of E.U Single Market legislation, which will effectively remove legal obstacles for cross-border electronic trade between E.U Member States and create more legal security for enterprises, should also contribute to improving the situation. The e-Europe initiative has succeeded in strengthening the Member States' resolve to adapt and harmonise their laws on a fast-track.

Further work, however, is still required at international level, also to improve consumer confidence. Consumers need the reassurance that, if anything goes seriously wrong with their Internet transaction or with the handling of their personal or financial data, they will be properly protected, either by law or by an effective and enforceable self-regulatory programme. (http, cordis.lu/ist)
2.4.2 Promotion of E-commerce

Assuming we have genuine and fair competition, and a high level of security and privacy. This is still not enough to ensure the long-term development of the Internet. You do not sell a service simply because it is cheap and safe.

The convergence process puts distinct distribution platforms in direct competition with one another. Nowadays, we already see the telecommunications' operators in direct rivalry with cable operators, and three-way rivalry with satellite operators will follow. But the average person is not interested in the delivery method. What matters is ‘what’ is delivered, the content.

It is clear that Internet surfing is competing with TV viewing, that active media competes with passive media, and that, to some extent, they will merge. For instance, elements of interactivity are being integrated in the TV watching experience, and streaming media is developing on the Web.

But some differentiation will remain. If you need to be connected 24 hours a day, a mobile terminal may be the solution. But if you want to watch a movie, the display of your mobile phone or PDA will not be up to the job. It is the TV set which is then likely to be the preferred option. But if you then want to surf on the archives of the world, you will probably log on to your computer. Hence, while different access platforms are competing with each other, they are at the same time highly complementary. Attracting people to these different platforms will depend on the services offered: services are what make the user tick, and the thrill is in the content. In a information society for all, content must be rich, diversified, in all languages and it must meet specific cultural demands.

This is the key to the rapid development of the mobile Internet, where people will be charged for services used. It is also essential for broadband Internet, where people pay extra money to get a faster connection, but what is the point if the content does not justify the speed?

The passage to the Euro was a major stimulant for new interactive services. The Euro added transparency to the European e-market by allowing for instant
comparison, as well as additional security by scrapping the conversion exercise. Talking about content, it encompasses audiovisual and software, but also on-line entertainment, video games, e-commerce applications, publishing, education as well as many public services. It covers all the digitised information, images, sounds and applications that can be transmitted over the networks.

Government is a major player in this context. It owns a considerable quantity of high quality content linked to Europe’s formidable cultural heritage. Digitisation of this public content and access to it is of course an important task for E.U governments.

One of the many e-Europe actions touches directly on the problem of co-ordinating digitisation policies and programmes in the Member States. The Lund Principles outline a complete set of basic issues to be treated and co-ordination mechanisms are being progressively put in place.

Government is also a major driver of Internet uptake through the offer of high-quality on-line services. Much progress has already been achieved regarding the use of the Internet by governments. In particular, access to public documents and legislation is improving. This is good for openness and transparency. But it is only a first step.

What is still missing is real interactivity, which is the essence of the Web. Once we have true interactivity, a major reform of public services will become possible. Responsiveness, citizen-friendliness and quality of service will become new standards for public services.

In parallel, government will become more efficient. Old and expensive service delivery methods will be replaced by more carefully tailored and targeted services, with important cost-savings and increased efficiency.

For all this to come true, it is of course necessary to invest in digital technologies in front offices. But even more important is the reorganising of the administration, the changes in the operation of the back office. e-Government is a huge win-win opportunity. (http, europa.eu.int/information_society)
2.4.3 e-Government

Over the past decade technology developments have stimulated a discussion about the future role of government. On the one hand must encourage entrepreneurial initiative and the empowerment of citizens. On the other hand the state still has an important role in facilitating economic growth and social inclusion, which go hand in hand in the new economy: only digitally literate people can reap all the benefits the information revolution can provide. Information revolution can provide the governments and administrations all over the world, in the developed and developing countries alike, with better tools to empower citizens and serve them better. That is what e-Government, or e-Democracy should be all about.

e-Government means using the Internet to deliver quick and interactive public services for citizens. The result will be a productivity gain for public administrations, and the removal of red tape for companies. But e-Government goes beyond services. Transparent and interactive administrations bring citizens closer to government. Participation in the democratic process is stimulated. This means that e-Government includes two complementary aspects of each of us as citizens. On the one hand, we are seen as the well-informed and better-served citizen. On the other hand, we are regarded as the participative citizen.

e-Democracy is thus a natural part of the e-Government strategy in that it implies putting the citizen at the heart of government. It challenges the public sector to innovate and it acts as a driving force for back-office changes in administration.

A successful e-Government will increasingly become an everyday matter for citizens and by providing effective public services online, it will encourage people who might not otherwise use the Internet to adopt it as part of their daily lives. The E.U Member States are intensifying their efforts about e-Government after having been slow to react to the potential of the Internet. Policy targets have been defined and the supply of online services is increased. Comprehensive government sites are now being set up. However, progress in the E.U is still uneven. (http, ipf.co.uk)
When discussing e-Government, it is important to look beyond the front-office supply of services. The back-offices should be reorganised so services can be delivered efficiently and speedily with only one interface for the citizen. e-Government should be used to make public services simpler. For example, in the case of a tax declaration, this would mean that the relevant information held by the public authorities would already be entered into the declaration form.

To sum up, much work remains until the full benefits of e-Government can be brought to citizens and businesses. The needs of the citizens should always be at the centre, not technology nor the needs of administrations. The essentials of e-Government, and thus the basis for E.U work on Information Society and e-Government is that policies should be:

**Interactive**

- Enhancing effective government, enhancing participation in democracy.
- Achieving efficiency and simplicity of services by joining-up administrations.

**Inclusive**

- Preventing *digital divide,* support the disadvantaged and people with special needs.
- Promoting public Internet and multimedia access points.

**Entrepreneurial**

- Supplying online transactions for business
- Supporting public/private partnerships

**Multilingual/Multicultural**

- Stimulating cross-border use of services and information
- Encouraging public services in more than one language.
2.4.4 European Union Policies On E-commerce Issues

Europe and its member states have already realized the potential of e-business as the driving force for the future of the European Economic growth. Towards this vision, European Union has considered that Small And Medium Sized Enterprises (SMEs) must take advantage of the new technologies and participate actively in global markets.

Consortiums have the infrastructure and the necessary funds to develop new technologies, especially e-commerce. For that reason European Union concentrate its efforts to assist small and medium enterprises to evolve these ideas.

The European Union and its member states aim to create a reliable, stable and open environment that encourages SMEs to adopt e-business practices. Consequently, Member States have devised a wide range of policies, instruments and measures to pro-actively help SMEs and stimulate the use of e-business tools and techniques. Table 1 illustrates the general framework of member states policies and initiatives in support e-business for SMEs.

Table 1: General Framework Of National Policies Regarding The E-business adoption by E.U’s SMEs

- **Awareness raising measures that inform European Business Community about advantages of e-commerce.**
- **Ensure the adequate Supply of Information and communication Technologies skills.**
- **SME support networks are a popular type of e-business initiative, probably due to the established nature of general business support in most countries.**
- **Support for more 'advanced' e-business applications (e.g. B2A marketplaces and e-business partnerships)**
In addition to European Union actions vital part in this effort have the E.U governments. Public policy must provide a long-term vision, clear objectives, and constancy over time. The priorities are:

1. Continue to democratise access to new communication services by completing telecommunications liberalisation to drive prices further down.
2. Cater for the need for security and confidence in cyberspace of users and businesses alike.
3. Promote content, which is essential for the development of mobiles and broadband services in the context of convergence.
4. Accelerate e-commerce, especially for European small and medium sized enterprises.
5. Bridge the digital divide by giving skills to all.

In conclusion it is important to mention that in order to achieve the desirable development both E.U and governments should work together to bring e-commerce in our lives.
3.0 Electronic Transactions

3.1 Security of Electronic Transactions

In many ways the transaction security of a www site can be compromised. There are numerous means for an unsavoury individual to snoop into what you are sending or receiving from the other end, including, but not limited to, the following:

✓ **Spoofing.** The client can trick your server into believing that the request or post that it's sending is from some other site. This is known as IP and DNS spoofing. Your server may respond believing that the client is “trusted”, when it isn’t.

✓ **Sniffing.** In some cases, it is possible for an unsavoury individual to snatch packets as they are being communicated over the network, especially with the newer cellular modems, unsecured phone lines, and so on.

✓ **Traffic Analysis.** Using sampling techniques on the packets or, more commonly, the server log files, an individual can learn about the nature of the transactions that your site processes. This may be used, for instance, in analyzing the competitive level of your site by a site that provides the same services or products.

In each of these cases, the risk can be alleviated (or greatly reduced). In the cases of spoofing and sniffing, the preferred technique is to use data encryption, or signed data for the transaction. When the receiving end gets what your server sends them, they must have the appropriate key to decrypt and make use of it. In the case of traffic analysis of the data files, assigning the file permissions on the directory, logs, and the files themselves is the preferred technique. The logs themselves can be encrypted for permanent archival. Nowadays, most commercially available servers and their respective clients implement encrypted transactions via some, usually proprietary, means.
The client-side of the www transaction has analogies to some of the preceding potential problems as well. The client may need to be assured that the server it is receiving its data from is who it says it is, and that the data itself is truly what was sent from the server. Additionally, the client may be asked to execute some code, in the form of a Java applet, JavaScript or Perl script, or some other helper application. In general, it is not recommended to enable the embedded scripting features within a given browser if you have secure or proprietary data anywhere within access of the user running the browser. The users should be made aware of such possibilities.

3.1.1 Federal Trade Commission-Facts for Consumers

Since more and more people worldwide are using internet for their transactions, either to shop or to invest, there is a number of things that they must know in order to make their transactions as safe and secure as possible. The Federal Trade Commission (FTC) provides consumers with a list of what they should pay attention to when they process electronic transactions. A sample of this list can be the following:

- **Use a secure browser**: software that encrypts the purchase information we send over the Internet and help us guard the security of our information as it is transmitted to a website. We should use the most up-to-date browser by using the latest version available from the manufacturer. When submitting our purchase information, we look for the "lock" icon on the browser's status bar, and the phrase "https" in the URL address for a website, to be sure our information is secure during transmission.

- **Check the site's privacy policy**: before we provide any personal financial information to a website we should check the site's privacy policy. In particular, determine how the information will be used or shared with others. Also check the site's statements about the security provided for our information. If we are not comfortable with the policy, we should consider doing business elsewhere.
Read and understand the refund and shipping policies of a website we visit, before we make our purchase.

Keep our personal information private. Don't disclose our personal information our address, telephone number, Social Security number, bank account number or e-mail address, unless we know who's collecting the information, why they're collecting it and how they'll use it.

Give payment information only to businesses we know and trust, and only when and where it is appropriate - like an order form. Never give our password to anyone online. Do not download files sent to us by strangers or click on hyperlinks from people we don't know. Opening a file could expose your system to a computer virus.

Keep records of our online transactions and check our e-mail for contacts by merchants with whom we are doing business. Merchants may send us important information about our purchases.

Review your monthly credit card and bank statements for any errors or unauthorized purchases promptly and thoroughly. Notify your credit or debit card issuer immediately if your credit or debit card or checkbook is lost or stolen, or if you suspect someone is using your accounts without your permission.

(http, federal trade commission-facts for consumers)

Those transactions via internet hide a lot of risks. Therefore, consumers should pay attention to the above remarks and also they should report immediately problems with their transactions, either stolen credit cards or incorrectly credit charges in order to avoid unpleasant circumstances.
3.2 Protection of Privacy and Personal Data

Definition of privacy may differ from society to society. In other words, what people consider private matter and what not depends on cultural, social and political factors. However, regardless of these factors, privacy can be expressed as the restriction of information diffusion. Specifically, the term ‘personal data’ is defined to mean “any information recorded in a document in which it can practically be processed wholly or partly by any automatic means or otherwise which relates directly or indirectly to a living individual who is identified or identifiable from that information or from that and other information in the possession of the data user including any expression of opinion about the individual and any indication of the intentions of the data user in respect of that individual” (http, bileta.ac.uk).

The above definition will include in its scope:

- Any information or opinion, as long as it is identifiable to a living person, and
- Data which is processed both manually and electronically.

According to Prathiba Mahanamahewa, a Ph.D Researcher in IT Law, University of Queensland, Australia and Lecturer in Law, Faculty of Law, University of Colombo, “the most commonly stated motive for data protection legislation is to protect individual privacy from being compromised by computerization and to provide a framework for finding a balance between the interests of the individual, the data user and the community at large. Countries without a data protection law may lose business from Europe because the E.U Directive on the Protection of Personal Data prohibits the transfer of personal data to non-E.U countries that do not meet the European "adequacy" standard for data protection. As a result, this Directive places burdens on different countries that collect personal data online. The absence of data privacy legislation in India for instance has proved to be a handicap to Europe and the U.S.A. in business process outsourcing to Indian companies”. (http, sundaytimes lk)
Personal Data

Online delivery of public services means putting personal data to the computer, and having it transmitted from one place to another. Data collectors or service providers or data registers are involved in this activity. Therefore the personal data of customers and citizens should be protected by law without keeping any room for manipulation, possible misuse or unauthorized disclosure to a third party. Privacy concerns have been clearly identified as a barrier to the development of e-business. All the public surveys conducted for large business in different countries illustrated a lack of confidence that consumers' personal information would be protected if they entered into transactions on the Internet. There are a number of threats regarding online transactions. A sample of these threats can be the following:

- **Web bugs**: can disclose personal information that many of us would prefer to keep confidential. Web bugs are images embedded in a web page that can transmit information to a remote computer when the page is viewed. The remote computer can track which computer accesses which page. They are also known as clear GIFs, or 1 x 1 GIFs. A web bug is a tiny graphic, included in a web page or e-mail message, used to identify who or how many people are viewing the material. They can be placed in the image tags of the underlying HTML code of the page and they can also be placed in HTML enabled e-mail messages. For instance, Toys-R-Us.com used a tracking device to compile information about online shoppers but stopped after it was discovered. (http, sundaytimes.lk)

- **Internet Service Providers (ISPs)**, can divulge a host of information about an individual, including name, address, and credit card. They can recapture e-mail that was sent through their services. In addition, ISPs can recapture session information, such as the URLs visited by a user through its service. ISPs at times have disclosed private information about individuals, leading to embarrassment and adverse employment consequences.

- **Cookies**: Is small text files placed on an Internet user's computer when a website is accessed. They contain information sent by the server to the user's browser. If desired, a web user can sometimes view cookies in the
source code of the header of a web page. However, generally, the information collected is not displayed to the user, but is recorded, tracked, and stored by the user's computer and browser. The website can read the cookie later to identify the personal preferences.

Information like this will enable the user to navigate the website more easily on return visits. Websites, for instance, can recall registration information, so that users need not re-register each visit. Similarly, cookies enable each user to move forward and backward within a site. Most cookies last during a user's "session," but some can be programmed to last forever - persistent cookies - with the corresponding power to keep track of the user's movements on the Web.

Export of personal data is a business necessity for many information management activities or provision of services in general. Information technology stresses this asset, consumers can be easily localised in cyberspace, and they can also be profiled, not only using the data they have consented to provide, but also using unknown traces.

Information exchange reality across boundaries was early analysed in Europe from the perspective of the Internal Market: due to the passing of privacy and data protection laws in different member states, obstacles to the free flow of data could be created due to the disparity of legislation.

Directive 95/46/EC was passed in order to harmonise divergent legislation in what concerns the protection of fundamental rights and freedoms of natural persons (in particular their right to privacy with respect to the processing of personal data) to reach the Internal Market's requirement of free flow of personal data.

This legislation can be analysed in the light of the WTO rules since it can affect trade in services. In this paper we will address two main questions connected to the present and future of the protection of privacy and personal data within the World Trade Organization (WTO) context. The approach will be developed from a European perspective.
3.3 Risks in E-commerce

The risks associated with E-Commerce can be broadly classified into the following categories:

Business Practices

E-Commerce often involves transactions between strangers. However, appearances can be deceiving and several questions arise: How can a consumer know

- Whether a company will really carry out its orders for products and services as it claims?
- Whether there are product guarantees, or whether the company will allow the return of products?
- How a company will use any information submitted?

With the anonymity of E-Commerce, the unscrupulous can establish (and abandon) electronic identities with relative ease. This makes it crucial that people know that those companies, with which they are doing business, disclose and follow certain business practices. Without such information, and the assurance that the company has a history of following such practices, consumers could face an increased risk of loss, fraud, inconvenience, or unsatisfied expectations.

Information Protection

It is important for consumers to have confidence that they have reached a properly identified www site, and that the company takes appropriate steps to protect private consumer information. Although it is relatively easy to establish a www site on the Internet, the underlying technology can entail a multitude of information protection and related security issues. As a result, the confidentiality of sensitive information transmitted over the Internet can be compromised without the use of basic encryption techniques, consumer credit card numbers can be intercepted and stolen during transmission. Without appropriate firewalls and other security practices, private consumer information residing on a company's E-Commerce computer system can be intentionally or unintentionally
provided to third parties not related to the company's business. Security breaches may also include unauthorized access to the consumer's computer through an Internet connection. Thus, potential consumers involved in E-Commerce may seek assurance that the company has effective information protection controls and a history of protecting private consumer information.

**Transaction Integrity**

Without proper controls, electronic transactions and documents can be easily changed, lost, duplicated and incorrectly processed. These attributes may cause the integrity of electronic transactions and documents to be questioned, causing disputes regarding the terms of a transaction and the related billing. Potential consumers involved in E-Commerce may seek assurance that the company has effective transaction integrity controls and a history of processing its transactions accurately, completely, and promptly, and of appropriately billing its consumers. (http, tech.irt.org)
3.4 Privacy and Trust

The consumer viewpoint

This paragraph emphasizes the significance of privacy and transaction security from the consumer’s viewpoint.

Very high numbers of users value their privacy on the Internet. Privacy is also currently the most important issue facing Internet users and a major reason for people not purchasing. Security (or the loss thereof) in E-Commerce is a reason of serious concern for Internet users and is a primary reason for people not purchasing.

Usually, international laws for businesses, including quality control and consumer rights, vary from country to country. Therefore, for example, in case of a violation of conditions of payment or fraud, it might be prohibitive or relatively expensive for a customer in Australia to pursue a company in Portugal. Such possibilities have led a large number of consumers being very concerned about international business. (http, eff.org)

3.4.1 Privacy and Building Trust (Local efforts)

Privacy and server logs

Most www servers log every access to them. The log usually includes the IP/DNS address, the time of the download, the user’s name (if known by user authentication or obtained by the indented protocol), the URL requested, the status of the request, and the size of the data transmitted. Some browsers also provide the client used by the reader, the URL that the client came from, and the user’s e-mail address. Revealing any of these data could be potentially damaging to a user.

Many users these days are aware of the information related to them being logged, but do not necessarily support all of it. It seems the only type of information about them that the users recommend being logged, is the page and the time of its request, and the browser being used. Many users seem to be comfortable with providing demographic information if its intent and application was made
clear to them. They would volunteer demographic information to a site if a statement was provided as to what information was being collected, how it will be used and if the data would be used in an aggregate (as opposed to individual) form only.

Thus, for a site to gain consumer trust, the policies regarding any practices that involve using record of user accesses for statistics generation and/or debugging, should be made known to the users. If such access logs are being used for purposes other than statistical, such as creating mailing lists, then users should be made aware of that. Such "disclaimer" can appear at places where the users have to fill a form field (in cases such as ordering a product, subscribing to a mailing list, etc.), as well as, in a section with company's "privacy policies". Lapse in security can lead to loss of privacy. Some sites may leave the server logs open for casual viewing by local users at the site. It is therefore important that the site is well administered keeping the log files secure. (http, truste.org)

**Privacy and use of Cookies**

A "cookie" is a mechanism to make up for the stateless nature of the http protocol. Cookies can be used to store information that you have provided at some point when you access a www site. Among that data are the name and IP address of your computer, the flavour of browser you are using, the operating system you are running, the URL of the www document you accessed, and the URL of the document you were last viewing. Such information can be used for controversial purposes. A high percentage of users do accept cookies. This consumer trust should not be betrayed. Along with the other privacy policies a site uses, the policy for cookies should also be made known to the users.

3.4.2 **Privacy and Building Trust (Global efforts)**

Recently, in order to gain consumer confidence, many companies have joined programs administered by objective third parties to make their privacy policies and their business practices explicit. Two particularly notable initiatives in that direction are: the **WebTrust** E-Commerce seal of assurance from the public accounting profession and the **TRUSTe** "trustmark" program that takes
users directly to the privacy statement of a company that has joined a program. In some sense, these "global" efforts are supplementary to the "local" efforts as they provide credibility to them.

**WebTrust**

In response to the concerns related to E-Commerce and to increase consumer confidence, the public accounting profession has developed and is promoting this set of principles and criteria for business-to-consumer E-Commerce, referred to as the WebTrust™ Principles and Criteria (http://cpawebtrust.org), and the related WebTrust seal of assurance. Independent and objective certified public accountant (CPA) or chartered accountant (CA) can provide assurance services to evaluate and test whether a particular www site meets these principles and criteria. (http://cpawebtrust.org/)

The WebTrust seal of assurance is a symbolic representation of a practitioner's objective report. It also indicates to consumers that they need to click to see practitioner's report. This seal can be displayed on the company's www site together with links to the practitioner's report and other relevant information. This seal was developed by VeriSign. VeriSign encryption and authentication technology and practices help assure the consumer that the seal on a www site is authentic and the site is entitled to display it:

**TRUSTe**

TRUSTe offers a program that addresses the privacy concerns of consumers and www sites. The TRUSTe program enables companies to develop privacy statements that reflect the information gathering and dissemination practices of their site. Its goal is to provide:

- Online consumers with control over their personal information.
• WWW publishers with a standardized, cost-effective solution for both satisfying the business model of their site and addressing consumers' anxiety over sharing personal information online.

A cornerstone of the program is the TRUSTe "trustmark," an online branded seal that takes users directly to a company’s privacy statement:

The trustmark is awarded only to sites that adhere to TRUSTe’s established privacy principles and agree to comply with ongoing TRUSTe oversight and resolution process. The privacy principles embody fair information practices approved by the U.S. Department of Commerce, Federal Trade Commission, and prominent industry-represented organizations and associations.

TRUSTe’s program has gained significant momentum in the past year, as online publishers mobilize to address the privacy concerns of their consumers. Since February 1998, many prominent companies have signed on as TRUSTe participants, including America Online, The New York Times, and Yahoo. (http, truste.org)

P3P

W3C’s Platform for Privacy Preferences Project (P3P) provides a framework for informed Internet interactions. The goal of P3P is to enable www sites to express their privacy practices and users to exercise preferences over those practices. P3P is designed to help users reach agreements with services, such as www sites that declare privacy practices and make data requests. (http,w3.org/P3P)
3.5 Cryptography

People mean different things when they talk about cryptography. Children play with toy ciphers and secret languages. However, these have little to do with real security and strong encryption. Strong encryption is the kind of encryption that can be used to protect information of real value against organized criminals, multinational corporations, and major governments. Strong encryption used to be only military business; however, in the information society it has become one of the central tools for maintaining privacy and confidentiality.

As we move into an information society, the technological means for global surveillance of millions of individual people are becoming available to major governments. Cryptography has become one of the main tools for privacy, trust, access control, electronic payments, corporate security, and countless other fields. Cryptography is no longer a military thing that should not be messed with. It is time to de-mystify cryptography and make full use of the advantages it provides.

Basic terminology

Suppose that someone wants to send a message to a receiver, and wants to be sure that no-one else can read the message. However, there is the possibility that someone else opens the letter or hears the electronic communication. In cryptographic terminology, the message is called plaintext or cleartext. Encoding the contents of the message in such a way that hides its contents from outsiders is called encryption. The encrypted message is called the ciphertext. The process of retrieving the plaintext from the ciphertext is called decryption. Encryption and decryption usually make use of a key, and the coding method is such that decryption can be performed only by knowing the proper key.

Cryptography is the art or science of keeping messages secret. Cryptanalysis is the art of breaking ciphers, i.e. retrieving the plaintext without knowing the proper key. People who do cryptography are cryptographers, and practitioners of cryptanalysis are cryptanalysts.
Cryptography deals with all aspects of secure messaging, authentication, digital signatures, electronic money, and other applications. Cryptology is the branch of mathematics that studies the mathematical foundations of cryptographic methods. (http, ssh.fi/support/cryptography)

**Basic cryptographic algorithms**

A method of encryption and decryption is called a cipher. Some cryptographic methods rely on the secrecy of the algorithms; such algorithms are only of historical interest and are not adequate for real-world needs. All modern algorithms use a key to control encryption and decryption; a message can be decrypted only if the key matches the encryption key.

There are two classes of key-based encryption algorithms, symmetric (or secret-key) and asymmetric (or public-key) algorithms. The difference is that symmetric algorithms use the same key for encryption and decryption (or the decryption key is easily derived from the encryption key), whereas asymmetric algorithms use a different key for encryption and decryption, and the decryption key cannot be derived from the encryption key.

Symmetric algorithms can be divided into stream ciphers and block ciphers. Stream ciphers can encrypt a single bit of plaintext at a time, whereas block ciphers take a number of bits (typically 64 bits in modern ciphers), and encrypt them as a single unit. (http, ssh.fi/support/cryptography/algorithms)

Asymmetric ciphers (also called public-key algorithms or generally public-key cryptography) permit the encryption key to be public; it can even be published in a newspaper, allowing anyone to encrypt with the key, whereas only the proper recipient, who knows the decryption key can decrypt the message. The encryption key is also called the public key and the decryption key the private key or secret key.
3.6 Digital Signatures

Some public-key algorithms can be used to generate digital signatures. A digital signature is a small amount of data that was created using some secret key, and there is a public key that can be used to verify that the signature was really generated using the corresponding private key. The algorithm used to generate the signature must be such that without knowing the secret key it is not possible to create a signature that would verify as valid.

The components that a Digital Signature comprise of:

1. **Your public key:** This is the part that any one can get a copy of and is part of the verification system.
2. **Your name and e-mail address:** This is necessary for contact information purposes and to enable the viewer to identify the details.
3. **Expiration date of the public key:** This part of the signature is used to set a shelf life and to ensure that in the event of prolonged abuse of a signature eventually the signature is reset.
4. **Name of the company:** This section identifies the company that the signature belongs too.
5. **Serial number of the Digital ID:** This part is a unique number that is bundled to the signature for tracking ad extra identification reasons.
6. **Digital signature of the CA (certification Authority):** This is a signature that is issued by the authority that issues the certificates.

Digital signatures are used to verify that a message really comes from the claimed sender, assuming only the sender knows the secret key corresponding to public key. They can also be used to timestamp documents: a trusted party signs the document and its timestamp with secret key, thus testifying that the document existed at the stated time.

Digital signatures can also be used to testify or certify that a public key belongs to a particular person. This is done by signing the combination of the key and the
information about its owner by a trusted key. The digital signature by a third party, owner of the trusted key, the public key and information about the owner of the public key are often called certificates.

The reason for trusting that third party key may again be that it was signed by another trusted key. Eventually some key must be a root of the trust hierarchy that is, it is not trusted because it was signed by somebody, but because you believe a priori that the key can be trusted.

A digital signature of an arbitrary document is typically created by computing a message digest from the document, and concatenating it with information about the signer, a timestamp, etc. The resulting string is then encrypted using the private key of the signer using a suitable algorithm. The resulting encrypted block of bits is the signature. It is often distributed together with information about the public key that was used to sign it. To verify a signature, the recipient first determines whether it trusts that the key belongs to the person it is supposed to belong to (using the web of trust or a priori knowledge), and then decrypts the signature using the public key of the person. If the signature decrypts properly and the information matches that of the message the signature is accepted as valid. (http,ssh.fi/support/cryptography/algorithms)

**Reasons for using Digital Signature:**

- It insures by means of verification and validation that the user is whom he/she claims to be. This is done by combine the users credential to the digital certificate and in turn this method uses one point of authentication.
- Digital certificates insure data Integrity giving the user piece of mind that the message or transaction has not been accidentally or maliciously altered. This is done cryptographically.
- Digital certificates ensure confidentiality and ensure that messages can only be read by authorized intended recipients.
- Digital certificates also verify date and time so that senders or recipients can not dispute if the message was actually sent or received.
3.7 Electronic Payment

3.7.1 Electronic Checks

Generally speaking, checks are the most popular types of payment. According to statistical data, over 68 billion of checks were written by consumers and corporations last year in the U.S.A and it is estimated that this number will increase. Electronic checks are not so popular yet, since consumers paying on the Internet have accepted credit cards as the standard, but according to experts adoption of e-payments "will grow in time because the attachment in the United States to check payments will lead many to use this method if it is available. Cost savings will be gained from whatever level of usage is attained in the short-run" (http, cybersource.com). Using e-checks for our daily transactions is not a difficult procedure. These type of transactions are processed online in real-time. Payers can be authenticated via their address, driver's license number and/or Social Security number. They provide their checking account information-bank routing and account number. The check data is encrypted and transmitted to the ACH network. Apart from the fact the e-checks is an easy procedure, businesses that use electronic check as type of payment enjoy also a crucial number of benefits such as:

- **Increased sales**: the use of electronic checks, in addition to credit card or physical checks enhances payment options, convenience and satisfaction. Electronic checks can help increase sales by capturing orders from those consumers who don't have a credit card or who do not prefer to use their credit cards.

- **Reduced order and billing costs**: The cost to process a check electronically is lower than processing the transaction through a credit card. In addition, the use of electronic check services can reduce the need for invoicing and lower the cost of accounts receivable administration.

- **Faster payment**: Checks accepted online enable funds to be deposited in about half the time as that associated with paper-based checks. The
ability to accept checks electronically can also increase on-time payments by offering people and businesses an alternative to mail-based payment.

Using electronic checks for our daily transactions has also risks. For instance, a fraud may happen and create enormous problems. For that reason, a number of regulations was created in which the 'payee' keeps electronic debit authorizations on file for at least two years.

### 3.7.2 Credit Cards

Credit cards are the most popular type not only of regular payments but also of electronic payments. Research has shown that site owners have doubled their sales as well as their profits the time they decided to add credit cards as a method of online payment. Internet credit card transaction processing can be done in three ways:

- **Manual offline processing** (secure credit card capture) Site owners can collect the orders via snail mail, fax, phone, or credit card capture in customers' shopping cart. Using their cart's built-in encryption, they can securely download customers' credit card information and process the payment offline, using the virtual merchant terminal they already have.

- **Real-time online processing**: This method automatically processes the credit card purchase in real time, with online authorization and settlement of transactions. If they choose to accept payments in real time over the Internet, the first step is to apply for an Internet merchant account. They will also require a secure payment processing gateway. The Etherlinx shopping carts are compatible with many payment gateways.

Using credit cards for our daily transactions has a number of advantages and disadvantages. (http, etherlinx.ca)

**Advantages**

- **Cheaper for short term borrowing**: credit cards can be cheaper than a personal loan for short term borrowing - interest is only paid on the remaining debt, not the full loan amount.
• **Greater flexibility**: you only need to pay a minimum amount each month or you can pay up to the total outstanding amount.

• **No redemption penalties**: paying off a loan early can result in redemption penalties.

• **Interest free credit period**: typically, up to 56 days interest free credit can be obtained.

• **Remote purchasing**: enables you to purchase products and services remotely via the internet or phone.

• **Additional benefits**: many cards offer additional benefits such as additional insurance cover on purchases, cash back, air miles and discounts on holidays.

**Disadvantages**

• **Expensive cash withdrawals**: withdrawing cash from a cash point can be very expensive.

• **Insufficient credit limit**: you may not be able to obtain as much credit as you want.

• **Easier to get into debt**: can encourage the purchasing of goods and services you cannot really afford; supports a ‘buy now, worry later’ mentality.

• **Open to fraudulent use**: using a credit card, especially remotely, introduces an element of risk as the card details may fall into the wrong hands resulting in fraudulent purchases on the card.

(http, aboutcreditcards.co.uk)

3.7.3 **Electronic Funds Transfer at Point Of Sale  direct debit (EFTPOS)**

EFTPOS is an electronic payments system that allows purchasers to make electronic payments, or withdraw cash, from nominated bank accounts to the
trading accounts of retailers at the point of transaction. Automatic Teller Machines (ATMs) provide customers with the opportunity to withdraw cash make account inquiries or transfer funds between accounts. The Consumer Electronic Clearing System (CECS) regulations and standards deal only with these two types of electronic payments. When smart cards become viable they can be included in CECS. Credit cards are not included in CECS. Access to these networks is provided by a card encoded with the customer's information. The customer uses this card, in conjunction with a pin number, to make transactions. To validate the purchase, the information is verified via an on-line link to a processing centre which checks to ensure sufficient funds are available.

There are five main participants of this payment system, including:

- **Card Issuers**: these are financial institutions which provide customers with a card to enable them to withdraw funds or make payments. Card issuers include all banks and the majority of building societies and credit unions. American Express, Diners Club and some large retailers also issue cards but these can only be used with merchants that are customers of the card issuer. Card issuers have bilateral contracts with many Merchant Acquirers for access to almost all EFTPOS facilities.

- **Merchant Acquirers**: these are financial institutions of the merchants, they can also be Card Issuers. They provide the merchant with the infrastructure to undertake the transaction, make payments to the merchant and forward transactions to the card issuers for settlement.

- **Payment Service Bureaux**: these companies provide transaction services for a range of participants - they receive the transaction information from the Merchant Acquirer and process the transactions on behalf of the card issuer.

- **Merchants**: Except in the case of the largest merchants, the merchant acquirer installs the infrastructure to enable card holders to purchase goods, services and to obtain cash. The transaction information is forwarded to the Merchant Acquirer who credits the merchant's nominated account with the transaction amount. To gain access to the EFTPOS network retailers must enter a Merchant agreement with a
Merchant Acquirer. This contract links the retailer’s trading account (which is maintained by the Merchant Acquirer) to the Merchant Acquirer’s EFTPOS payment system.

Cardholders: are consumers who agreed to the conditions governing the use of the card - they agree to provide access to their cheque, savings or credit account for debiting purposes. (http, mbs.unimelb.edu.au)

3.7.4 Smart Card

A smart card is a credit-card sized plastic card embedded with an integrated circuit chip that makes it "smart". This marriage between a convenient plastic card and a microprocessor allows an immense amount of information to be stored, accessed and processed either online or offline. Smart cards can store several hundred times more data than a conventional card with a magnetic stripe. The information or application stored in the IC chip is transferred through an electronic module that interconnects with a terminal or a card reader. A contactless smart card has an antenna coil which communicates with a receiving antenna to transfer information. Depending on the type of the embedded chip, smart cards can be either memory cards or processor cards.

Smart Cards As a Payment System

A payment function is an integral part of most smart card applications because most services accessible by smart cards must be paid one way or the other. But before smart cards are widely used as a preferred payment method in electronic commerce, two outstanding issues must be resolved:

- legal protection for loss and fraud
- demand and supply for microtransactions

(Http, CREC-KPMG White Paper Smart Cards.htm)
4.0 Abilities and Perspectives of E-commerce

4.1 E-commerce and Employment

The rapid development of the e-commerce will have consequences as far as employment and working relationships are concerned, especially in commerce. But what extent will they take and how positive will be final balance cannot be estimated so far with certainty.

Nowadays, it is estimated that about 23 million households are universally connected to the Internet, a fact which is translated in 55-60 million users. Other calculations report that five years from now the Internet users will have mount up to 550 million that is 10% of the population. EuroFlot’s and EuroCommerce’s studies report that in Europe are already functioning about 150,000 commercial sites in the Internet, which have created according to the calculation 3,000 new jobs by themselves, while in the U.S where e-commerce is far more developed, it is estimated that have been created 800,000 jobs.

It is obvious that the development of e-commerce and the creation of a crucial masse of users-consumers via the electronic commerce, presents tremendous possibilities of operational action and creation of jobs which will lead to wide structural changes mainly in the fields of commerce. In this area mainly, but not only, it is expected to have rearrangements due to the creation of new enterprises to the extent of others but even the creation of problems because of the viability of some traditional commercial companies. As a result, the e-commerce will cause important consequences to the market of employment. Those repercussions refer mostly to the forms of employment which will be developed and to the products of the employees which will be demanded.

On the other hand, if for example the e-commerce gains an important part of the market combined with a corresponding decrease of the traditional forms of the sale to shops, then there will probably be discharges especially in big shops. However, these will always be the necessity of the “natural” delivery of the products. There may be a
decrease in the traditional “rushing out” to the shops but there will be an increase to the need for delivery of the products.

Furthermore, since the e-commerce market will grow, the new technologies will create new expert professions in informatics (like salesmen through PC, network managers, responsible of the electronic trade security etc.) in the companies which will design and operate electronic shops for others or for commercial enterprises which will integrate the e-commerce in their structure.

In consequence according to the current facts it is rather difficult to calculate the final quantitative result referring to the employment and there is certain estimation that in the end there will be a decrease of about 5-10% in jobs in the commercial sector.

However, besides the employment issue, the development of e-commerce will have serious effects to the working context and the working condition. As it is marked beforehand new specialities and duties will emerge, new qualifications and abilities will be demanded.

The promotion of the products thought the Internet has already created new needs. The possibilities and opportunities that the Internet provides for electronic sales leads young people but also some of the existing staff to get occupied professionally with the electronic sales.

According to the research made by the HELTRUN, the new qualifications and duties for the employees in the e-commerce will be focused on 3 main forms of activity:

1. To the management of the products promotion, to the marketing, to the surveillance of the competitors
2. To the management of the communication between the enterprise, the suppliers and the customers
3. To the management of the information and the technological infrastructure and the communications.

In the addition to that, the future working place will be different from the one we already know. The flexible forms of employment will be reinforced by the
development of the e-commerce. The customers' service for example through the Internet will work on a 24 hours basis. Perhaps it will be demanded some sort of redistribution of employees and certain jobs will not demand the natural presence in the area of the enterprise. The work will be mainly focused on the results and not on fixed duties and roles. Based on this frame, the development of the e-commerce causes new challenges and necessities to business and to the employees.

On the employees' side, this development apart from the consequences in the employment will cause the change in the field of the working relationships and the working conditions as the new needs will lead to an even greater flexibility of work.

In this frame the e-commerce is expected not only to affect significantly the working hours, the availability of the employee for work, the leaves and the days off, the hygiene and the security in the working places, but also the insurance rights. In general terms it must be expected a decrease of the need for the employee's natural presence in the working place and an increase of the employment from distance. Furthermore, it must be expected an increasing flexibility as far as the working time is concerned, whether by the form of part time employment and the interrupted hours, or by the form of employment based on the (final) work which is expected to be delivered.

Still, it is very likely that this form of employment will not be protected, as it happens in the traditional employment which is settled by the working legislation and the collective employment conventions which can lead to extreme phenomena's of flexibility which will be reduced in every way the working cost, in order to raise the competition. Thus, it emerges the need the syndicates to intervene actively to the evolution that the development of e-commerce will produce, by recording the changes in the working field and afterwards by setting in collective bases via the conversion in employment the terms of payment and employment and those of employees.
Last but not least, the matter of education and training for the employees in e-commerce is very important since the new products, the capabilities and the skills, which will be demanded, will be rather high. Education will be the key point for the employees' adjustment in the new conditions.

In conclusion, the import and the development of e-commerce will cause new challenges and new problems to the sector and also to the employees. In every case, it should not be let only under the control of the market and to be done uncontrollably. On the contrary, both employees and syndicates must have an efficient dialog from the latter's side especially under the umbrella of collective negotiations in order to set in a collective basis the minimum payment and working conditions terms.


4.2 Company Opportunities

E-Commerce is a fantastic area of business marketing which is now becoming more popular and is an aspect of our century. All businesses, no matter the size or income, are turning to the internet as a way to communicate to the outer world, and prospective customers. E-Commerce is an asset to all aspiring people and all are welcome to use its facilities and uses. The internet has created more opportunities for new arriving businesses which may not be as big as the large corporate businesses who have already taken advantage of the Internet.

The internet consists of many drivers for companies looking to “convert” to the web; however it holds as many barriers for companies especially those who are smaller, due to lack of resources or money.

There are many drivers to the take up of E-Commerce which I have described below. Firstly, the internet is a sort of “encyclopaedia” which allows company’s to research into specific areas of the business for example products and services that previous companies in the same area of business, have undertook. The ease of information access is also a benefit for an SME, which as a communication channel, the internet allows the sharing of knowledge and data between a number of companies. SMEs can now access information, resources and knowledge which previously were only available to big corporations, such as global marketing tools, and distribution systems.

Another benefit would be that there is a rapid increase in numbers of people, who are buying, selling, and performing transactions over the web. People are now starting to depend on the internet to carry out tasks which previously would have been done physically. Therefore, the popularity that the internet holds with the public (customers) is definitely a drive for SME’s. This is because it is now possible to target a wider range of customers over one wavelength of communication, which is proving to be continuingly popular.

Concerning SME’s which cater for a niche market, this over channel communication portal, allows people to come to you, rather than you chasing them to buy your product. This way, it ensures that you are not wasting much
needed budget on advertisement and to attract potential customers, but customers themselves come to you, ensuring a good customer-business interaction, and a better turnout for both sides. (http, opportunitywales.co.uk)

Another advantage would be that the internet is an inexpensive source of information for the company and data can be easily exchanged between company’s of the same nature. EDI (electronic data interchange) is the sharing of data in the form of electronic mail for data such as invoices, order forms etc. and advantage would be that it provides good means of communicating with businesses interlinked within the SME for example suppliers. It makes communication more easily available as a majority of company’s worldwide uses.

Some other advantages for companies are:

- **More exposure, more profit**: Marketing a product or a service via the Internet provides direct company exposure 24 hours a day, 365 days a year all over the world. This gives the company a better chance to earn more profit by providing the means to reach more customers.

- **Reduces company expenses**: Setting up and maintaining an e-commerce web site is more economical than setting up a retail outlet or maintaining a large office. The company no longer needs to spend so much on promotional materials or installation of expensive equipment to be used for customer service, nor does it need to hire more personnel to do the inventory duties. An online database keeps the purchasing history of the company and the customers. A single person can retrieve the database to check purchasing histories easily. It can also reduce operations cost, as the employees can electronically share and access data, preventing the need for multiple printings.

- **Information sharing between business Partners and other businesses**: E-commerce provides an effective way to exchange business information with partners, as it is Internet-based. E-commerce also allows companies to buy the goods and services presented by other online companies (suppliers) - known as business-to-business (B2B). (http, itep.ae/english/EducationCenter)
4.3 Bank Services and Products Through Internet

Without a doubt, the Internet has created sweeping changes in the stock brokerage and trading landscape. While there have always been a limited number of individual investors who trade stocks over the very short-term, buying and selling a security in the same day or even in the same hour, the Internet has created an entirely new category of investors who attempt to make their fortunes through extremely rapid buying and selling. Many online investors are not seeking personal investment advice from their brokers; they know what they want, when they want it and how much of it they want thanks to the research they are able to do online. As a result, they do not need to interact with an individual stock broker. More than one in every three individual investors’ equity trades is now being made online.

**Online banking**

Three types of banking organizations are now competing fiercely for online customers:

1. Internet-based, or "virtual," banks that have no traditional storefronts, lobbies or ATMs.
2. Traditional banks that offer Internet services as an additional convenience.
3. Online stock brokerages that have expanded into banking or bank-like services.

The business model of online banking is intriguing: They have the potential to be more cost-effective to operate than traditional institutions. When the traditional expenditures associated with brick-and-mortar banks are eliminated and new customer-friendly features, such as online payments and account transaction records, are available to the user, the Internet bank has some advantages. The customer is often offered a much simpler, faster and more direct banking experience via online access. Account information can be reviewed with the click of a mouse at any time, and inter-account transfers can be seamlessly executed.
Electronic Billing and Payments

Online billing and payments certainly may benefit both the consumer and the business world, it could save paper and some of the estimated $20 billion that businesses spend on postage yearly.

Businesses can send bills electronically through a customer’s e-mail. When the customer is ready to pay, one simple click will automatically send the funds to an e-bill clearinghouse. There, the payment is deducted from the customer’s account and the vendor’s account is credited.

Many banks now cooperate with online payment exchanges to enable the payment of bills through online banking instead of physical check writing. The convenience can be extraordinary. For example, a consumer can set up an online bank account to automatically pay standard bills on the first of each month without writing a check, buying a stamp or sealing an envelope.

There are some online transaction services that enable both consumers and businesses to easily set up accounts that facilitate the transfer of money to anyone with an e-mail address.

Insurance

Insurance is one of the slowest sectors of financial services to move the selling process to the Internet. In the same way that very few insurance companies have converted to direct mail to sell insurance, many companies are resisting using the Internet for direct selling. Insurance remains an agent-to-customer relationship industry. However, the purchase of some types of insurance via the Internet can offer the customer tremendous cost advantages. For example, life insurance lends itself to cost/features comparison, and the Internet is both an ideal way to receive such information and an excellent medium for making the purchase. Likewise, automobile insurance is already being sold directly via the Internet. In fact, this trend has led to an increased use of links to automobile insurance sites (and auto financing sites) by consumers.
The future role of the insurance agent may be geared more toward customer service and general advising roles. Nonetheless, most of today’s online insurance sites require the services of a traditional agent to finalize the sale. This will change quickly as more new sites sell directly via online methods without the use of insurance agents.

Products such as travel, credit or burial insurance have relatively high fixed costs and low value, and they are relatively expensive to produce. Customers purchasing these products generally pay a high price per dollar of coverage. The Internet allows the disintermediation of this high overhead for low face value products, meaning that prices can be lowered and more insurance sold by reducing the transaction cost.

**Mortgages**

For those seeking home financing, either for the purchase of a home or to refinance an existing mortgage, the Internet is a great place to start. Just type the word "mortgage" in your favourite search engine and you'll be sifting through hundreds of search results. Furthermore, many companies with Internet services reduce or even eliminate the standard 1% loan origination fee.

The automation that the Internet brings to many mortgage processes is a great benefit both to consumers and businesses. The time it takes to originate, process and underwrite a mortgage application can be whittled down to hours and days instead of weeks and months. The Internet is also a vast source of information on all aspects of the mortgage industry, resulting in empowered and better informed customers. While much of the legwork can be done over the Internet with online mortgage companies, actually closing a loan electronically is still a few years down the road.
4.4 Benefits from E-commerce for Providers and Consumers

4.4.1 Benefits of E-commerce for Providers

In today's competitive environment, a business must have an online presence or risk being left behind. Consequently, a growing number of small and medium-size businesses (SMBs), currently an estimated 75 million, want to take their businesses online. To address this need, service providers are providing applications on a hosted basis to businesses by becoming application service providers (ASPs).

While the benefits of having an online presence are obvious, and it's clear that most, if not all businesses, could benefit from it, most businesses are unclear about how to get started. Businesses going online have many options available for development, hosting and maintenance of their online business. These range from free or inexpensive entry-level solutions to very expensive, custom deployments. Selecting the right one is a major factor in succeeding online.

Creating an online business is, in many ways, similar to building a brick and mortar business. Once you've established the focus of your business, you need to find a place to operate it. In reality, most lease office space from a large organization that specializes in workspace for businesses that includes all the necessary facilities and maintenance. The world of e-commerce real estate is no different. Building, hosting, and maintaining your own online presence can be expensive, technically challenging, and can delay your time-to-market.

By plugging into powerful hosted applications, including Web sites, e-commerce, back-office automation, fulfilment processes, and customer relationship management, all businesses, whether consumer oriented, service oriented, or a combination, will benefit from leveraging Internet technologies to fully automate and integrate all aspects of their businesses. Hosted solutions and services provide the easiest, most complete and most cost effective way to quickly and easily establish a commerce-enabled online presence. Businesses simply pay a monthly fee, much like a lease for physical office space, to use the resources of
the service provider. There is typically no software to install, nor is there hardware to purchase or maintain.

Aside from the obvious cost benefits, service providers provide a single point of contact for the SMB, offering infrastructure, products, services and support. As SMBs look to ASPs for hosted applications, the ASPs themselves are trying to deploy the solutions to meet the demand. There are several key components to successfully supporting SMBs on the Internet.

First, the ASP needs to have the infrastructure to support the applications and customers. Not only is this the most technically complicated piece of the equation, but it also tends to be the most expensive element. The infrastructure requires high speed pipes to the Internet, routers to direct and manage the traffic, high-availability servers to run the applications, and advanced database technology to track and bill customers. The servers comprise numerous technologies designed to provide the best performance and availability. An essential component to the infrastructure is process: process for installing new applications, adding hardware and new customers, and dealing with customer issues.

Of equal importance to the infrastructure are the applications that are being hosted. While they clearly must meet customer needs, they also must be able to handle the demands that an online environment places on the application. Basically, a single application is handling thousands of simultaneous users.

Finally, customer service is a critical success factor. ASPs are counting on the volumes of SMBs that exist to sign up for these services. However, SMBs frequently lack the expertise, bandwidth and resources to use these services. ASPs need to offer superb service to attract and retain SMB customers, as well offer services, such as "build it for me" and "maintain it for me." The benefits of hosted applications for SMBs are very clear. Fortunately, as these businesses move toward the Web to become successful e-businesses, they will be able to choose from a variety of solutions and providers. (http,serverworldmagazine.com)
4.4.2 Benefits of E-commerce for consumers

Rasmussen (1996) believes that the benefits a customer gets from using the Internet mirror those of firms. Individuals, teams and organizations can all gain a competitive advantage if people can access the Internet whenever they want, whether it is for communications, research, placing orders, support or service, provided the information is relevant, accurate, timely, clear and often, concise. As speed and access to information continue to improve, individuals and organizations need to have both the research skills to locate, decipher and interpret information and opportunities to use this. (John D. Haynes)

- **Convenient and time-saving shopping**
  The e-market is open 24 hours, every day. There is no need for the customers to travel, wait in long lines or even carry an item back home. A click on the product and your credit card information (for Electronic Fund Transfer) are all it takes to purchase an item and have it delivered. Aside from credit cards, customers can also choose from a variety of convenient payment.

- **Better choices.**
  Aside from the opportunity to visit a wide variety of online shops, e-commerce allows customers to check complete information about a certain product. In addition to that, there are sales persons pressuring you into buying a product.

- **Cheaper prices.**
  Going online reduces company expenses. As a result, customers can buy items from many online companies at lower prices than offered by traditional stores.

- **Customer satisfaction.**
  The Internet provides real-time, interactive communication. The company utilizes these features of the Internet to quickly respond to customer queries, thus providing better customer service and greater customer satisfaction.

(http, itep.ae/english/EducationCenter)
4.5 Domain Name

Domain names are unique identifiers used to help find websites on the Internet. In much the same way that your first and last names help to identify who you are to others, domain names enable you to easily find and surf to your favorite websites just by typing that domain name (web address) into your browser window. (http, hostlead.com)

The Internet’s Domain Name System or DNS, was designed with ease of use in mind. You have to register your domain name and then your business is protected for as long as you rent that name. Two websites can not have the same domain name. Each computer on the Internet is assigned an IP address or Internet Protocol. This all-numeric IP address (i.e.: 192.168.0.1) is what distinguishes your computer as unique from all the other computers online today. Likewise, computer servers, which serve up web pages to the Internet world, are also assigned unique IP addresses. It’s very difficult to type a long IP address like 192.168.01 each time you want to open a site. Not only would that be time consuming, but also confusing. Hence the reason why domain names have become an effective means of labeling different websites across the Internet. Each unique name identifies a different website online. In simper terms, the mapping of domain names to IP addresses takes place behind the scenes, which means that when you type “NBC.com” into your browser window, your computer, which speaks only in numbers, translates “NBC.com” into the IP number associated with the website you want to view. (http, britannica.com)

Traditionally, domain names were written in ASCII, which is based on English. Internationalized Domain Names (IDN) are domain names or Web addresses, represented by local (native) language characters which includes non-ASCII characters. IDNs are now available in more than 350 languages, such as Korean, Greek, Russian, Chinese etc (E.g.com). In March 2003, the Internet Engineering Task Force (IETF) finalized a set of standards for internationalized domain names (IDN). These standards convert foreign language characters into Unicode, a computer industry standard, and then encode these characters in ASCII for transmission over the Internet’s DNS. During the discussion phase of the IDN
protocols development, there were some competing ASCII-compatible encoding (ACE) schemes proposed but an agreement was reached eventually to standardize on a type of ACE called "Punycode". (http, hostlibrary.com)

Most businesses that have a website will need to have a domain name, not just to protect their business online, but to ensure their site is recognised by visitors. If businesses don't have a domain name, they may end up with their website having an address such as http://www.thisismybusiness.myisp.net/ - something which is not particularly professional looking nor memorable for visitors. For example use the name of your business or something that is relevant and to visitors who may want to return. When you register a domain name, you become part of a directory of all the domain names and their corresponding computers on the Internet. (http, clearlybusiness.com)

**Domain Dispute Procedures in the European Union**

Domain names themselves have not been afforded intellectual property protection but, rather, are perceived as a right granted to the domain registrant under contract between the registrant and the relevant domain name registration authority. The registrant of a domain name is merely given a contractual right to use the domain name. Thus, the registration of a domain name in and of itself does not confer intellectual property rights, to the registrant.

While the gTLDs and 18 ccTLDs are governed by the Internet Corporation for Assigned Names and Numbers' ("ICANN") Uniform Domain Name Dispute Resolution Policy ("UDRP") - which provides for the online arbitration of disputes through the World Intellectual Property Organization's ("WIPO") Arbitration and Mediation Center, or another approved provider - most domain name registries in the E.U do not offer dispute resolution services and instead rely exclusively on the courts to handle disputes. Some of the exceptions to this are Belgium, Greece and Italy.

In December 2000, **Belgium** changed its domain name registration policy from restricted to unrestricted and also instituted mandatory alternative dispute resolution for domain name disputes. The mandatory dispute resolution process
is similar to the UDRP in that proceedings are conducted online. According to the Belgium Registry, DNS BE, a complainant must prove that:

- the registrant's domain name is identical or confusingly similar to a trademark or service mark in which the complainant has rights;
- the registrant has no rights or legitimate interests with respect to the domain name; and
- the registrant's domain name has been registered in bad faith or is being used in bad faith.

**Greece** is another country in which the registry, the Foundation for Research and Technology Hellas Institute of Computer Science, has provided an expedited method for parties to resolve disputes. However, unlike in Belgium, the registry in Greece will become actively involved in helping the parties reach a settlement. If the parties cannot reach a settlement, the National Telecommunications Committee (NTC), which oversees the Greek domain name registry, has the power to make an official ruling to resolve disputes. Also unlike in Belgium, there are no established policies or guidelines for the NTC to use when resolving disputes. Interested parties reserve the right to appeal NTC decisions to the courts.

**Italy** takes another approach and gives the domain registrant the option at the time it submits its domain name application to agree to have any disputes resolved by arbitration. ( http, GigaLaw.com)

**Distribution Analysis of multilingual domain names (IDN's)**

In December 2003, the testing phase of Multilingual domains also known as Internationalized Domain Names (IDN), went live with the addition of over 350,000 multilingual domains to the .com and .net registries. As of 1st January 2004, the .com registry contained 300,409 IDN's, whereas the .net registry had 79,630 IDN's, representing around 1.25% of the total .com and .net domains. WebHosting.Info has analyzed these 380,039 IDN domains that are now live, and provided a detailed insight on trends and patterns across these domains. Those
are now live, and provided a detailed insight on trends and patterns across these domains.

Table 2: Country-wise Distribution of Internationalized Domain Name (IDN)

<table>
<thead>
<tr>
<th>Country</th>
<th>.COM IDNs</th>
<th>.NET IDNs</th>
<th>Total IDNs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>122,444</td>
<td>30,001</td>
<td>152,447</td>
<td>37.22%</td>
</tr>
<tr>
<td>United States</td>
<td>65,948</td>
<td>18,462</td>
<td>84,402</td>
<td>22.21%</td>
</tr>
<tr>
<td>Japan</td>
<td>58,849</td>
<td>13,417</td>
<td>72,266</td>
<td>19.52%</td>
</tr>
<tr>
<td>Germany</td>
<td>22,575</td>
<td>2,033</td>
<td>24,608</td>
<td>3.36%</td>
</tr>
<tr>
<td>China</td>
<td>15,195</td>
<td>2,949</td>
<td>18,144</td>
<td>4.77%</td>
</tr>
<tr>
<td>Denmark</td>
<td>8,434</td>
<td>2,725</td>
<td>11,159</td>
<td>2.94%</td>
</tr>
<tr>
<td>Hong Kong SAR</td>
<td>5,244</td>
<td>746</td>
<td>5,990</td>
<td>1.55%</td>
</tr>
<tr>
<td>Sweden</td>
<td>2,179</td>
<td>614</td>
<td>2,793</td>
<td>0.77%</td>
</tr>
<tr>
<td>Spain</td>
<td>2,107</td>
<td>483</td>
<td>2,590</td>
<td>0.68%</td>
</tr>
<tr>
<td>Australia</td>
<td>2,885</td>
<td>200</td>
<td>3,084</td>
<td>0.83%</td>
</tr>
<tr>
<td>Norway</td>
<td>2,932</td>
<td>624</td>
<td>3,556</td>
<td>0.94%</td>
</tr>
<tr>
<td>France</td>
<td>2,134</td>
<td>439</td>
<td>2,573</td>
<td>0.68%</td>
</tr>
<tr>
<td>Russia</td>
<td>1,019</td>
<td>532</td>
<td>1,551</td>
<td>0.41%</td>
</tr>
<tr>
<td>Canada</td>
<td>1,206</td>
<td>186</td>
<td>1,392</td>
<td>0.36%</td>
</tr>
<tr>
<td>Taiwan</td>
<td>937</td>
<td>138</td>
<td>1,075</td>
<td>0.27%</td>
</tr>
</tbody>
</table>

Source: Clearlybusiness.com2004

This data shows that more than 78% of IDN domains are registered by companies in only three countries - Korea, United States and Japan. Korea alone accounting for 141,447 domains, followed by United States with 84,402 domains and Japan with 72,193 domains.

Domain Name Extension

Each domain name ends with what’s known as an extension. A domain name extension is another tool of identification. An extension or TLD (Top Level Domain) consists of the last few letters following the final period or “dot” in the name itself. The extension /TLD for google.com is “.com.” There are a host of top-level domain name extensions available today, such as:

- .com (Commercial Organizations)
- .net (Networks)
- .org (Not-for-profit Organizations)
- .edu (Educational)
The above listing of domain name extensions is often referred to as generic or gTLDs. (http, hostlead.com)

**Country Extensions**

Domain name extensions can even be indicative of location. Location oriented domain name extensions are always two letters in-length and based on the two-character ISO country codes. Country specific domain names are known as ccTLDs or country-code TLDs. Examples of such extensions are:

- .fr (France)
- .it (Italy)
- .jp (Japan)
- .us (United States)
- .gr (Greece)
- .br (Brazil)
- .tw (Taiwan)
- .pt (Portugal)

There are currently over 240 different countries and territories represented with such available extensions.

**New Extensions**

ICANN is currently working to continue to add new TLDs to the list of those already register-able. The newest TLDs, some of which are already available include:

- .aero (air-transport industry specific)
- .biz (business)
- .coop (cooperative)
- .info (information and generic)
- .museum (museum specific)
- .name (individuals)
4.6 E-Business And Its Strategic Dimension

4.6.1 The Importance of Value Chain Analysis Within A Competitive Environment

In many respects business strategy within organisations, is linked with the pursuit of competitive advantage. According to Porter (1985), Value Chain Analysis can assist an organisation to identify its sources of competitive advantage within its physical marketplace.

**Figure 4- Value Chain Model**

The Value Chain model describes the sequence of value-adding activities (Figure 4) of a single organisation, connecting an organisations supply side with its demand side. This model suggests that companies can co-ordinate their individual activities in order to contribute value to the company and in turn to achieve competitive advantage through differentiation. Porter’s value chain identifies each of the individual activities and their inter-relationships. These activities are categorised into two groups.

- **Primary activities**: Those activities, which directly contribute to the development of a product or a service.
Support activities: All other activities, which enable the primary activities to occur.

Table 3: Activities identified in Porter’s value chain model

- **Inbound Logistics**: receiving, storing, distribution of raw materials.
- **Operations**: transformation of inputs into the final form.
- **Outbound Logistics**: collecting, storing and distribution of the final product.
- **Marketing and Sales**: inducing buyers to make purchases.
- **Service**: enhancing or maintaining the value of a product.
- **Firm Infrastructure**: general management, planning, finance, accounting, and
- **Human Resource Management**: recruitment, hiring, training, compensation.
- **Technology Development**: efforts to improve the product or process of the firm.

The Value Chain of a single organisation is connected by its relationships with other organisations Value chains, which in turn set up's the Industry’s Value Chain System within a physical marketplace. (Figure 5)

Figure 5—The value Chain System

(Source: Adapted from M.E Porter, Competitive Advantage, Free Press, 1985)
4.6.2 Information as a Strategic asset

Porter's Value chain model has been characterised as an effective tool for business strategic planning as well as a valuable element for identifying sources of competitive advantage. However, the emergence of the Internet and the rise of e-commerce have created an unstable environment where organisations are striving to find the desirable success factors within the emerging New Economy. Under this perspective, the physical marketplace and consequently the traditional value chain model are evolving creating at the same time new sources of competitive advantage. The generator of these new sources of organisation success is attributed to Information.

"Information is the glue that holds together the structure of all businesses"

(Evans & Wurster)

For many years information distribution process has been regarded as the basic element of competition. Information was responsible for indicating success factors within the physical marketplace as well as directing the operational functions of the organisations output creation process (Hayek, 1945, 1946). However, Information processing under the spectrum of classical production theory can not perceived as a factor of production since it cannot produce any physical output for the marketplace (Weiber & Kollman, 1998). Nevertheless, information and its functions today are gaining a new strategic dimension, and contribute towards the creation of the new Virtual Value Chain.

4.6.3 The Virtual Value Chain Model

The diffusion of Networked Information Systems (i.e. E-commerce) within the physical marketplace actually created a Virtual Marketplace dominated by digitalised information and communication channels. According to Rayport and Sviokla (1994), this virtual marketplace can be referred to as an artificial "Marketspace" where information and virtual transactions develop. Therefore, it
can be argued that this virtual marketspace today, coexists with the physical marketplace and fosters its own autonomous value creation activities (Weiber & Kollman, 1998). In other words a **Virtual Value Chain** coordinates the digital information and its activities (*collection, systemisation, selection, combination, and distribution of information etc*) (Figure 6) independent of a physical value chain.

![Figure 6- The Virtual Value Chain Model](image)

(Source: Adapted by Weiber, R., Kollman, T., 1998)

Nevertheless, interrelationships between virtual value chains and physical value chains continue to coexist and to determine the success factors within new markets (Figure 7). In addition, the existence of a common **Value Matrix between the two value chains** is considered to be the strongest link that ensures the smooth transition of the interrelated activities. Figure 7 shows the combination of the two Value Chains.
"While until now, information in the marketplace has simply had a supporting function for physical production processes, in the future it will become an independent factor of production and competition."

(Weiber & Kollman, 1998).

The above statement suggests that information and its basic activities processing and transferring will determine in the future the effectiveness and efficiency of successful market outputs (i.e. products & services) which in the long run will influence the source of competitive advantage. Effectiveness within the Virtual Value Chain can be achieved through the acquisition and transfer of information.
- **Acquisition of Information** is referred to the organisation's capability to obtain information about customers' wants and needs, in order to tailor products and services in a cost-efficient and effective way within the marketplace/marketspace.

- **Transfer of Information** is referred to the provision of the right information (i.e., Quality of Information) to potential customers, which in turn can compare and evaluate accordingly to its individual needs and wants.

Therefore, it can be argued that the evolving marketplace and the emerging marketspace are forcing organisations to incorporate processes and functions that filter information, based on quality and speed (Figure 8). The combination of these two elements can determine the success factors in real markets and can become a freestanding factor of production in virtual markets.

**Figure 8 - Factors of market success in the marketplace and marketspace**

Source: Adapted by Weiber, R., Kollman, T., 1998
Figure 8 suggests that Information assumes a central role among the factors of success within the new marketspace. Under this general strategic spectrum several authors (Weiber & Kollman, 1998, Rayport & Sviokla, 1994/1995) have proposed different strategic approaches. However, all of them recognise Marketing Operations as the most critical activity, which needs to be adjusted between the two Value Chains. This adjustment according to Weiber & Kollman (1998) must specialise in the use of information.

"Managers who understand how to master both the physical and the virtual value chains will be able to extract value in the most efficient and effective manner."

(Rayport and Sviokla, 1994)

4.6.4 Information Based Marketing

Information Based Marketing concentrates all the functions in order an organisation to deliver qualitative information to the marketspace (Weiber & Kollman, 1998). However, such functions prerequisite the utilisation of information networks. Internet and its related technologies provide this platform, which enable in turn organisations to exchange information with customers in an individual basis. Therefore through networked communication channels new forms of exchange relationships are developed, which can deliver to organisations new forms of competitive advantage.

Those advantages can be realised by analysing the factors of Speed, Flexibility, Closeness to Customer, and Target group. (Figure 9) Organisations that incorporate each of these competition factors effectively within their information strategies are capable of providing tailored and personalised information to customers. Thus, creating extra value for the consumer more successfully, which in turn can positively influence the organisations Virtual and Physical Value Chain.
"In the market system divided into marketplace and marketspace, information becomes the central competitive advantage through interactive information processes between supplier and customer, so that in the future, companies, aided by information-based marketing must concrete more on acquisition and analysis of information for customer-oriented output bundles."

(Weiber & Kollman, 1998).

Nevertheless, upon this statement it can be argued, that the development of customer-oriented output bundles, prerequisite from organisations to have embedded within their corporate philosophy a customer oriented strategy independent from networked systems. This strategic approach highlights in many respects the concept of Relationship Marketing. The following section provides an insight into RM strategies regarding Hospitality organisations.
4.6.5 Relationship Marketing

Relationship Marketing (RM) concept has been emerged as an important topic in both academic and practitioner literature. The basic principle that surrounds RM is customer loyalty and its functions that create value to organisations.

According to Gronroos (1990)

"Relationship Marketing is to establish, maintain and enhance...relationships with customers and other partners, at a profit, so that the objectives of the parties involved are met. This is achieved by a mutual exchange and fulfilment of promises"

Keeping customers loyal was always a sensible business strategy especially for service organisations, which had to face the intangible nature of the “product” provided. Unlike physical products, services provided are positioned in customers mind in terms of the overall satisfaction and experience. This factor varies from individual to individual and therefore prerequisites from organisations to establish a continuous approach that focus on identifying the needs of each individual customer.

Berger and Bechwati (2000) suggesting that today organisations are shifting towards to new customer-centric orientation. This orientation drives corporate strategy to the development and maintenance of long-term relationships with customers rather than simply a series of discrete transactions. According to Haywood (1998) the development of an RM strategy can lead organisations to competitive advantages within the physical marketplace. These advantages are:

- Improvement to direct promotional activities
- Improvement to Brand awareness
- Increased frequency of customer visits
- Broadening the customer base through word-of-mouth advertising
- Costs Reductions
Those costs according to Buttle (1996) originate primarily from the conversion of a prospect into a customer (selling costs, commission, product samples, credit checking costs, administrative costs, database costs) and secondly from the unsuccessful prospecting. Price Waterhouse calculated that a 2% increase in customer retention is equivalent to a 10% reduction in costs (Caterer & Hotelkeeper, 1994). In addition, it can be argued that the value of retaining customers enables the costs of conversion to be eliminated over the longer term (Gilbert, 1996).
5.0 Legal Issues

5.1 Legal Issues for E-commerce Business

Starting a business on the Web, there are important legal issues to consider.

Incorporation

Incorporation means that your company is a separate legal and financial entity from yourself. It even has its own social security number for tax purposes, called a Federal Tax ID. Most people incorporate to limit their personal liability so that their personal assets are not at risk for debts of the corporation. For example, if your incorporated company was sued and lost the suit, the winner could not take your personal car or home. Incorporating makes you look more professional, and often helps with your taxes. Also, if you plan to receive investment in your company, have employees, and grow to be more than a one-person show, incorporation is an important step that helps promote these future goals. While incorporation protects you in many regards, it does not protect you from any criminal charges by you or the corporation, which can come into play if, for instance, you run an adult or gambling business on the Internet.

Trademark

The trademark act, or "Lanham Act", 18 USC Sec. 1051 etc. is meant to ensure that consumers can correctly identify the sources of goods or services. A trademark is a word, phrase, symbol or design, or combination of words, phrases, symbols or designs, which identifies and distinguishes the source of particular goods. A service mark is the same as a trademark, except that it identifies and distinguishes the source of a service rather than a product.

Normally, a mark for goods appears on the product or its packaging, while a service mark appears in advertising for the services. A "tm" on a product indicates unregistered (common law) trademark rights, and an "®" indicates a registered mark. It is illegal to place an "®" on a mark that does not have national registration.

As your domain name and your branding is valuable, you should think in terms of trademark registration. This can be done later in the business process once you
have more revenue available, but it is important to consider it upfront in choosing your domain name, company name, product and service name.

You don't want to use a name which is someone else's trademark, as they could sue you to stop your use, including taking the domain name. When trying to determine whether you've picked a good name in relation to others' marks, remember that the point of trademark law is to prevent consumer confusion about the source of goods or services. (http, ecommercebase.com)

Copyright
Copyright can be important when you obtain content for your site, and in the protection of your site's content.

The owner of a copyright has the exclusive right:
- to copy the work
- to modify the work (create "derivative works")
- to distribute the work
- to perform the work publicly
- to display the work publicly

Copyright arises upon the creation of a copyrightable works (typically substantial text, images, music, etc.). Facts, titles, recipes, form designs, alphabetical lists and other items do not have the required "originality" to merit copyright protection. Your are not required to register works to have copyright protection, however if you do register your materials, you preserve the fact that they are yours as of the date of registration, and you gain more rights under Copyright law, such as being able to win attorneys' fees and, sometimes, higher damages.

The term "Public Domain" does not mean that everything in public or on the Internet is freely usable. It refers to items that either do not qualify for copyright protection under the law, or for which the protection has expired.

Buying content for your Website or business, the best approach is to obtain a warranty from the seller or licensor stating that the seller owns all the rights in it and agrees to indemnify you if someone else sues you for using the content. Large content providers should be willing to do this, and many small ones will be also.
Creating a content, be sure to have your creator sign a contractor agreement with the language required under the Copyright Act so that you own the work product. If you don't, the creator will own the copyrights to the works. (http, ecommercebase.com)

5.2 E-commerce Law for Consumers

In connection with the attainment of the aims of the internal market, measures must be taken for the gradual consolidation of that market. The free movement of goods and services affects not only the business sector but also private individuals, whereas it means that consumers should be able to have access to the goods and services of another Member State on the same terms as the population of that State.

For consumers, cross-border distance selling could be one of the main tangible results of the completion of the internal market, as noted, in the communication from the Commission to the Council entitled 'Towards a single market in distribution'. It is essential to the smooth operation of the internal market for consumers to be able to have dealings with a business outside their country, even if it has a subsidiary in the consumer's country of residence.

The introduction of new technologies is increasing the number of ways for consumers to obtain information about offers anywhere in the Community and to place orders. Some Member States have already taken different or diverging measures to protect consumers in respect of distance selling, which has had a detrimental effect on competition between businesses in the internal market. It is therefore necessary to introduce at Community level a minimum set of common rules in this area.

Contracts negotiated at a distance involve the use of one or more means of distance communication. The various means of communication are used as part of an organized distance sales or service-provision scheme not involving the simultaneous presence of the supplier and the consumer. The constant
development of those means of communication does not allow an exhaustive list to be compiled but does require principles to be defined which are valid even for those which are not as yet in widespread use.

The same transaction comprising successive operations or a series of separate operations over a period of time may give rise to different legal descriptions depending on the law of the Member States. The provisions of this Directive cannot be applied differently according to the law of the Member States.

In the case of communication by telephone it is appropriate that the consumer receive enough information at the beginning of the conversation to decide whether or not to continue.

Information disseminated by certain electronic technologies is often ephemeral in nature insofar as it is not received on a permanent medium. The consumer must therefore receive written notice in good time of the information necessary for proper performance of the contract.

The consumer is not able actually to see the product or ascertain the nature of the service provided before concluding the contract. Provision should be made, unless otherwise specified in this Directive, for a right of withdrawal from the contract. If this right is to be more than formal, the costs, if any, borne by the consumer when exercising the right of withdrawal must be limited to the direct costs for returning the goods. This right of withdrawal shall be without prejudice to the consumer’s rights under national laws, with particular regard to the receipt of damaged products and services or of products and services not corresponding to the description given in the offer of such products or services.

It is also necessary to prescribe a time limit for performance of the contract if this is not specified at the time of ordering. The promotional technique involving the dispatch of a product or the provision of a service to the consumer in return for payment without a prior request from, or the explicit agreement of the consumer cannot be permitted, unless a substitute product or service is involved.
The principles set out in Articles 8 and 10 of the European Convention for the Protection of Human Rights and Fundamental Freedoms of 4 November 1950 apply: the consumer’s right to privacy, particularly as regards freedom from certain particularly intrusive means of communication, should be recognized. Specific limits on the use of such means should therefore be stipulated. Member States should take appropriate measures to protect effectively those consumers, who do not wish to be contacted through certain means of communication, against such contacts, without prejudice to the particular safeguards available to the consumer under Community legislation concerning the protection of personal data and privacy.

It is important for the minimum binding rules contained in this Directive to be supplemented where appropriate by voluntary arrangements among the traders concerned, in line with Commission recommendation 92/295/EEC of 7 April 1992 on codes of practice for the protection of consumers in respect of contracts negotiated at a distance. In the interest of optimum consumer protection it is important for consumers to be satisfactorily informed of the provisions of this Directive and of codes of practice that may exist in this field. Non-compliance with this Directive may harm not only consumers but also competitors. Provisions may therefore be laid down enabling public bodies or their representatives, or consumer organizations which, under national legislation, have a legitimate interest in consumer protection, or professional organizations which have a legitimate interest in taking action, to monitor the application thereof.

It is crucial, with a view to consumer protection, to address the question of cross-border complaints as soon as this is feasible. The Commission published on 14 February 1996 a plan of action on consumer access to justice and the settlement of consumer disputes in the internal market.

In the use of new technologies the consumer is not in control of the means of communication used. It is therefore necessary to provide that the burden of proof may be on the supplier.
6.0 E-commerce: The Comparison Between Greece and Portugal

6.1 E-commerce in Greece

E-commerce in Greece is still at an early age. Greece was slow to join the Internet revolution, because of the relatively low standard of living (about 70% of the European Union average) and high access fees. However, a number of efforts have been made in order to change this situation. European Union provides Greek government with a number of programs designed to increase Greek competitiveness by introducing the Internet into business and through the electronic delivery of government services. For instance, "the Ministry of Development introduced a programme called Go Digital, which is designed to connect 50,000 small businesses to the Internet and to equip them with basic skills in e-commerce. The Ministry of Education has agreed to the ambitious targets of the E.U's "e-Europe initiative", which called for all schools to have access to the Internet and multi-media resources by the end of 2001, all teachers to be skilled in their use by 2002 and all graduates in E.U countries to be digitally literate by 2003. To encourage computer literacy and Internet access, the government in 2001 offered tax allowances for the purchase of computers, educational software and Internet connections for households. Proposed amendments to personal taxation published in September 2002 eliminate this allowance". (http, doing e-business in Greece)

Research that has been done by the Strategic International S.A., a strategic consulting firm in Athens, Greece specializing in Telecommunications, Information Technologies, New Media and the Digital Economy, proves the above situation in Greece. Although Greek people are familiar with the term e-commerce, few companies dare to offer services via internet. In addition, few online users are willing to buy via it. This is due to the fact that the Greek sites are not so reliable, therefore they do not establish a feeling of safety to the potential customers.
Specifically, the reasons that e-commerce is not so popular in Greece are the following:
Distance shopping has never been developed in Greece with mail orders and purchase by phone like for example in the U.S.A.

There is mistrust for electronic transactions using a credit card and cash is usually preferred as a means of payment compared to the cards which are usually used for large value purchases.

Telecom infrastructure is not as developed as in other countries where broadband network offer faster and more reliable access to the internet user.

Finally, there is no real motive for internet users to buy online since the e-products have almost the same price and the same quality with the products sold in the stores.

Greek people have limited knowledge on electronic commerce. According to Strategic International S.A. "electronic commerce is often synonymous with trade over the internet. But electronic commerce is a much broader concept than simply online shopping. It is a new way of working and doing business. It is transforming organizational structures, reshaping traditional industries and bringing new market realities" (http, e-commerce in Greece). Most Greeks ignore this and they believe the things they can do through internet are limited. Apart from this, companies which already use the internet and website it are not necessary to sell online to have a successful commercial website. Often, a competitive catalog and some information will make customers get interested and place the company's phone number in their agenda.

The Strategic International S.A. research provides us with some statistical data concerning e-commerce in Greece as well as statistical data of other countries in order to emphasize the slow internet revolution in Greece compare to other major countries. Specifically, in 2000 $ 25 billion were spent on B2C in the U.S.A. and $17 million in Greece. For Greece the amount is expected to be $ 474 million in 2004. These are impressive numbers picturing a business with growth and profit opportunities. The figures below give us a main idea:
From the figures 12 and 13 we understand that Greek people do not prefer to perform their business transactions through the internet. This is mainly due to the fact that Greek consumers are conservative to distance shopping as referred above as well. Research has shown that B2C in Greece is only 0.024 % of the total domestic consumption, and this number is not expected to climb higher.
B2C growth in Greece cannot expand to all retail segments but to those where the customer uses the advantages of online shopping without loss of quality and money. Travel tickets, CDs, and computer ware are the products mostly purchased online in Greece followed by books, mobile telephony products and flowers. What these products have in common is the high degree of certainty that the delivered item will exactly match what has been ordered as, for
example, for books and CDs. Travel tickets are a product category where prices are not fixed and where online shopping can lead to substantially better prices.

To summarize, B2C had a volume of $20 million in Greece in 2000, representing only 0.024% of the total domestic consumption. Compared to traditional commerce, e-commerce is not a big thing, after all. B2C is currently positioned at the small market segment that is partially shared with distant shopping retailers. For B2C to reach a considerably size it has to expand to products and added value services that will open the way to the opportunities of rivalling the large volume, conventional retail shopping.

Greece in order to follow the evolution and extension of e-commerce, have to take the following measures. As mentioned before Greece is still far behind in field of e-commerce compared to the other European countries. Hence some of the measures that have to be taken are the following:

1. Reinforcement of enterprise’s ability to manage the rapid progress of electronic commerce.
2. Support of small or medium enterprises in the development of the informative communicative infrastructure, in education and organizational change.
3. Encouragement and protection of e-commerce through the insuring of trust in trade.
4. Support of greet enterprises in communication and informatics.
5. Maintenance and growth of employment.
6. Utilization of the positive effects of e-business.

In conclusion, e-commerce is not a brand new market. For a number of enterprises e-commerce is a way to make much more efficient business. Making a full integrated solution which reflects the company’s way of conducting business, including a full supply chain operation, with alternative views on transportation, warehousing, ordering goods, distribution channels and patterns, handling complaints, quality assurance, documents and self ordering solutions is the way to go.
6.2 E-commerce in Portugal

Portugal is still experiencing the enthusiasm for eCommerce that characterised the US and parts of Europe years ago. Economic growth is slowing, like in Greece, but executives are confident by saying that 40% of businesses are innovative leaders in eCommerce. In addition, an overwhelming 67% say their eCommerce projects have been successful. Although Portugal is behind in traditional e-commerce, its enthusiasm for new technologies gives it an advantage in e-commerce.

With a few notable exceptions, Portuguese companies have been behind the curve in adopting Internet capabilities. As recently as the beginning of this year one of the country's largest newspaper groups relied on a single email address for their news desk and the nation’s largest broadcasting company, Sociedade Independente de Comunicado (SIC), had not yet developed an Internet site.

Portugal’s still relatively low rate of Internet penetration is the main factor hampering growth of e-commerce. Neither the government nor any association now publishes any official figures. Like in Greece, slow delivery times and customer resistance to online payment by credit card or bank transfer are the main obstacles.

The major reason for buying something over the Internet was its non-availability in Portugal. “Such factors add to demonstrated price sensitivity. According to the World Bank, there were 700,000 Internet users in Portugal during 1999. Despite the high-profile government backing for the concept of a digital society, the percentage of Portuguese households with Internet access is 18.1%, trailing the E.U average by ten percentage points, according to a study by the German Institute of Economy, which covered April-October 2000. According to the Analitix Research company, 36% of Portuguese Internet users spend money online, with an average expenditure level of around Esc102,000 per year. Regarding time spent online, the weekly average is 15.5 hours; the most popular activity is email, followed by news” (http, Portugal: Consumers remain slow to shop online).
According to a survey, the country can expect compounded yearly growth through 2002 of 139% for B2C and 172% for B2B services. By end-2002, according to its estimates, B2B will account for 89% of the total value of e-commerce in Portugal, compared with a projected 78% for Europe as a whole. IDC, an e-commerce consultancy, forecasts an e-commerce market of €2.1bn in 2003, up 1,775% on 1999.

The following companies are leaders in the B2B electronic marketplace: Tradecom, which is backed by Portugal Telecom, Banco Espirito Santo and Caixa Geral de Depositos; Forum B2B, run by Banco Comercial Portugues, Electricidade de Portugal and GalpEnergia; and BizDirect run by Banco Portugues do Investimento and the Sonae group. All these companies will have a great future.

The Portuguese government sustains a high commitment to the information society. “The state has embarked on a major restructuring plan, called the Public Financing of the Digital Economy 2000-06, that are supposed to complete a widespread upgrading of its services. There has been swift progress in the level of information provided by government ministries, and services such as digital tax declarations are being introduced. The plan foresees the investment of Esc55,600 per citizen, amounting to total expenditures of Esc314bn. Among the key medium-term objectives are the computerizations of the entire legal system”. (http, Portugal: Poor access limits Internet use)

In the private sector, the Internet has so far failed to spark profound change in consumer trends or working practices. With few exceptions, the Portuguese market is proving to be generally unreceptive. In terms of consumer e-commerce, there appear to be both substantial cultural barriers and price sensitivities still to be overcome. Private-sector initiatives are reaching maturity in the sense that a shake-out of the e-commerce sector has already begun. Portugal is estimated to have about 220 online shops resulting from the boom in sites registered as .pt since 1999. The vast majority are virtual branches of real shops. There is also a plethora of Internet services, such as Jobsearch and Online Media. Paginas Amarelas Internet, the online version of yellow pages, saw its number of consultations rise 70%, to €22 m in 2001.
Relative to Greece percentages, 2% of Portuguese citizens were online in 1998, but with free access launched the following year, as many as 7% of citizens had Internet access in 1999. It is estimated that 25% of homes would be connected by 2005. Nonetheless, in spite of the high-profile government backing for the concept of an information society and a boom in the number of "pt" domain registered sites, the failure to provide fast, cheap access will probably limit Portuguese access to the Internet. Research has shown that more consumers prefer to go and choose their own products from a supermarket let's say and then have them home-delivered rather than order them over the Internet. Portugal has a potential market of only 10 million consumers and the highest functional illiteracy rate in the E.U. As a result, much of the information society may bypass Portuguese consumers. That is, at least until the Universal Mobile Telecommunications System (UMTS, the third generation of mobile phones) provides a slimmed-down set of services capable of capitalising on the content providers already in place. Generally speaking, with a few notable exceptions, Portuguese companies have been behind the curve in adopting Internet capabilities.

The drive to capture market share in the growing Portuguese speaking Internet industry has begun in earnest, though. The meteoric rise of the valuations of telecommunications and Internet-related technology companies on the Portuguese stock market reflects recent investor excitement about the industry’s growth potential.

The financial sector has taken an early lead in developing e-commerce and business-to-business (B2B) capabilities. Portugal’s fourth largest bank, Banco Espírito Santo (BES), plans to invest Euro49.8m in its new Internet holding, BES.com. The new company will manage the bank’s online operations, develop new B2B models and support a new venture capital arm, designed to serve as an incubator fostering growth in up-and-coming Internet companies. Finibanco, a local private bank, has offered clients access to their account information through its website for some time, as well as the ability to transfer funds between accounts, pay bills and trade stocks online.
As far as regulation is concerned, foreign companies need not doubt the security of contractual arrangements in Portugal.

"Despite complaints in specific sectors (namely audio-cassette piracy and forgery of international designer garments by smaller textile manufacturers), protection of intellectual property is fairly advanced in Portugal" (http, Portugal, law and regulations).

Under Portugal’s E.U accession treaty, the principle of inverting the onus of proof has applied since 1987 to all patents, including those awarded before the accession. This obliges the alleged infringer to provide proof of a right to the patent. The EU plans to introduce a single patent regime by 2002.

Portugal complies with the E.U standard for the protection of consumer’s privacy rights on the Internet. Consumer information must be collected for a specific purpose and used accordingly. Prior consent is required for the collection of sensitive information such as racial or ethnic origin, religious beliefs or political affiliations, health or sex life.

"Under the E.U’s Brussels Convention consumers with grievances against companies are required to file any resulting lawsuits in the company’s home country. This also applies to electronic businesses. Although definition of the physical location often becomes blurred, it is generally considered the country where the e-business is headquartered” (http, Portugal, law and regulations).

The E.U is considering new legislation that would allow E.U consumers to take companies to court in their own countries, much to the chagrin of E.U business leaders. They argue that this would entail a near-impossible effort on the part of the business community to comply with all 15 E.U countries legislation.

In conclusion, the eEurope 2002 report for the European Commission found that Portugal was in the last three of the 15 E.U members in almost all criteria. According to the report, 22% of E.U companies procured goods online, compared with a paltry 5% of Portuguese companies. Across the E.U, 60% of companies have their own web page against just 20% of Portuguese companies. And
Portugal comes in last on the number of schools connected to the Internet, with less than 5%. (http, doing e-business in Portugal)

Figure 14: E-commerce market per 100 inhabitants -Euros- End 1999.

(Source: ESIS – IPSO)

The figure 14 shows the market of the E.U e-commerce per 100 inhabitants. Countries with a less advanced e-commerce market ranging between 100 and 1300 Euros per 100 inhabitants are: Spain, Belgium, Greece and Portugal.

Although it lags behind northern Europe in Internet retailing, southern Europe Portugal, Spain, Italy and Greece have significant potential that is about to be exploited soon by three main types of businesses: portals seeking to develop new revenue streams by tacking on e-commerce sales commissions; invading retailers leveraging outside experience; and local grocers reaching across categories. According to a new report from Forrester Research, the main factor holding back Internet sales growth in the region is a "meagre online retail supply"; inadequate order fulfilment is also a problem. The report, Southern Europe's Growth Spiral, is based on interviews at 50 brick-and-mortar retailers operating in at least one of the four countries, half of which are already selling online.
6.3 The Comparison

The European Commission has threatened to begin legal action against seven countries of European Union for failing to implement the e-commerce directive on time. These countries are Belgium, France, Greece, Ireland, Italy, the Netherlands and Portugal. The member states had agreed to this deadline, accepting that it was urgent to start performing in e-commerce.

According to the European opinion research group EEIG e-commerce in the European Union was conducted in autumn 2003 and involved face-to-face interviews with 16,207 EU15 citizens. It is the first major survey of its kind and focuses on this new and growing way of distributing goods and services - a purchasing channel that has now been used by 16% of E.U citizens.

One major interesting element coming out of this research is that the most important limiting factor affecting the e-commerce market is, in fact, neither confidence nor issues such as security of payment, language, etc. but the fact that 57% of E.U citizens who are not connected to the Internet and, therefore, do not have the means to undertake e-commerce.

The entire poll was asked if they had ever bought anything on the Internet. In Portugal 4 citizens to 100 answered “yes” and in Greece 3. There is a substantial North-South difference among Member States though, with 3% of Greeks and 4% of Portuguese using the Internet for transactions, contrasting with 36% of Danes and 37% of Swedes. (http, europa.eu)

In table 4, among the Member States, Greeks are less concerned about aspect of e-commerce and 36% of them worry about this issue compared with 46% of the Portuguese. Trust levels were substantially less in Portugal where the figures were 30% or more.

Only 23% of consumers who had bought something on the Internet were fully confident with the medium and were not worried about any of these issues, with confidence ranking lowest in Portugal (13%). In Greece the percentage is higher (25%).
Table 4: Concerns about buying on the Internet:

<table>
<thead>
<tr>
<th>Concern</th>
<th>E.U. 15</th>
<th>Greece</th>
<th>Portugal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security of payment</td>
<td>48</td>
<td>50</td>
<td>54</td>
</tr>
<tr>
<td>Credibility of the information on the Internet</td>
<td>27</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>Delivery (damaged goods, delay, non delivery, etc.)</td>
<td>36</td>
<td>30</td>
<td>46</td>
</tr>
<tr>
<td>Your rights as a consumer being respected</td>
<td>23</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Ability to get a refund</td>
<td>38</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Anonymity of sellers</td>
<td>16</td>
<td>18</td>
<td>48</td>
</tr>
<tr>
<td>I'm not worried</td>
<td>23</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Don't know</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 5: Reasons for not buying over the Internet:

<table>
<thead>
<tr>
<th>Reason</th>
<th>E.U. 15</th>
<th>Greece</th>
<th>Portugal</th>
</tr>
</thead>
<tbody>
<tr>
<td>You don't have access to the Internet</td>
<td>57</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>You do not trust the Internet</td>
<td>25</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Using the Internet is too expensive</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>You are not interested in buying anything on the Internet</td>
<td>28</td>
<td>31</td>
<td>38</td>
</tr>
<tr>
<td>Buying something on the Internet is too complicated</td>
<td>7</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>The Internet is too complicated</td>
<td>7</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>You have no credit cards</td>
<td>7</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>You don't understand the language well</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other reasons</td>
<td>6</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Don't Know</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Analysing the responses consumers who had never bought anything on the Internet, it becomes clear that the primary reason is because ecommerce is not available to them: 57% of this group simply do not have access to the Internet.

The second most cited reason in this multiple answer question posed to those who had never bought anything on the Internet came from 28% of the poll saying they were not interested in buying anything using this medium. Both in Greece and Portugal the percentage is 29%.

A quarter (25%) of consumers said that they did not trust the Internet itself. More Greeks do not trust the Internet (27%), in comparison of 20% of Portuguese. Lack of understanding of the language was a problem only for a very small number (5%) of Greek consumers and Portuguese (3%) who had never bought anything on the Internet. Similarly, non-ownership of a credit card accounts for only 7% of EU15 citizens who do not use e-commerce. The percentage in Greece is 5% and Portugal 3%.

| Table 6: Reasons for not trusting the Internet amongst non-purchasers |
|-------------------------|----------------|-----------------|
|                         | EU15 | Greece | Portugal |
| Security of payment     | 73%  | 66%    | 66%        |
| Reliability of the info. on the Internet | 44%  | 37%    | 33%        |
| Delivery (damaged goods, delay, non-delivery, etc.) | 57%  | 33%    | 27%        |
| Your rights as a consumer being respected | 23%  | 12%    | 17%        |
| Ability to get warranty or refund | 26%  | 29%    | 14%        |
| Anonymity of sellers    | 10%  | 22%    | 9%         |
| Unknown                  | 1%   | 3%     | 5%         |
| Don't know               | 3%   | 1%     | 2%         |

For those consumers who had not purchased on the Internet and who did not trust it, the prime reason for not trusting the Internet was security of payment. Virtually three-quarters (73%) of the group gave this reason. Greece and Portugal have the same percentage (66%).
The next most important reason given those who had never bought anything on the Internet and did not trust the medium was the credibility of the information available to them. Overall, this was a reason given by 44% of this group and the figure falls to 37% in Greece and 33% in Portugal.

Delivery issues (goods being damaged, delayed or undelivered) were next in line, with 37% of those who had never bought on the Internet because they did not trust it indicating them as the main reason for their mistrust. The figure in Greece is 33% and in Portugal is 27%.

The next most commonly cited reason amongst those who had not bought on the Internet because they do not trust the medium related to the ability to get a warranty or refund. A figure of only 14% was observed in Portugal and 29% in Greece. The issue of the anonymity of sellers was given as a reason for not trusting the Internet. The E.U15 average is 26% and a figure of only 9% in Portugal.

There were noticeable variations amongst people who had not bought on the Internet for reasons of trust when issues of non-respect of consumer rights were raised. This issue was of concern to 34% of the French and Austrian samples while the figure falls to 12% in Greece and 17% in Portugal.

**Preferred Websites**

Consumers preferring websites of well-known offline retailers (57%) and those favouring the sites of well-known e-commerce brands (49%) were in the majority across the E.U. In Greece (60% to 31%), Portugal (59% to 28%), there was a notable trend in favour of traditional offline retailers.

The language in which e-commerce sites appear is confirmed as being an important issue – overall, E.U consumers, unsurprisingly, prefer websites in their own language. To those states where the language issue was seen as being not important produced high figures in Greece (44%) and Portugal (42%) polled expressing this view. These countries were well ahead of the EU15 average where only 16% said that having the site in their mother tongue was not important.
Paying for financial security of Internet purchases

35% of the poll said that they would be more confident in buying things on the Internet if there were a guarantee from their bank/credit card issuer to cover eventual problems. More than half (54%) of this group said they would not be prepared to pay a small additional charge for this guarantee to be provided by their bank or credit card issuer. In fact, in Portugal, 60% or more of those polled were not prepared to pay this surcharge. Only in six out of fifteen E.U countries (among them Greece) were there more people prepared to pay this charge than who were not.

Perceived risk factors of shopping at Internet sites of other E.U states

There was a broad spread of opinion in response to this question with the largest proportion being those who said they ‘didn’t know’. However, it is interesting to note, that levels of discomfort with buying over the Internet from sites of other Member States rather than of their own country, are higher in those countries where e-commerce is more widely used.

Within this 31% of the total poll were figures ranging from 15% in Luxembourg and 18% in Finland and the Netherlands to 51% in Portugal and 48% in Greece. There was only a two-percentage point difference between those choosing the yes and no options.

Amongst the 30% for whom the location of a website in another E.U country was seen as being risky were a high proportion of Finns (55%), as well as 43% of Britons and 42% of Swedes. Considerably less concern was felt in Spain (15%), Portugal (16%) and Greece (17%).

Trust marks, Data protection and Conflict resolution

Only one in ten EU15 citizens had heard of Internet trust marks. Relatively high levels of awareness were observed in Austria (19%), Denmark (16%) and Germany (15%). At the other end of the scale, awareness of trust marks had only reached 6% of Italians and Portuguese and 7% of Greeks.
Only a quarter (24%) of EU15 consumers was aware of the general issue of protecting personal data. Higher than average levels of awareness were noted in the Netherlands (38%), Sweden (33%), Denmark (32%) compared with numbers at the other end of the range including 9% from Greece, 12% from Portugal and 14% from Belgium. Only one in five (21%) of EU15 citizens was aware of statements about the security of payment data. (http.europa.eu)
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