A Conceptual Overview Of E-Commerce: Its Nature And Mechanisms

Ammari Samir University of 20 August 1955 Skikda (Algeria), E-mail: s.ammari@univ-skikda.dz

Saad Guermeche Zohra University of 20 August 1955 Skikda (Algeria), E-mail: za.saad.g@gmail.com

Raki Ahcene University of 20 August 1955 Skikda (Algeria), raki.ahcene@yahoo.fr

Abstract :
This study investigated the nature and mechanisms of e-commerce by clarifying fundamental concepts and practices within this domain. The research revealed that e-commerce has emerged as a crucial alternative for competitive businesses, effectively resolving challenges prevalent in traditional commerce. E-commerce offers unique products, facilitates rapid access to commercial information, and streamlines interactions with global economic players. However, the flourishing of e-commerce requires a robust telecommunications infrastructure and a flexible, transparent legal and regulatory environment to ensure its continued growth and prosperity.

Keywords: E-commerce, Internet.

1.Introduction :

E-commerce, a manifestation of information and communication technology, has revolutionized the exchange of goods, services, and data. Leveraging the widespread availability of the internet, e-commerce offers a convenient and expeditious alternative to traditional commerce practices. In this digital age, where the internet has permeated every aspect of life, the concept of e-commerce has gained prominence, with various definitions and interpretations proposed by global organizations, institutions, and economists. Additionally, e-commerce encompasses a wide range of models and overarching objectives. In light of these considerations, this research paper aims to elucidate the fundamental concepts and theoretical underpinnings of e-commerce, alongside a comprehensive examination of its mechanisms.

1.1. Research Problem:

E-commerce stands as a testament to the advancements in modern information technology, enabling seamless facilitation of commercial operations through data-driven approaches. Data about commercial activities can be efficiently collected, stored, processed, and exchanged

among various stakeholders involved in commercial and economic endeavors. This backdrop gives rise to the following research problem:

What is the nature of e-commerce? And what are its mechanisms?

1.2 Research Objectives:
The objectives of this study are as follows:
- To understand the concept and characteristics of e-commerce;
- To highlight the significance and objectives of e-commerce;
- To identify the primary mechanisms or processes of e-commerce.

1.3 significance of the Study:
A thorough understanding of the nature and benefits of e-commerce is crucial for motivating companies and institutions to adopt this innovative approach in their domestic and international commercial transactions, ultimately contributing to their success and the growth of the national economy.

2. Fundamentals of E-commerce:

2.1 Definition of E-commerce:
A precise and universally accepted definition of e-commerce remains elusive due to the diverse interpretations proposed by various organizations and forums, coupled with the evolving nature of the technologies employed in this form of commerce. Consequently, formulating a definitive definition of e-commerce proves challenging. Despite the widespread use of this term, a unified definition has yet to emerge. Here are some notable attempts to define e-commerce, encompassing the multifaceted aspects of this concept:

▪ E-commerce encompasses electronic exchanges related to commercial activities. It can also be viewed as the relationships between businesses (Inter-Enterprises), between businesses and government agencies, or exchanges between businesses and consumers (Belkacem & Ali, 2003, p. 70).

▪ E-commerce is the process of buying or selling goods and services through open computer networks such as the Internet(Al-`Ayyach, 1999, p. 98).

▪ **European Commission:** E-commerce is the conduct of business electronically. It is based on the electronic exchange of data, whether written, visual, or audible. It also includes a wide range of commercial activities related to the exchange of goods and services, the completion of sales and purchases, and the delivery of digital content, electronic financial transfers (EFTs), electronic invoices, online auctions, marketing activities, and after-sales services. traditional activities (Hind, 2004, p. 14)

▪ **World Trade Organization (WTO):** The WTO provides a broader definition of e-commerce, encompassing "the production, distribution, marketing, sale, or delivery of goods and services to the buyer through electronic means" (Ibrahim, 2003, pp. 11 -12).
This definition encompasses five types of transaction-related activities:

❖ **Advertising goods and services:** These are displayed online through virtual stores or online retailers.

❖ **Exchanging information, interacting, and negotiating between the seller and the buyer over the network.**

❖ **Entering into deals and contracts through the network.**

❖ **Fulfilling financial obligations through electronic payment methods.**

❖ **Distributing and delivering goods, services, and information, and following up on procedures.**

This broad definition does not limit e-commerce to the purchase of a specific good or service. Instead, e-commerce encompasses any information or services provided by one company to another or by a company to a consumer over the Internet or other electronic communication channels, starting with pre-purchase information and ending with after-sales services. We are witnessing a diverse range of operations related to contracting and establishing business relationships through electronic communication channels, particularly the Internet.

➢ **Roger Clarke:** Clarke defines e-commerce as "the conduct of business related to goods and services with the help of communication media."

➢ **Others:** Some define e-commerce as "any use of technological means and information networks to conduct the buying and selling of products and services online, such as the web, electronic data exchange, E-mail, electronic money transfers, and smart cards" (www.ilr.cornell.edu).

An analysis of these definitions reveals that e-commerce encompasses the following elements and characteristics:

✓ **Conducting business operations between companies, companies, and their customers, and companies and governments through the use of information technology and communication networks to perform these operations.**

✓ **Aiming to improve performance efficiency and achieve effective interaction.**

✓ **Transcending the time constraints that restrict the movement of commercial transactions.**

✓ **Enabling rapid response to market demands through customer interaction.**

✓ **Simplifying procedures and clarifying work procedures.**

It becomes clear that e-commerce is a system that enables the execution of all aspects related to the purchase and sale of goods, services, and information through the Internet and other global commercial networks. It also enables electronic movements that support revenue generation, such as demand stimulation activities for goods, services, and information. E-commerce can be likened to an electronic marketplace where sellers (suppliers, companies, blinds), intermediaries (brokers), and buyers (consumers) interact, and products and services are offered in a virtual or digital format and paid for using electronic currency.

In the conceptual and definitional framework, e-commerce takes into account the following: (Qawi, 2005, p. 2)

➢ **From a communication perspective:** E-commerce is a means of delivering information, services, or products through telephone lines, computer networks, or any other technological means.

➢ **From a business perspective:** E-commerce is the application of technology to conduct commercial transactions automatically and efficiently.

➢ **From a service perspective:** E-commerce is a tool that enables businesses, consumers, and managers to reduce service costs, improve service efficiency, and expedite service delivery.

> **From an Internet perspective:** E-commerce is the buying and selling of products, services, and information over the Internet.

In essence, e-commerce is a global tool for exchanging non-physical goods in various sectors, including banking, brokerage, and the legal framework

2.2 Key Characteristics of E-Commerce

E-commerce is distinguished from traditional commerce by several key characteristics(Tawfik, 2001, pp. 492-493):

1. **Utilization of Information Technology and Communication Networks:** E-commerce employs information technology and communication networks to facilitate business operations between companies, between companies and their customers, and between individuals.

2. **Enhancing Efficiency and Effectiveness:** E-commerce aims to improve operational efficiency and achieve effective interactions.

3. **Transcending Geographical Barriers:** E-commerce breaks down geographical barriers that traditionally hinder cross-border business transactions.

4. **Responsive to Market Demands:** E-commerce enables rapid responsiveness to market demands through customer engagement and fulfillment of their needs.

5. **Comprehensive Concept:** E-commerce encompasses not only the electronic exchange of goods but also extends to manufacturing and production processes, streamlining the entire business cycle.

6. **Simplified Procedures:** E-commerce simplifies and streamlines business processes.

7. **Data Flow and Impact on Accounting Systems:** E-commerce facilitates the flow of data, which in turn impacts a company's accounting systems through electronic data and document exchange.

8. **Real-time Interaction and Delivery of Non-physical Goods:** E-commerce enables real-time interaction with multiple sources and the delivery of non-physical goods over the Internet, unlike traditional methods that were limited or produced low-quality copies**(**Ahmed, 2003, p. 70).

9. **Transforming Business Structures:** E-commerce is expected to transform existing business structures, potentially leading to the disappearance of traditional marketing departments, blurring roles between suppliers, manufacturers, and retailers, diminishing the need for physical stores, enabling virtual shopping experiences, reducing the need for large company buildings, minimizing employee numbers, facilitating the handling of various products, eliminating the need for company warehouses, shifting order fulfillment to production centers, altering customer, to beg, and product interactions, shifting the balance of power towards customers, reshaping relationships between producers, distributors, retailers, and customers, prompting global regulation and intervention by major powers to protect their interests, and accelerating the shift of internet services to homes, enabling consumers to access e-commerce platforms from their homes. The race to own internet domains indicates that company success hinges on adapting to rapid market, technological, and customer trend shifts, with the internet at the forefront.

2.3 Objectives of E-commerce

E-commerce has several general objectives, the most important of which are:

➢ To cover all traditional commercial activities such as correspondence, document exchange, contract negotiation, money transfer, advertising, and buying and selling.

➢ Online shopping saves time (because the shopper does not need to go to a shopping mall, for example, to buy what they want).

➢ Online shopping saves money (because it saves travel costs and possibly transportation costs).

➢ The shopper can make a wide shopping trip online to choose the right product at the right price.

➢ E-commerce means, among other things, advertising and promoting (shopping) for a product, any product, through the Internet. Since the Internet is nothing more than a means of communication and interaction, this is the similarity that the process of comparing the Internet with traditional marketing methods ends with, which makes it suitable for marketing like other means. E-commerce services are the most effective of all known advertising media (radio, television, newspapers, billboards, etc.) because of the global nature of this medium (which is completely new) and its spread as an independent unit in all corners of the world.

➢ Bridging the digital divide by taking advantage of the endless benefits it offers.

➢ E-commerce services in developing the digital economy in particular and digital culture in general.

➢ Supporting the national economy, especially in the field of import and export, by providing markets of infinite size to both the public and private sectors.

➢ Supporting the national economy, especially in the field of import and export, by providing markets of infinite size to both the public and private sectors.

➢ E-commerce services achieve the principle of democratization of market creation (markets for everyone), meaning that they eliminate the role of intermediaries

2.4 The Importance of E-commerce :

E-commerce is of great importance, and this importance is reflected in the following (Djalal, 2002, pp. 33, 34):

❖ It is a unique and unprecedented way to reach global markets simultaneously at the lowest cost. It helps sellers overcome distance barriers and reach distant, diverse, and multiple markets. It also helps buyers enjoy the same benefits through the same means at the same time. It also helps overcome time barriers and deal with customers around the clock. Therefore, it is a real application of the concept of globalization and thus provides endless opportunities to offer goods and services from the same place to all people, without being bound by the limits of space, distance, or time.

❖ It is an effective way to conclude deals between traders through direct electronic contact between them. Thus, it eliminates paper documents and their associated expenses, and it also saves general and administrative expenses and communication costs.

❖ It leads to an exchange of benefits between traders, sellers, and buyers. It also works to rationalize the decisions taken by each of them, due to the flow of information between them in a timely, coordinated, and accurate manner.

❖ It contributes to simplifying and organizing project operations and achieving their goals by eliminating delays in issuing administrative decisions, preventing errors, and reducing costs, thus preserving the rights of project owners and increasing profitability.

❖ It helps companies to follow modern manufacturing systems assisted by computers in terms of determining the sequence of

❖ operations and the method of operation on the components of the product, controlling and monitoring operations, planning the needs for materials and manufacturing resources, and the specified time.

❖ It changes the image of companies and transforms them from large companies suffering from complex organizational structures and large numbers of employees to a small company with a small number of employees. This small number of employees will also have high levels of knowledge and skills in the era of e-commerce, as follows:

❖ An almost virtual company, in the sense of the disappearance of huge buildings and offices crowded with employees and thousands of files, and an endless stream of paper transactions.

❖ It deals in an infinite variety of goods and services.

❖ Warehouses and inventory almost disappear from it,as customer orders can be directed and fulfilled directly from production centers and suppliers.

❖ It is a simple and easy-to-use way that can be used by all classes and types of individuals and companies in a short time and at the lowest possible cost (Djamel, 2002, p. 14).

❖ It is fully automatedand relates to computers and the Internet in all its transactions.

3.E-commerce Mechanisms:

E-commerce encompasses various mechanisms based on the relationships between its key stakeholders: businesses (Companies or Business Units), consumers (Customers), and local or government administrations. These mechanisms can be classified into different types of e-commerce, including:

3.1 Business-to-Business (B2B) E-commerce:

B2B e-commerce involves transactions conducted between businesses using communication networks and information technology to exchange purchase orders, invoices, and payments. This type of e-commerce is currently the most prevalent, both within and across countries, utilizing electronic document exchange. It accounts for approximately 80% of the total e-commerce volume (Abdel Hamid , 2004, p. 24).

B2B e-commerce encompasses all commercial activities conducted between businesses, including production, raw material supply, machinery and equipment, intermediate goods, transportation, distribution, and other related processes.

B2B transactions are typically restricted to specific suppliers or customers of a company or organization. Security measures, such as passwords, private web addresses, and secure electronic transaction codes, are implemented to protect sensitive information and prevent unauthorized access. Estimates suggest that B2B e-commerce is about ten times larger than business-to-consumer (B2C) e-commerce. In this context, businesses prioritize attracting a targeted audience rather than maximizing the overall number of visitors. The focus lies on the quality of visitors rather than quantity. This exchange involves the flow of information over the Internet from the seller to the customer (Jean, 2001, p. 46).

3.2 Business-to-Consumer (B2C) E-commerce:

B2C e-commerce involves direct transactions between businesses and individual consumers. This type of e-commerce encompasses the retail sector, where businesses sell products and

services to consumers through online platforms. B2C transactions can occur at both the local and international levels. Consumers browse and select items from a company's website, make online payments, and receive purchased goods or services either digitally or through physical delivery.

While B2C e-commerce is still relatively smaller compared to B2B e-commerce, it is gaining significant traction as businesses recognize the immense potential of the consumer market. Large, reputable companies can effectively leverage e-commerce to reach and engage with consumers worldwide.

3.3 Business-to-Government (B2G) E-commerce:

B2G e-commerce encompasses transactions between businesses and government agencies. It facilitates interactions such as tax payments, procurement processes, and regulatory compliance. Governments utilize e-commerce platforms to publish regulations, fees, and procedures, enabling businesses to access and comply with relevant requirements electronically. Additionally, businesses can use e-commerce to apply for licenses, pay customs duties, and manage import clearances.

B2G e-commerce also facilitates access to government information, such as job openings, economic data, and financial updates. While still in its early stages in many countries, B2G e-commerce is transforming the way businesses interact with government entities.

3.4 Consumer-to-Consumer (C2C) E-commerce:

C2C e-commerce involves direct transactions between individual consumers. It encompasses online platforms where consumers can buy and sell goods and services from each other. This includes online marketplaces, auction sites, and classifieds sections. Consumers can list their items for sale, browse listings from other users, and engage in direct transactions.

EBay, Oxl, and Craigslist are prominent examples of C2C e-commerce platforms. These platforms enable consumers to exchange a vast array of goods and services, often focusing on secondhand items and personal services. C2C transactions are often characterized by peer-to-peer (P2P) interactions.

3.5 Consumer-to-Business (C2B) E-commerce:

C2B e-commerce involves transactions between individual consumers and businesses. It encompasses scenarios where consumers offer their services to businesses or seek assistance from businesses to market and sell their products or services. Consumers may also utilize e-commerce platforms to research and compare products offered by different companies, browse their websites, and virtual marketplaces, or participate in online auctions.

3.6 Consumer-to-Government (C2G) E-commerce:

C2G e-commerce facilitates electronic interactions between individuals and government entities. It encompasses online services and official transactions, such as paying taxes, applying for government jobs, or accessing government information. C2G e-commerce can be considered an integral component of e-government initiatives. This domain has witnessed significant growth in recent years, enabling consumers to seamlessly interact with government services through online platforms.

3.7 Government-to-Government (G2G) E-commerce:

G2G e-commerce involves the exchange of information and coordination between government agencies. It may also include commercial transactions, such as the transfer of goods by a government railway authority on behalf of another ministry (Ahmed, 2003, p. 12).

3.8 Government-to-Business (G2B) E-commerce:

G2B e-commerce utilizes the internet to facilitate the exchange of information between government agencies and businesses. This includes sharing data related to customs, taxes, and other regulatory requirements.

3.9 Government-to-Consumer (G2C) E-commerce:

G2C e-commerce involves the exchange of information between government agencies and consumers. It encompasses providing consumer protection information, delivering educational or cultural services, disseminating information to researchers, advertising public sector job openings, and other similar services. These interactions primarily focus on information exchange rather than direct commercial transactions.

3.10 Non-Business E-commerce:

Numerous non-profit organizations, including religious institutions, social organizations, government agencies, educational institutions, and charities, utilize various forms of e-commerce to enhance their operations, improve services to clients, reduce costs, and boost efficiency. These organizations, while not primarily profit-driven, leverage e-commerce to achieve their objectives (Nizar, 2002, p. 4).

3.10 Intra-Organizational E-commerce:

Intra-organizational e-commerce encompasses transactions conducted within an organization's internal network, such as the intranet or extranet, or through other private electronic networks (Mohamed, 2004, p. 161). This category includes all internal activities carried out online, involving the exchange of goods, services, and information. It encompasses a wide range of activities, from selling employee discounts to providing online training and implementing cost-saving measures. This type of e-commerce is often referred to as an Inter-organizational Information System (IOS), facilitating the flow of information within or between organizations.

Conclusion:

The 21st century is characterized by significant challenges and opportunities, particularly in the realm of information and communication technology (ICT) and the rapid advancement of e-commerce.

The internet, as the world's largest and most interconnected network, plays a pivotal role in facilitating global commerce, encompassing negotiations, transactions, sales, marketing, and financial exchanges. It is poised to become the primary driving force behind economic growth in nations worldwide. Based on the insights gained from this study, we can draw the following key conclusions:

🔸 E-commerce facilitates market expansion and rapid access to international markets, enabling businesses to conduct transactions promptly and at lower costs.

🔸 E-commerce significantly enhances the competitive advantages of companies and encourages new entrants into the market by reducing the costs of establishing a physical

presence and streamlining various stages of commercial exchange. This, in turn, intensifies competition and generates consumer surplus through lower prices.

➕ The growth and proliferation of e-commerce hinge on the development of a suitable infrastructure that supports its digital nature, including robust telecommunications and information networks.

➕ E-commerce offers a multitude of benefits across various dimensions, impacting both individuals and society as a whole.

In light of these conclusions, this study recommends the following actions:

➢ Invest in expanding and upgrading telecommunications networks to support the growing demands of e-commerce.

➢ Develop and implement robust e-commerce platforms that are secure, reliable, and user-friendly.

➢ Align existing laws and regulations related to commerce, taxation, standards, and measurements with the unique requirements of e-commerce.

➢ Introduce streamlined administrative procedures that facilitate e-commerce activities without hindering innovation and growth.

➢ Implement clear and enforceable consumer protection measures to safeguard the rights of all parties involved in e-commerce transactions.

➢ Implement comprehensive training and education programs in professional and administrative institutions to enhance technological skills and knowledge.

➢ Integrate technology education into the curricula of educational and academic institutions to prepare individuals for the digital age.

➢ Raise awareness and promote the adoption of ICT tools and services among the general public.

➢ Encourage the adoption of electronic banking solutions, including online payments, mobile banking, and digital wallets.

➢ Enhance the security and efficiency of e-banking platforms to foster trust and confidence among users.

➢ Streamline cross-border e-commerce payments to facilitate seamless international transactions.

➢ Establish reliable and cost-effective logistics networks to ensure timely and secure product delivery.

➢ Implement innovative solutions for last-mile delivery, including partnerships with local businesses and delivery services.

➢ Explore alternative delivery models, such as pick-up points and lockers, to enhance convenience for consumers.

➢ Implement stringent data protection protocols to safeguard sensitive customer information and financial transactions.

➢ Employ advanced cyber security measures to protect against cyber attacks and data breaches.

➢ Foster a culture of cyber security awareness among businesses and consumers to minimize risks and promote trust.

References:

Books:

1. Bouhniya, Qawi (2005). The Institutional and Legal Framework for E-commerce. Faculty of Law and Economic Sciences, University of Kasdi Merbah, Ouargla, Algeria.
2. Hamed, Hind Mouhamed (2004). Introduction to E-commerce. Dar Al-Gamaya, Egypt.
3. Lhanaoui, Mohamed Saleh et al. (2004). Introduction to Business in the Age of Technology. Dar Al-Gamaya, Egypt.
4. El-Shafei, Djalel (2002). Economic Globalization: The Impact on Taxation in Egypt. Egypt.
5. Abdel Hamid, Basyouni (2004). E-commerce. Dar Al-Gamaya, Egypt.
6. Al-Aissawi, Ibrahim (2003). E-commerce. The Academic Library, Egypt.
7. Mohamed, Abdel Mouhsen Tawfik (2001). E-commerce. Dar Al-Gamaya, Egypt.
8. Al-Naasan, Nizar (2002). The Contribution of E-commerce to Increasing Competitiveness and Reducing Costs. Egypt.
9. Naamat Al-Ayyach (1999). E-commerce: A Tool for Economic Competition in Global Markets. Arab Monetary Fund, Institute of Economic Policies, Egypt.

Articles:

1. Bachi, Ahmed (2003). The Reality and Prospects of E-commerce. Journal of the National School of Administration, Vol. 13, No. 2, Algeria.
2. Zairi, Belkacem, Tabouch Ali (2003). The Nature of E-commerce and Its Multiple Applications. The Arab Future Magazine May Issue.
3. Abdel Samee, Mouhamed Djamal (2002). Egypt and the Beginning of the E-commerce Era in the 21st Century. Journal of Administrative Research, Egypt.
4. Jacques Rechenmann jean (2001),Internet and Marketing, 2nd edition., Edition d'organisation, paris, Françe.

Websites:

1. http://www.ilr.cornell.edu (accessed on 20/10/2023)