

## REVIEW

# A Brief Review for E- Commerce and the Critical Success Factors

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### ABSTRACT

Along with the rapid development of information technologies, traditional trade has moved to electronic area. Today, many business activities are performed in electronic environment. Since electronic commerce is rapid and easily reachable, it has begun to attract much more attention by consumers and businesses over time. In this study, a brief review about e-commerce is provided. The main aim is to examine the hot topic of e-commerce with different aspects. The increasing importance of e-commerce is presented by providing statistical support which shows a dramatic increase in total e-commerce sales worldwide. Tools, types, payment methods, and critical success factors of e-commerce are investigated. Eight different tools which can be used in e-commerce are explained. Seven types of e-commerce are classified. In addition, nine payment methods of e-commerce are elaborated. Moreover, three main critical success factors including eight sub-factors are structured in a hierarchical form to aid the companies in e-commerce. Depending on these critical success factors, this study aims to set a well-organized base in order to decide the best e-commerce company in further studies.

## 1. Introduction

The improvements in communication and computer technology have brought many opportunities to facilitate human life. In recent years, electronic commerce (e-commerce) has come to the forefront as a dynamic economic sector and it has also become one of the attractive ways of starting a business activity. E-commerce has emerged as a result of the emergence and development of information technology which is an innovation that allows for easier trade.

According to Demir<sup>[1]</sup> transactions must have certain characteristics in order to be evaluated as e-commerce. First of all, the operations must be done in an electronic environment. Secondly, it must include dealing between

two or more parties. Thirdly; sound, image and all digital products have to be processed and stored. Finally, transactions must be commercially viable or capable of supporting these commercial transactions<sup>[2]</sup>.

Similarly, World Trade Organization (WTO) defined e-commerce as the production, advertisement, sales and distribution of goods and services through telecommunication networks<sup>[3]</sup>.

In another study, e-commerce working system is depicted in Figure 1<sup>[4]</sup>. Customer orders product or service from the seller via using telecommunication networks. The seller procures the desired unit from its suppliers as in the form of final product or raw material to be processed. Then, the seller transmits the item to its customer by using

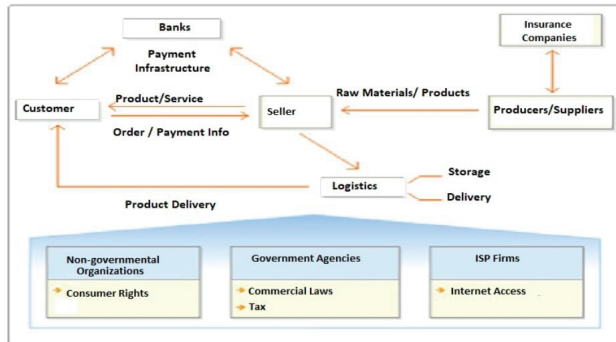
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different means of logistics. By the way, banks which are responsible for the payment infrastructure perform the funds transactions between the customer and the seller.



**Figure 1.** Electronic Commerce Working System <sup>[4]</sup>

In recent years, the usage of e-commerce has increased tremendously due to its advantages both for customers and enterprises. Advantages of e-commerce in terms of customers can be listed as <sup>[5]</sup>;

**Accessibility:** Shopping in the electronic environment allows instant access to every product at any moment.

**Less Shopping Time:** Customers save time thanks to electronic commerce. Shopping on the Internet is fast and practical.

**Comparability:** E-commerce has more options to see and choose who offers the best pricing. Product comparison in electronic shopping is easy. Comparisons of products can be made easily.

**Comments:** The views of other buyers regarding the

products and services can be easily viewed.

**Discount Rates:** In e-commerce, coupons and opportunities are utilized. Large stores often show their products in online stores with higher discount rates.

Advantages of e-commerce in terms of companies can be listed as <sup>[5]</sup>;

**Higher Customer Database:** E-commerce offers advantages in increasing customer base in businesses. In online shopping, people from all over the world can access their products and return at any moment.

**Wider International Markets:** It increases sales. An enterprise can have more online sales with higher profit margins. More products can be sold while serving international markets.

**Accessibility:** Electronic commerce sites are accessible every day and hour of the year. Online shopping or transactions are always open to consumers.

**Expandability:** It gives the opportunity to expand the business scene. An online business does not have to create a site for every language. With the right marketing, consumers around the world can easily find the business, the products and the information whenever they want.

**Easy-Pay Systems:** Each business can easily adjust their payment system.

**Instant Transactions:** You do not need to wait 30 days for e-commerce for approval or for some other payment types.

Although e-commerce contains some similarities with traditional trade, there are some differences <sup>[6]</sup>. The birth of traditional commerce has come when people and societies began trading among themselves. With improved

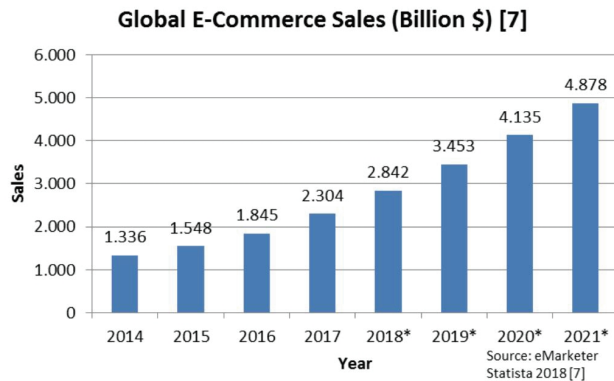
**Table 1.** Comparison of Traditional Trade and E-Commerce <sup>[3]</sup>

Purchasing Firm	Traditional Trade	Electronic Commerce
Information Retrieval Methods	Negotiations, magazines, catalogs, advertisements	Web pages
Demand Specification Method	Written form	Electronic mail
Demand Approval	Written form	Electronic mail
Price research	Catalogs, interviews	Web pages
Ordering	Written form, fax	Electronic mail, EDI
Suppliers	Traditional Trade	Electronic Commerce
Stock control	Written form, fax, telephone	Online Database, EDI
Shipping Preparation	Written form, fax, telephone	Online Database, EDI
Delivery note	Written form	Online Database, EDI
Invoice	Written form	Electronic mail, EDI
Ordering Firm	Traditional Trade	Electronic Commerce
Delivery Confirmation	Written form	Electronic mail, EDI
Payment Schedule	Written form	Online Database, EDI
Payment	Bank Transfer, Mail, Collection.	Internet banking, EDI, EFT

living conditions and the development of modern technological innovations, traditional trading has now become a faster and easier way to trade. With the development of information technologies, trade has now begun to take place in the digital environment. The main differences between traditional trade and e-commerce are examined in Table 1 [3].

The table above shows the basic differences between traditional trade and e-commerce. E-commerce is a type of trade that takes place entirely in the digital environment. In traditional trade methods, the methods used to purchase goods and services are usually conducted by face to face interviews with the firm or persons and looking at brochures about the products. But goods or services to be purchased in e-commerce are easily examined on the internet pages of companies [3].

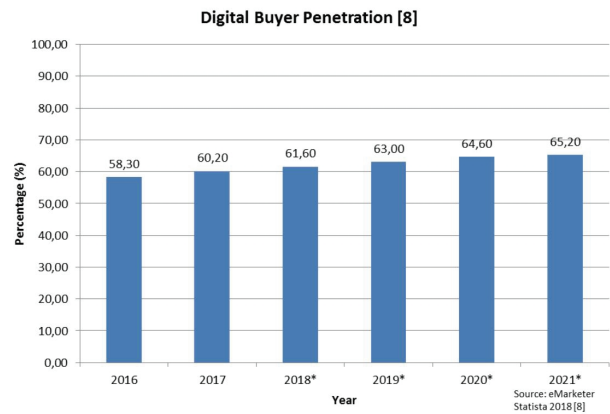
In addition, the statistical inferences from the present e-commerce environment need to be studied to show the importance of the topic. The following first statistic gives information about the total e-commerce sales worldwide from 2014 to 2021 and shown in Figure 2 [7]. In 2017, retail e-commerce sales worldwide amounted to 2.3 trillion US dollars and e-retail revenues are projected to grow to 4.88 trillion US dollars in 2021.



**Figure 2.** Global e-commerce Sales (\$) from 2014 to 2021. (\*represents the expected values) [7]

Depending on the statistical researches, the digital buyer penetration worldwide from 2016 to 2021 can be achieved and shown in Figure 3 [8]. In 2016, 58.3 percent of global internet users had purchased products online. In 2021, this figure is expected to surpass 65 percent of internet users worldwide, the e-commerce industry is set to evolve and expand. Beyond these statistics, the readers can achieve many statistical reports via the literature [8].

Since e-commerce has many advantages and differences from the traditional trade; there is a need for a general brief about e-commerce to appeal. The main contributions of this manuscript are in two-fold. Firstly, general information about e-commerce is explained. Secondly, the



**Figure 3.** Digital Buyer Penetration Percentages from 2016 to 2021. (\*represents the expected values) [8]

factors affecting the customer satisfaction and increasing the success of e-commerce are elaborated. While performing these contributions following objectives are achieved. Firstly the evolution of eight different e-commerce tools is presented. Then, e-commerce types are categorized in seven classes. As the third aim, payment methods used in e-commerce are clustered in nine groups. After that, as the final objective, the critical success factors for e-commerce have been deeply investigated and hierarchically listed in three main and eight sub criteria. In short, the main goal of this study is to present a brief review about e-commerce. This brief is also supported by some statistical data given in Figure 2 and Figure 3.

The mapping of this study is as follows: Section 1 introduces the definition and explains the importance of e-commerce as well as stating the advantages and differences of e-commerce from the traditional trading system. Section 2 mentions about different e-commerce tools. Section 3 classifies e-commerce systems. Section 4 reveals different payment methods in e-commerce. Section 5 explains the importance of customer satisfaction and different techniques to measure the satisfaction. Section 6 specifies the critical success factors in e-commerce and structures them in a hierarchical form. Section 7 concludes the study while enlightening future research directions.

## 2. E-commerce Tools

In previous years, e-commerce tools such as telephone and fax were used for a long time, but with the advent of the internet, e-commerce tools have begun to change. The following e-commerce tools are listed below.

Telephone: It is the oldest vehicle that has been used in e-commerce for many years. The spread of e-commerce has maintained its importance for many years. Since it provides an interactive and flexible mutual communication, it is generally preferred for communication between

parties. Today, the telephone is still actively used in e-commerce.

**Fax:** It is a tool developed to reduce the time loss for written communication <sup>[9]</sup>. It has not been preferred by users in recent years in terms of price being expensive and poor quality. Especially with rapid changes in technology, it loses its importance over time.

**Television:** It is widely used as a one-way communication tool, which makes it difficult to carry out transactions in many ways in e-commerce transactions <sup>[10]</sup>. But with today's technology and smart TVs, people are shopping with a single transaction that they do in front of the television. Although smart TVs are still constraints in terms of e-commerce transactions, they are still an important electronic commerce tool for creating a brand preference in terms of trading sites.

**Electronic data interchange (EDI):** Electronic Data Exchange is a communication standard that enables sharing of business documents such as information, invoices, bill of lading, and product stock number <sup>[11]</sup>.

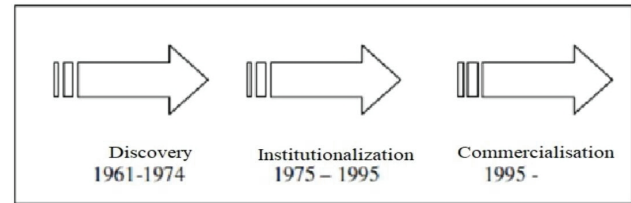
**WAP (Wireless Application Protocol):** WAP is a technique used by telephone users to provide convenient access to wireless devices and the Internet. It is fast, convenient and reliable to access the network internally with compatible devices only. Mobile users can perform banking operations; can learn road status, weather or news, thanks to the implementation of this method <sup>[12]</sup>.

**Electronic payment and money transfer systems:** Automated Teller Machines (ATMs) which are widely used today are examples of these systems. However, these machines do not have a wide range of functions in e-commerce due to the limited transaction capacity they perform. In e-commerce, credit cards are the most popular electronic payment and transfer system tools today. Apart from these, smart cards, electronic checks and digital money are examples of other electronic tools in e-commerce <sup>[13]</sup>.

**Intranet:** The intranet and internet are terms that are often compared by most people. But intranet is a method that is established within the company and can work alone without internet connection. This practice is generally used by institutions. The aim is to maintain the communication within the company in a rapid manner. In this way, employees are able to keep track of work remotely, actively use most software, share documents and distribute them <sup>[13]</sup>.

**Internet:** The Internet is an important technology that is heavily used in electronic commerce. Internet is a communication network established among computers, where people communicate with each other and perform many operations <sup>[10]</sup>. As you can see in Figure 4, the time of the discovery of the Internet took place between 1961 and

1974. With the development of computer use after the 70's, the process of institutionalization of the internet has begun. From 1975 to 1995, the use of the internet began to become widespread. In 1995 and after, the internet began to take its place in commercial business. Today it is still an important tool of e-commerce.



**Figure 4.** Steps in the Development of the Internet <sup>[11]</sup>

As it is seen, there are eight different tools of e-commerce. However, new tools of e-commerce have been arising progressively. In recent times, mobile phones are being used as a newer tool for e-commerce. Although they use the existing internet technology in the background, m-trading (mobile trading) has become an emerging way of e-commerce. Therefore, the tools of e-commerce can be inferred as evolving continuously in the time.

### 3. Classification of E-commerce

With the development of e-commerce, the environment of trade, its scope and its sides have begun to expand. We can examine the types of e-commerce in 7 broad categories.

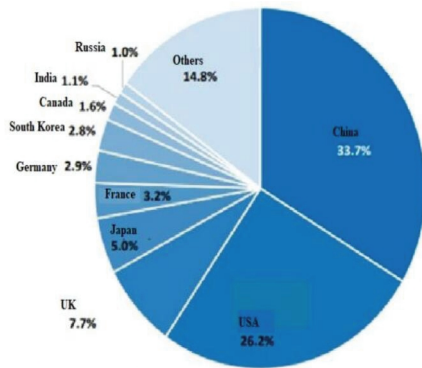
**Business to Business (B2B) e-Commerce:** It is a type of trade that takes place between two companies. In this trading system, if the products or services are sold from a supplier to other firms and if all these transactions are carried out in an electronic scope, this type of trade can be called B2B <sup>[14]</sup>.

**Business to Consumer (B2C) e-Commerce:** It is a type of trade that is between a business and a consumer. It has become increasingly popular with the development of internet technologies in recent years. Consumers can access all kinds of products and services on-line, obtain necessary information about these products and services and make comparisons with the products of other companies <sup>[15]</sup>. This method of trade allows businesses to build websites to promote their goods and services on-line. Consumers can access these information and services practically via the internet, and at the same time they can communicate directly with consumers through this method <sup>[16]</sup>.

As seen in Figure 5, China (with a share of 33.7%) and the United States (with a share of 26.2%) are the leading countries where electronic commerce is most intensively undertaken. In addition, the biggest players in e-commerce, which are Amazon, Alibaba, and E-bay, are located



in these two countries.



**Figure 5.** Top 10 Countries in B2C E-commerce Sales <sup>[17]</sup>

**Consumer to Consumer (C2C) e-Commerce:** It is a trade model in which two people or consumers directly deal with each other. It may be a third party in the process, but the intent of this tool is simply to facilitate the process and create an environment that connects people together. This tool may charge a fee or commission, but is not responsible for product changes. In this trade model, there is an auction where the proposal is made online. In this auction, products are sold online to another consumer. Seller may pay a fee on this platform to sell its products, but the buyer is generally not subject to any fee <sup>[18]</sup>.

**Consumer to Business (C2B) e-Commerce:** This is an e-commerce model in which the consumers offer goods and services to the firm and the companies pay for the consumers. This trade model is a form of trade that is the opposite of the trade model that firms offer goods and services to consumers or offer. Blog sites can be exemplified on the internet. The blog author can direct a person visiting the page to receive a book that he recommends to any popular ecommerce site. As a result, the writer is able to earn member sales revenue from sales made <sup>[19]</sup>.

**Business to Government (B2G) e-Commerce:** In this model, businesses bid on the government projects or products which are needed for their organizations. This can encompass public sector organizations that propose the bids. It is also referred to as public sector marketing. In this model of trade between firms and public administrations, situations such as tenders or specifications governed by these administrations are evaluated within this trade model <sup>[20]</sup>.

**Government to Government (G2G) e-Commerce:** This is defined as the activities of different public departments or organizations in the same public administration on-line <sup>[10]</sup>. It is commonly used in the UK. Two types of trade model are used here. The first is inward-looking e-commerce. In other words, it is in the form of a single government department, centralized or organized trade. An example is the UK health data binding system. The second is e-commerce,

which is done outwardly. In outward-looking e-commerce, more than one government must establish information systems. This is exemplified by the information systems that Schengen countries are using to meet the provisions of the Schengen agreement <sup>[19]</sup>.

**Consumer to Government (C2G) e-Commerce:** It is a type of trade that occurs between the consumer or the citizen and the state authorities. In this trade model, many transactions such as health and passport transactions, tax payment and population transactions take place in the electronic environment. As an example in Turkey, [www.turkiye.gov.tr](http://www.turkiye.gov.tr) can be nominated.

In our point of view, among these seven e-commerce types; B2C, C2C, and C2B are the most widely used ones. Since the end users (consumers) are a part of these commerce, these e-commerce types can touch to anyone in the society. On the other side, that would be better to compare the market share of each e-commerce type. However, the aim of this study is just to clarify a brief review about e-commerce. In need of deeper analysis, the readers are referred to the literature <sup>[21]</sup>.

#### 4. Payment Methods in Electronic Commerce

Electronic payment methods are a condition that must be examined in terms of electronic commerce security. The payment methods in e-commerce are examined below.

**Credit Card:** Paying by credit card is one of the payment methods heavily used in the virtual environment <sup>[22]</sup>. Credit cards are shown as reasons for preference in terms of the customers because they are easy to use and do not need an additional system. The parties to the credit card are card issuers, service providers, banks and card issuers <sup>[22]</sup>.

Credit card usage is also preferred over the internet for customers. In the case of paying over the internet, the counterparty receives the information of the buyer by credit card. However, it is important to take some precautions while performing these operations in the virtual environment. There is a danger that the receiver's credit card information may be stolen by other people <sup>[22]</sup>.

Some methods have been developed for securing credit cards. One of them is SET (secure electronic transaction) that works by encrypting card information. SET is a security process developed by credit card companies in 1996 as a result of collaboration with organizations such as Microsoft, IBM and Netscape. It is a method that is used to block the security aspect of payments made by credit card <sup>[22]</sup>. Nowadays, this security process is replaced by a 3D security scheme <sup>[23]</sup>.

**Payment with Virtual Card:** It is issued for online shopping. Virtual cards are being issued to enable consumers to make secure shopping online. The starting limit of the card is zero and works depending on the original card.

The cardholder carries out the shopping within the limits allocated for purchasing goods and services. Since the security code and number of the card are different from the main card, it is not possible to access the mother card information. The person is not physically carrying this card. Card numbers and transactions are processed only online. For this reason, there is no risk to be stolen or lost <sup>[24]</sup>.

**Payment with smart card (Chip Card):** Smart cards, or in other words, chip cards, are much more useful and functional than other card types. These cards are divided into 3 parts in terms of content; cards with only memory, with security features, and with their own processor. If they are physically connected, they are divided into two groups, Contacted and Non-Contacted <sup>[24]</sup>. The details of these types of cards can be found in the literature [24, 25].

**Payment with electronic cash:** Electronic cash means that storing money in virtual environment for payment <sup>[26]</sup>. In order to benefit from this system, it is necessary for the consumers to install the software specially prepared by the companies that provide electronic money service on their computers and to have the accounts in the banks where the company agrees. After this step, shopping is done in virtual environment with electronic money contracted institutions <sup>[27]</sup>. With the development and widespread use of electronic payment instruments, new electronic currencies such as BitCoin and LiteCoin are emerging. All electronic currencies used today are produced by companies or organizations, regardless of individual or state <sup>[26]</sup>.

**Payment by electronic check:** It is a system that enables businesses operating in e-commerce sites to receive payments as checks. In this system, the payment is made by entering the necessary bank information of the person into the system without the need for a credit card. In other words, the customer is paying this trade site by check withdrawal <sup>[27]</sup>.

**Payment by electronic wallet:** Electronic wallet is a program developed to shop in virtual environment. For the use of the electronic wallet, users are beginning to use the wallet by downloading this program to their computer or smart phones and identifying their personal information once <sup>[28]</sup>. Electronic wallet payment is a convenient method for frequent shoppers in the virtual environment. Many personal data are stored in here such as credit cards, passwords, and financial information <sup>[29]</sup>.

**Payment with electronic fund transfer (EFT) system:** In Electronic Funds Transfer (EFT) system, payment transactions are made in the virtual environment over the currency of the country. The system has been divided into two types of transactions: transfer between customers and transfer between banks. In the inter-client transfer system, it includes payments such as rent payments, payments made by banks to customers, and salaries. In the

inter-bank transfer system, the banks also include the payments they made among themselves <sup>[30]</sup>.

**Payment with PayPal:** PayPal is an e-commerce organization that facilitates payment between parties through money transfers in a virtual environment. This system allows users to create an account linked to credit card on their website. Once the credentials are confirmed, the user can initiate payments from other PayPal accounts. The PayPal system is a system that does not require you to open credit card information or bank account information for creditors or payers. This provides a safe environment for electronic Exchange <sup>[31]</sup>.

**Cash on delivery:** Payment system at the door is to make payment when the consumer who orders in electronic environment gets the product from the relevant cargo company. These payments are mostly made in cash as well as credit cards. The door-to-door payment system plays an important role in eliminating customer safety concerns. In the evaluations made, especially in the developing countries, some consumers do not want to give credit card information in the virtual environment, leading to the payment system at the door <sup>[32]</sup>.

As it is seen, there are many different payment methods. The selection of the payment depends on the requirement of the e-commerce business. The subject of this study is not to decide which method is best. However, these methods can be inferred through their security and privacy concerns. Security technology for payments online is an important issue. Moreover, increasing payment customer experience also increases the adoption of electronic payments. Therefore, security and privacy concerns regarding the personal data and customer information can act as a restraining factor in the market. The recent trend prevailing in the market is the rise in mobile biometrics for payments such as fingerprint recognition, voice recognition, iris recognition, and facial recognition.

## 5. Customer Satisfaction

In addition to the profitability of the companies, the attitude of the customers towards the firm is also important in terms of the future of the company. The companies should perform their best effort in order to acquire new customers, not to lose existing customers, and to regain old customers <sup>[33]</sup>. Therefore, the companies need to keep their customers in the foreground and the satisfaction of the customers should be well defined

Customer satisfaction is generally defined as the satisfaction level of the customer's wishes and needs in the consumption of a particular service or product that affects the purchase request of the next product <sup>[34]</sup>. Satisfied customers are ready to buy products and services that companies will present to the market. On the other side, unsatis-

fied customers can negatively affect the decisions of other customers and lower the companies' sales.

The reasons for unsatisfied customers are discussed below<sup>[35]</sup>.

Inadequate customer service.

Business employees' disinterestedness and disrespect towards the customer.

Imbalances in prices.

Waiting times and similar disturbing problems.

Inefficiency of complaints management.

The companies should evaluate customer complaints and improve their business to increase customer satisfaction. A successful effort and improvement of businesses in products and services will have a positive impact on customer satisfaction and desire to purchase again. However, an unsuccessful effort to improve the business will have a negative effect on customers because they will create a second frustration. It will destroy the customer's desire to purchase and reduce his commitment to business<sup>[36]</sup>.

The unsatisfied customers are more important than they are thought to be. Because, there are some conclusions about the spread of customer dissatisfaction. One of these studies shows that 90% of the unsatisfied customers never purchase anything from the company where they become unsatisfied. In addition, they share their negative thoughts for that company with at least 10 people about this dissatisfaction. According to another research, "3-33" system is brought to the stage. According to this system, a satisfied customer talks with 3 people about the good experience, but an unsatisfied customer shares his negative thoughts with 33 people. Therefore, companies must maintain customer complaints management effectively<sup>[37]</sup>.

In order to manage customer complaints and increase customer satisfaction, there should be a measurement technique. Companies can use a number of different techniques to measure customer satisfaction. Some of the important methods used in the process of measuring customer satisfaction after the academic researches are examined in the headings below.

Focus groups: Focus group interviews are an effective technique in obtaining information except for digital information in customer relations<sup>[38]</sup>. In this technique, interviews are conducted in a suitable environment by educated staffs who manage the interview in small groups. The important thing to see is the unexpected consequences reached during these discussions<sup>[38]</sup>.

Survey management: Surveys conducted in customer relations include quantitative and qualitative measurements. When these measurement programs are in use, the company should make an assessment based on the location in which they are located. During the creation of the

questionnaires, it is necessary to clearly state the objectives of the company in an understandable, achievable and measurable quality<sup>[38]</sup>.

Benchmarking method: Customers are satisfied with meeting their expectations by companies. The best way to use products and services is to have the best processes<sup>[39]</sup>. One of these applications of the benchmarking method is to take into account the best practices in the world for doing a job<sup>[38]</sup>.

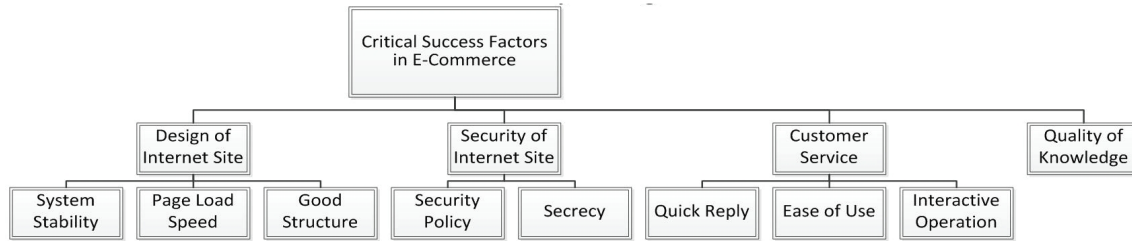
Critical event technique: The critical event technique is a method of examining the behavior of employees or customers against critical events. In general, these behaviors and observations are collected and classified<sup>[38]</sup>. In this technique, employees and customers report critical situations that affect or are dissatisfied with themselves in situations they are experiencing<sup>[38]</sup>.

## **6. Critical Success Factors in Electronic Commerce**

In addition to measuring the customer satisfaction, companies need to be aware of the critical success factors (CSFs) in e-commerce. Hence they can improve their business processes according to these factors. There are many studies in the literature about the factors affecting customer satisfaction in e-commerce.

According to Sung<sup>[40]</sup>, there have been few studies explicitly examining CSFs for E-commerce. Most studies implicitly advises a set of factors to be considered in E-commerce. Due to literature review, Sung<sup>[40]</sup> identified 16 CSFs which were mentioned by at least three studies. Sebora et al.<sup>[41]</sup> analyzed the effects of three dimensions of traits, and support systems on the success of e-commerce. These dimensions were nominated as; Founder Factors, E-Service Factors, and External Factors. Under each dimensions they examined different traits and behavioral styles. Due to their results; Achievement Orientation and Locus of Control were found as important aspects of Funder Factors. Reliability and Ease of Use were noted as the significant components of E-Service Factors. Choshin and Gaffari<sup>[42]</sup> pointed the fact that, success in e-commerce depends on determining the effective factors. Therefore, they defined two sets of both inside and outside organizational effective factors. Due to their study, customer satisfaction, the amount of costs, infrastructures, and knowledge-information are the effective factors for e-commerce success. Nisar and Prabhakar<sup>[43]</sup> also analyzed the customer satisfaction in e-commerce. They determined the factors affecting customer satisfaction. They also noted a relationship between customer satisfaction and consumer spending in e-commerce.

The list of CSFs for ecommerce can be extended. How-



**Figure 6.** Hierarchical representation of the critical success factors in E-Commerce

ever, depending on the current literature, the major CSFs can be classified under headings and the related sub criteria can be listed as shown in a hierarchical way in Figure 6.

### 6.1 Design of Internet Site

In electronic commerce, poorly designed internet sites can lead to loss of existing and potential customers. Therefore, the design of these sites is important for enterprises. Design is usually applied to upgrade the quality of a website's system. The variables needed to evaluate an internet site are listed below <sup>[44]</sup>.

**System Stability:** The Internet system contains technological hardware and software such as the system, applicability, availability, reliability and usefulness of the system. The web platform system should be stable and reliable for the customers.

**Page Load Speed:** Customers do not like the slow downloading of their website pages they shop. Therefore, page loading is an important measure at the point of evaluating internet sites. Very large and complex pages should be divided into several pages. Large footprint elements such as images and video must be compressed before being loaded.

**Good Structure:** The structure and logical flow of the Internet system is welcomed. Well-crafted product display includes functions such as order and payment, order management. It is also easy to update and maintain.

### 6.2 Security of Internet Site

Internet sites have two parameters in terms of security. One of them is security policy and the other is secrecy.

**The Security Policy:** It means that there is a security policy on internet sites.

**Secrecy:** It means that the website is committed to protecting your personal privacy <sup>[44]</sup>.

Both parameters are important factors for customer satisfaction. Clients often prefer to shop on websites with high security features. Therefore, enterprises should pay attention to security policy and privacy factors in internet sites.

### 6.3 Customer Service

Today, customer service has become an important measuring factor in the success and failure of electronic com-

merce <sup>[44]</sup>. Improved customer service quality is an important factor in achieving high customer satisfaction for businesses operating in e-commerce. Customer service has revealed four important elements. These factors are examined below <sup>[44]</sup>.

**Quick Reply:** After a quick response, the customer's feedback is sent to the website or customer service center, the business should respond to it as soon as possible.

**Ease of Use:** It is easy to browse on the internet site or look at the catalogs. It means that you can easily access everything you want. What the customer wants on the site is important. For this reason, businesses need to install a user-friendly search engine or system. It is a very important factor in ensuring customer satisfaction.

**Interactive Operation:** It is one of the most effective methods used to understand the customer. A customer service management that businesses use to inform their customers of low-priced offers. These include e-mail, free phone line, address, online chat and other real-time communications software.

**Frequently Asked Questions:** Businesses sometimes divide a page on common issues. Many of these questions can be seen by the customers. This causes problems to be solved easily and increases productivity.

### 6.4 Quality of Knowledge

Information is an important issue in e-commerce. As explained in the research conducted by an e-commerce company called Webbonanza.com, the important thing is that information attracts visitors to the website. The information includes all content related to website and its content <sup>[45]</sup>.

Some measurable variables can include whether emails or order confirmation messages are available on the website. It is also important for the information to be understandable and reliable. All these factors contribute to the quality of information. In order for the customer to be satisfied, the business needs to maintain high standards for these information parameters <sup>[45]</sup>.

## 7. Conclusion

This study mainly fulfills the gap in the literature by providing a brief analysis for e-commerce including all of the related components. In addition, the critical success fac-



tors which should be considered are also specified for the companies in e-commerce business.

A brief review about the e-commerce is presented including the definition and importance of e-commerce. The rising importance of e-commerce is also supported by statistical data, which shows the increase in total e-commerce sales worldwide. Also, the advantages and the differences between e-commerce and traditional trading system are elaborated. Eight different tools which can be used in e-commerce are listed. Seven classes of e-commerce types are investigated. Nine payment methods in e-commerce are explained. Importance of customer satisfaction in e-commerce is underlined. As the last, four critical success factors for e-commerce are specified and tabulated in a hierarchical structure including the sub-factors. By elaborating various aspects of e-commerce, the main aim of this study, which is to provide a comprehensive and brief review about e-commerce, is achieved.

Although this is a comprehensive study for this topic, it is open to some further studies in this research area. Firstly, other components of e-commerce can be embedded to this study. For example, the difficulties or problems occurring in the contemporary trading systems can be studied. Secondly, the customer satisfaction ratio of an e-commerce company can be measured as a case study. Thirdly, for a specified country, the best website in e-commerce can be identified with using one of the multi criteria decision making methods. The critical success factors nominated in this study can be used as the criteria to measure the performance of alternative web sites of e-commerce companies.

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