The Role of E-Commerce in the Restructuring of Global Value Chains

Lahreche Douaa[1*], Benabdelaziz Samir[2]

[1] University of Tahri Mohamed Bechar (Algeria), lahreche.douaa@univ-bechar.dz
[2] University of Tahri Mohamed Bechar (Algeria), benabdelaziz.samir@univ-bechar.dz

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Summary: This study aims to introduce both global value chains and e-commerce, highlighting the contribution of e-commerce in restructuring and developing global value chains by analyzing its mechanisms of influence on the structure of production and international exchange. Digital technologies and electronic platforms have contributed to the redistribution of production activities on a global scale, enabling the emergence of more interconnected and flexible value chains based on data and technology rather than just physical capital.

The study concluded that the spread of e-commerce has expanded opportunities for trade integration, especially for small and medium-sized enterprises, by facilitating access to international markets and reducing traditional barriers. It has also contributed to improving production and supply efficiency by lowering transaction costs and accelerating the flow of information.

Amazon was chosen as a prominent model reflecting how e-commerce is employed to rebuild value chains through its Fulfillment by Amazon (FBA) model, which combines logistical efficiency, intelligent inventory control, and direct consumer interaction. This system has enabled the company to achieve advanced integration between suppliers and customers globally, enhancing the concept of shared value and redefining the standards of modern economic performance.

Keywords: E-commerce ; Global value chains ; Trade integration ; Amazon company.
Jel Classification Codes : L81 ; F14 ; F23

Résumé : Cette étude vise à présenter les chaînes de valeur mondiales et le commerce électronique, en mettant en évidence la contribution du commerce électronique à la restructuration et au développement des chaînes de valeur mondiales, à travers l'analyse de ses mécanismes d'influence sur la structure de la production et des échanges internationaux. Les technologies numériques et les plateformes électroniques ont contribué à la redistribution des activités de production à l'échelle mondiale, permettant l'émergence de chaînes de valeur plus interconnectées et plus flexibles, fondées sur les données et la technologie plutôt que sur le seul capital physique.

L'étude conclut que la diffusion du commerce électronique a élargi les possibilités d'intégration commerciale, en particulier pour les petites et moyennes entreprises, en facilitant l'accès aux marchés internationaux et en réduisant les obstacles traditionnels. Elle a également contribué à améliorer l'efficacité de la production et de l'approvisionnement grâce à la réduction des coûts de transaction et à l'accélération des flux d'information.

Amazon a été retenue comme modèle emblématique illustrant la manière dont le commerce électronique est mobilisé pour reconstruire les chaînes de valeur à travers son modèle Fulfillment by Amazon (FBA), qui combine efficacité logistique, gestion intelligente des stocks et interaction directe avec le consommateur. Ce système a permis à l'entreprise de réaliser une intégration avancée entre fournisseurs et clients à l'échelle mondiale, renforçant le concept de valeur partagée et redéfinissant les normes de la performance économique moderne.

Mots-clés : Commerce électronique ; Chaînes de valeur mondiales ; Intégration commerciale ; Entreprise Amazon.
Codes de classification JEL : L81 ; F14 ; F23

* Corresponding author, e-mail: lahreche.douaa@univ-bechar.dz

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I- Introduction:

E-commerce constitutes one of the most salient manifestations of digital transformation in the global economy, as it has contributed to reshaping production patterns and commercial exchange through the use of digital platforms as the primary medium for cross-border transactions. This shift has led to the emergence of new economic linkages among international actors, thereby strengthening market integration and facilitating the participation of firms—particularly small and medium-sized enterprises—in global trade activities.

Conversely, global value chains represent the framework that reflects the growing interdependence among countries across different stages of production, whereby design, manufacturing, assembly, and marketing processes are distributed across several nations according to their relative advantages. With the widespread expansion of e-commerce, it has become a fundamental mechanism for deepening integration within global value chains and restructuring them.

I.1. Research Problem

Based on the above, the central research problem can be formulated through the following main question:

How does e-commerce contribute to the restructuring of global value chains?

This central question gives rise to several subsidiary questions:

- What is meant by both e-commerce and global value chains?
- How do digital platforms enable firms, particularly small and medium-sized enterprises, to integrate into value chains?
- Through which mechanisms does e-commerce influence the structure and functioning of global value chains?

I.2. Research Hypotheses

To address the research problem, the following hypotheses were formulated:

- E-commerce is a key factor in reducing transaction costs and enhancing information flow across production and distribution stages, which improves the efficiency and resilience of global value chains.
- E-commerce contributes positively to the integration of firms into global value chains by lowering transaction costs and expanding market access opportunities.
- E-commerce leads to the restructuring of global value chains through the digitization of production and distribution stages and the redistribution of roles among economic actors.

I.3. Significance of the Study

This study derives its importance from addressing one of the contemporary themes in the digital economy, namely the role of e-commerce in strengthening integration within global value chains and reshaping them. It aims to highlight the role of digital platforms in transforming production and trade patterns and empowering firms—particularly small and medium-sized enterprises—to integrate into international production networks.

I.4. Research Methodology

This study relies on the descriptive-analytical method, by describing the variables related to both e-commerce and global value chains and analyzing the mechanisms through which e-commerce influences the restructuring of value chains and enhances integration within them.

To comprehensively address the topic, the study is structured as follows:

- Theoretical framework of e-commerce and global value chains
- The contribution of e-commerce to shaping global value chains

- Amazon as a case study

II- Theoretical Framework of E-Commerce and Global Value Chains:

The global economic environment is undergoing rapid transformations driven by advanced digital developments and increasing international interconnectedness. The intersection of global value chains with e-commerce has given rise to a new economic model. Global value chains represent the contemporary organizational structure for distributing production activities across borders, while e-commerce constitutes the vital system that ensures the smooth flow of goods and information.

II.1. The Nature of E-Commerce

Technological advancements have provided firms and individuals with unprecedented opportunities to access global markets. E-commerce has become an effective means of exchanging goods and services, transcending geographical and temporal constraints, and thereby enhancing the ability of both large and small enterprises to engage in international markets.

II.1.1. The Concept of E-Commerce

The concept of e-commerce comprises two main dimensions: the first relates to commerce as an economic activity involving the exchange of goods and services according to established rules and principles; the second pertains to the use of electronic media—namely information and communication technologies—as a means of executing these transactions. Accordingly, various definitions have been proposed to clarify the concept of e-commerce, including the following:

- According to the World Trade Organization (WTO), e-commerce is defined as an integrated set of production, distribution, marketing, and sales operations conducted through electronic means.
- The Arab Network's E-Commerce Committee defines e-commerce as the execution of some or all commercial transactions in goods and services conducted between business entities, or between consumers and business entities, using information and communication technology (Hadia & Hassani, 2024, p. 147).
- The Organisation for Economic Co-operation and Development (OECD) defines e-commerce as all forms of commercial information exchanged between firms and individuals, based on the electronic exchange of data and commercial information and its impact on institutions and the processes that support and govern commercial activities. (Zarqine & Jabbari, 2011, p. 31)

Based on the above definitions, e-commerce can be understood as the use of information and communication technologies—particularly the Internet—to conduct commercial transactions involving the exchange of goods, services, and information, whether between firms or between firms and consumers.

II.1.2. Fields of E-Commerce

Electronic commercial exchanges are carried out within a framework involving four main parties: individuals, institutions, companies of various types and sizes, as well as regulatory bodies and multiple government entities. Accordingly, the fields of e-commerce are classified based on the nature and identity of the key parties involved in the commercial transaction as follows (Ibrahim, 2018, p. 164)**:**

- **Business-to-Business (B2B):** This category encompasses all transactions conducted between business enterprises, including buying and selling operations carried out among producers, wholesalers, and retailers, with no involvement from consumers.
- **Business-to-Consumer (B2C):** This refers to direct sales transactions between companies and consumers, whereby the consumer browses the company's website, selects products, and purchases them online.

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- **Business-to-Government (B2G):** Companies provide goods and services to government entities in order to meet their needs for equipment, devices, and supplies in these commercial transactions.
- **Consumer-to-Consumer (C2C):** This type of e-commerce occurs between consumers, where an individual offers a product for sale online through personal websites or advertisements, and interested buyers contact the seller directly.
- **Consumer-to-Business (C2B):** In this model, the consumer provides commercial services or products and offers them to companies, which may then utilize these consumer-generated contributions to complete their business operations.
- **Consumer-to-Government (C2G):** These are transactions carried out between consumers and governments, such as paying electricity and water bills through official government websites.
- **Government-to-Government (G2G):** This includes electronic commercial transactions or information exchanges and coordination activities between government agencies using information and communication technologies.
- **Government-to-Business (G2B):** This involves government institutions using the Internet to exchange information with companies, such as tax-related data or customs duties information.
- **Government-to-Consumer (G2C):** This refers to services provided by the government to citizens, such as educational, medical, and cultural services, as well as providing researchers with statistics and data.

II.1.3. Advantages and Disadvantages of E-Commerce

a) Advantages of e-commerce (Gherzouli, 2018):

- The ability to shop online 24/7 and easily access goods without the need to physically visit stores, which saves consumers both time and effort.
- Greater freedom to choose and compare available goods and services online by browsing multiple websites to select the most suitable option, in addition to benefiting from price differences.
- The opportunity for consumers to exchange experiences and opinions regarding products through online communities.
- Easy access to global markets, which contributes to expanding the customer base, enhancing the effectiveness of marketing strategies, and ultimately generating additional profits for firms.
- Reduction in marketing and distribution costs for firms due to the direct communication established between businesses and their customers.
- The ability for firms to collect accurate market information by analyzing customers' purchasing behavior and understanding their preferences, as well as monitoring competitors' products in terms of features and prices.

b) Disadvantages of e-commerce:

- The buyer's inability to physically inspect the product before purchase, in addition to having to wait—sometimes a day or more—for delivery.
- Limited digital literacy among some consumers who may lack adequate computer or communication skills, especially in developing countries.
- The risk of credit card theft or forgery, which may result in consumers being charged for purchases they did not make.
- The absence of robust legal framework governing e-commerce transactions.
- The possibility of network breaches, which may lead to the leakage of sensitive information related to customers, firms, or even banks—posing a threat to data privacy and transaction security.

- Some individuals may be tempted to purchase products they do not need due to the attractiveness of advertisements and the ease of completing purchases using credit cards.

II.2. The Theoretical Concepts of Global Value Chains

Global value chains (GVCs) represent a modern pattern and a new form of international trade, contributing to a significant economic transformation. They have enabled countries to achieve rapid economic growth by participating in specific stages of production without the need to establish an integrated industrial system.

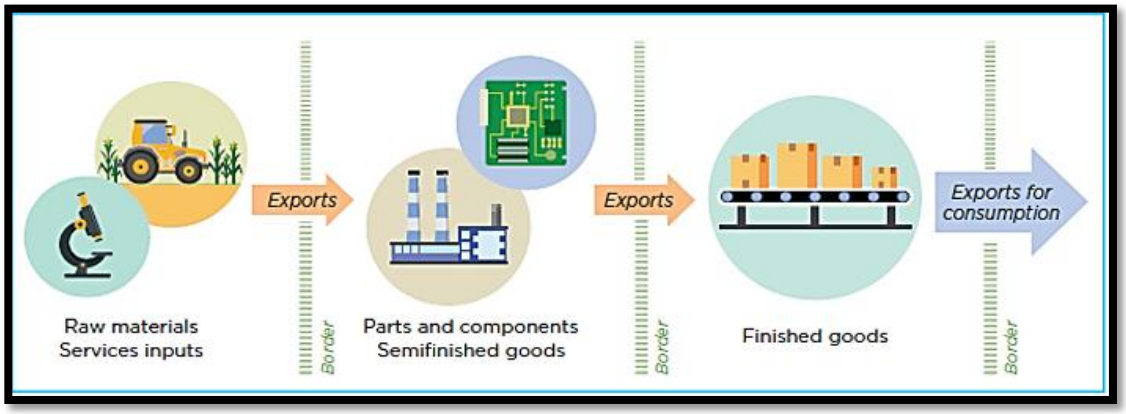
II.2.1. The Concept of Global Value Chains

Definitions of global value chains vary, and the most prominent among them include the following:

- The concept of the value chain introduced by Michael Porter refers to a set of interrelated activities carried out for designing, producing, delivering, and supporting a product, thereby transforming inputs into outputs that generate real value for the consumer (Tahmi & Brahimi, 2024, p. 23).
- According to the Organization for Economic Co-operation and Development (OECD), global value chains are defined as cross-border flows of goods, services, investments, knowledge, and individuals linked through international production networks. They have come to represent a modern model for organizing production processes on a global scale (Khediri & Belkacem, 2022, p. 441).
- They are also defined as the fragmentation of production stages—before, during, and after manufacturing—into multiple activities distributed across different firms and countries, with the aim of achieving cost-reduction advantages and enhancing competitiveness. Each activity contributes a distinct value to the product, the firm, and the national economy alike (Anissa & Darradj, 2022, p. 150).

Based on the above, global value chains may be defined as the process of disaggregating production components across various parts of the world and reassembling them into the final product according to demand conditions, production costs, and market accessibility. Thus, the value chain outlines the different steps of a firm's activities related to a particular good or service—from inception to its final delivery. The following figure illustrates the structure of global value chains.

Figure (1): Global value chains



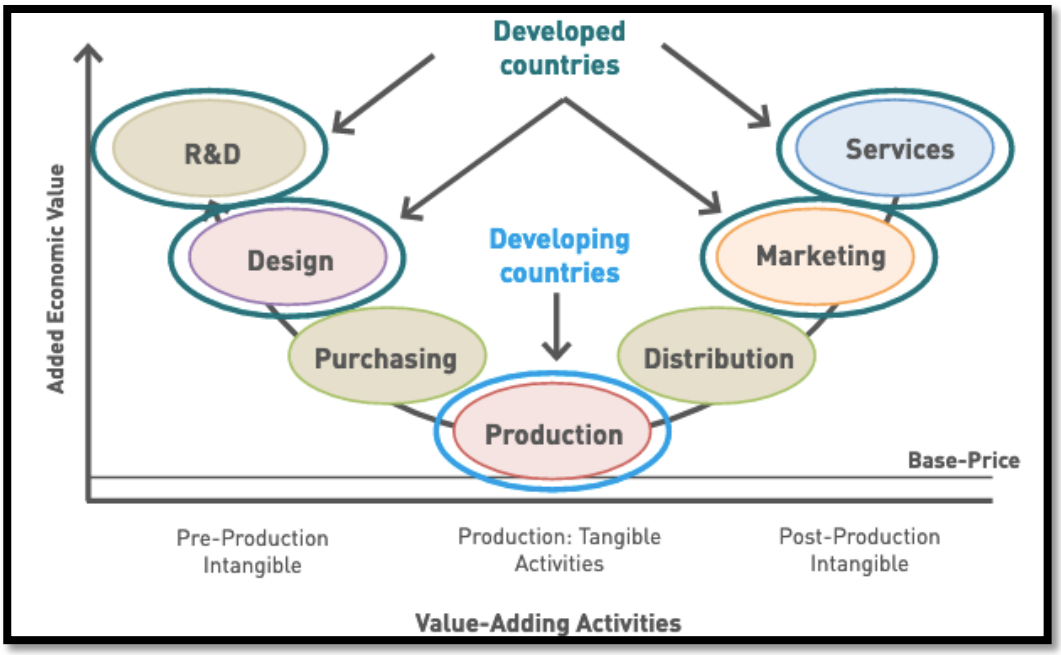
The source: Arab Monetary Fund, Policy Brief, Integration into Global Value Chains, October 2019, p. 2.

Each country within global value chains is assigned a specific function through which it contributes to the production of goods or the provision of services. These contributions span from the initial stages—such as raw material extraction and the provision of supporting services—to the final stages of use, including export for consumption. The value added generated by each country is measured according to the nature of the stage in which it is integrated within the chain, as this value varies from one role to another.

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The so-called "smile curve" is used to illustrate the position of each country within the chain and the extent of its contribution to value creation. The following figure presents the smile curve, which reflects the distribution of value added across global value chain activities.

Figure (2): The smile curve of global value chains



The source: World Economic Forum (2020), The shifting geography of global value chains: Implications for developing countries and trade policy.

The smile curve indicates the disparity in the distribution of value added across the stages of a global value chain, showing a U-shaped pattern in terms of each stage's contribution to total value added. Activities located at the two ends of the chain—namely, research and development (R&D) and design on one end, and marketing and brand building on the other—tend to generate the highest levels of value added. In contrast, intermediate production stages, such as component manufacturing and product assembly, contribute a smaller proportion of the total value added, highlighting the clear disparity in value distribution across the production stages. Consequently, most multinational companies concentrate design and marketing activities in advanced economies, while outsourcing assembly and manufacturing operations to emerging economies.

II.2.2. Key Determinants for Integration into Global Value Chains

Integration into global value chains (GVCs) constitutes a fundamental step for enhancing economic competitiveness and openness. Effective participation in these international production networks requires several essential determinants, most notably (Soufiane, 2015, p. 17):

- Reduction of Trade Costs: Lowering trade costs is a critical prerequisite for GVC integration, as contemporary trade relies heavily on the repeated exchange of intermediate goods across countries at different stages of production. High tariffs and complex administrative procedures undermine product competitiveness and increase costs. Therefore, countries aiming for effective integration should streamline administrative and customs procedures, reduce tariffs, improve the efficiency of ports and border crossings, and establish transparent customs systems that ensure the seamless flow of goods and services across borders.
- Promotion of Foreign Direct Investment (FDI): FDI plays a pivotal role in facilitating the integration of economies into GVCs. Multinational corporations act as the main drivers of these chains by allocating production stages across countries according to their comparative advantages. Attracting FDI fosters technology transfer, technical expertise, and adherence to quality standards, while also supporting the development and productivity enhancement

of local suppliers. Achieving this requires effective incentive policies, including tax exemptions, the creation of industrial zones, and the simplification of investment procedures to strengthen investor confidence and attract capital.

- Infrastructure Development: Advanced transport, communication, and logistics networks are essential for accelerating the movement of goods and information while reducing associated costs. This includes physical infrastructure such as ports, roads, airports, and storage facilities, as well as digital infrastructure, including Internet networks and tracking systems. Investment in both physical and digital infrastructure is therefore a critical condition for improving production efficiency and integrating the economy into global supply networks (Kozo, Keita, & Katsuhiro, 2019, p. 265).
- Improving the Business Environment: This is considered one of the main pillars for attracting investment and enhancing the integration of economies into global value chains. Clear regulations and simplified procedures help strengthen investor confidence and ensure the stability of their activities. Developing the business environment requires protecting intellectual property rights, facilitating business establishment, ensuring transparency and economic stability, as well as reforming the investment climate and removing administrative obstacles to support competition and enhance trade and investment structures.
- Enhancing Human and Technological Capabilities: Developing human capital is a fundamental element for effective integration into global value chains, particularly in the context of the shift toward a knowledge-based economy. Progressing to higher value-added production stages depends on possessing technical skills and competencies, which necessitates a focus on education and vocational training, fostering collaboration between universities and production institutions, and supporting technology transfer and innovation. This enables local talents to contribute effectively to value creation and improve competitiveness.

III- The Contribution of E-Commerce to the Formation of Global Value Chains:

E-commerce and global value chains constitute two fundamental pillars of the contemporary digital economy. E-commerce has contributed to accelerating the cross-border flows of goods, services, and information, while global value chains provide a framework for the global distribution of production. The two phenomena intersect in that e-commerce has become an enabling factor for expanding and developing global value chains.

III.1. E-Commerce as a Bridge for Integration into Global Value Chains

E-commerce is a pivotal factor in enabling firms to integrate into global value chains (GVCs). Digital systems facilitate communication with suppliers and buyers across borders and reduce the temporal and administrative costs of commercial exchanges. This shift toward electronic platforms has allowed firms to enhance their participation in global production networks and improve operational efficiency. E-commerce has also provided extensive opportunities for small and medium-sized enterprises (SMEs) to engage in value chains by granting them access to global markets without requiring substantial resources or complex physical infrastructure (Soufiane, 2015, p. 22). The mechanisms through which e-commerce influences global value chains are as follows:

- Reducing Transaction Costs: By simplifying processes such as searching for business partners, contract execution, electronic payment, and logistics.
- Enhancing Transparency and Market Access: Digital platforms facilitate rapid information flow across different production and distribution stages. Platforms such as Amazon, Alibaba, and Jumia allow suppliers to showcase their products to thousands of buyers worldwide, increasing their opportunities to integrate into value chains as suppliers or production partners.
- Expanding the Exchange of Intermediate Goods: Approximately 34% of products on these platforms are B2B (business-to-business) intermediate goods used in subsequent production stages, indicating that these digital transactions constitute a tangible part of global value chains.

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- Supporting Small and Medium-Sized Enterprises: E-commerce provides SMEs with digital tools that enable access to global markets without large physical infrastructure or substantial financial resources. It also facilitates faster international expansion, contributing to a diversified supplier base within global value chains (Emanuela & Ruslan, 2016, p. 22).

III.2. The Role of E-Commerce in Reshaping Global Value Chains

E-commerce has induced a profound structural transformation in the architecture of global value chains (GVCs), shifting them from the traditional linear model, historically dominated by multinational corporations, to a more open and interactive networked model managed by digital platforms. In the traditional model, production processes were hierarchical and vertically integrated, with large corporations controlling all stages of the value chain, from design through manufacturing to distribution. Supplier–manufacturer relationships were typically governed by long-term contracts with a limited number of partners, resulting in a linear flow of goods and information from suppliers to lead firms and finally to end consumers. This structure rendered value chains less flexible and reduced their ability to adapt to rapid changes in global markets.

The rise of e-commerce and digital platforms such as Alibaba, Amazon Business, and Jumia has given rise to a more dynamic and decentralized model. These platforms function as open global marketplaces, connecting millions of suppliers and buyers across countries without the need for traditional intermediaries. Firm size or geographic location no longer constrains participation in international trade, as even small suppliers can list their products on the platform and reach buyers in multiple markets. Similarly, companies can freely select suppliers offering the most favorable terms in terms of price, quality, or delivery speed (Moussa, 2010, p. 270).

Recent statistics show that approximately 36.5% of U.S. firms participating in global value chains utilize Alibaba for sourcing, highlighting the increasing reliance on digital platforms in reshaping cross-border production and trade relationships (Vivek & Jignesh, 2024, p. 19).

Consequently, global value chains have shifted from a top-down vertical model to a horizontal, networked model where interactions occur among multiple actors at various levels. This transition has resulted in a more flexible and interactive structure, characterized by transparency and multiple sources of value creation, enabling small and medium-sized enterprises (SMEs) to participate more effectively in the global economy and redistributing economic power within the international trade system.

In this framework, digital transformation and the expansion of electronic platforms have been decisive in enhancing the competitiveness of developing countries (Zarqine & Jabbari, 2011, p. 40). E-commerce allows these countries to overcome traditional barriers to participation in value chains, gain direct access to global markets, and reduce transaction costs. It also enables engagement in higher value-added production stages, such as design, marketing, and logistics services. However, the extent of these benefits depends on countries' capacity to develop digital infrastructure, strengthen human capital, and establish supportive legislative and institutional frameworks to ensure effective and sustainable integration into modern global value chains.

IV- Amazon as a Case Study:

IV.1. Company Overview

Amazon Inc. is one of the leading multinational corporations in the fields of e-commerce, cloud computing, artificial intelligence, and digital services. Founded in 1994 in Seattle, United States, by Jeff Bezos, it initially started as an online bookstore before evolving into a comprehensive global platform offering millions of products and services.

Amazon represents a pioneering model in e-commerce and the management of digital value chains. The company has successfully leveraged technological innovation to enhance operational efficiency and build an integrated ecosystem encompassing online retail, logistics services, data storage, and digital streaming. This has positioned Amazon as one of the most influential entities in shaping modern global commerce.

IV.2. E-Commerce through Amazon FBA

The Fulfillment by Amazon (FBA) system represents a pioneering and highly influential model in contemporary e-commerce, exemplifying a significant transformation in the management of logistics operations and digital supply chains (Harma & Telli, 2022, p. 13). At its core, FBA allows third-party sellers to leverage Amazon's sophisticated infrastructure by depositing their products in the company's strategically located fulfillment centers. Amazon then assumes responsibility for storage, inventory management, packaging, shipping, and customer service, effectively streamlining the operational aspects of e-commerce for the seller.

This system enables sellers to concentrate on marketing strategies, brand development, and customer acquisition, freeing them from the complexities and costs associated with direct logistical management. By integrating products into Amazon Prime, sellers gain access to a global customer base that prioritizes fast, reliable shipping and premium service, which not only enhances consumer trust but also significantly increases competitiveness in international markets.

Moreover, Amazon FBA demonstrates a seamless integration of e-commerce with digital value chains. It combines operational efficiency, technological innovation, and market reach, while facilitating data-driven decision-making through advanced analytics. Sellers can monitor inventory levels, track sales patterns, and optimize product listings based on consumer behavior insights provided by Amazon's platform. This not only accelerates market responsiveness but also allows SMEs and individual entrepreneurs to participate in global trade with minimal initial capital investment.

From a strategic perspective, FBA exemplifies how digital platforms can reshape global value chains by decentralizing logistics, reducing entry barriers for small and medium-sized enterprises, and fostering a more dynamic and inclusive global marketplace. The model highlights the interconnection between technological infrastructure, supply chain optimization, and market expansion, illustrating the broader potential of digital commerce to transform traditional production and distribution frameworks in the 21st century.

IV.3. Amazon's Global Value Chains

Amid the accelerating digital revolution shaping the global economy, the concept of Global Value Chains (GVCs) has emerged as a crucial analytical framework for understanding how value is created and distributed across borders. Amazon stands at the forefront of leading models in this domain, having successfully redefined the traditional value chain through its unique integration of digital and physical components.

IV.3.1. Primary Activities in Amazon's Value Chain

- Inbound Logistics: Inbound logistics constitute a foundational element of Amazon's value chain. The company relies on a global network of distribution centers equipped with advanced technologies that enable highly efficient inventory management. This system is supported by strong partnerships with international suppliers and artificial intelligence tools used for demand forecasting and inventory level optimization. Amazon also employs innovative approaches such as direct shipping to reduce costs and accelerate delivery, thereby enhancing operational flexibility during peak seasons.
- Operations: Operations comprise order processing, inventory management, delivery, and customer service to ensure high efficiency and customer satisfaction. Amazon leverages automation and robotics within its logistics centers and adopts the Just-in-Time (JIT) inventory strategy to reduce costs and accelerate processing. The company is also committed to sustainability through eco-friendly packaging and its plan to achieve carbon neutrality by 2040.
- Outbound Logistics: Amazon's outbound logistics benefit from a global distribution network consisting of fulfillment centers and delivery stations that ensure fast and efficient shipment. The company offers diverse delivery options such as Prime and the future drone-based Prime Air service. It relies on Amazon Logistics as well as advanced tracking technologies and artificial intelligence to improve speed and accuracy.

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- Marketing & Sales: Amazon's marketing and sales strategy is driven by data analytics and personalization through machine-learning algorithms that generate precise product recommendations, contributing to nearly 35% of total sales. Features such as one-click purchasing and Amazon Prime subscriptions enhance customer loyalty and revenue. The company supports these strategies through both digital and traditional advertising campaigns to strengthen its global presence.
- Services: Amazon offers far more than an e-commerce platform, thanks to its wide range of digital services. Amazon Web Services (AWS), which provides cloud-computing solutions, accounts for about 12% of the company's revenue. Amazon Prime integrates e-commerce with digital entertainment, offering diverse content through Kindle, Prime Video, and Amazon Music. Additionally, Amazon Go stores blend digital technologies with in-store physical experiences.

IV.3.2. Support Activities in Amazon's Value Chain

- Infrastructure: Amazon's infrastructure includes global data centers, advanced administrative systems, and an integrated technological backbone that ensures operational efficiency and continuity. It also encompasses a comprehensive set of internal policies and governance mechanisms that reinforce managerial flexibility and organizational resilience.
- Human Resource Management: Human resources represent a cornerstone of Amazon's success. The company invests in attracting, training, and motivating talent within a performance-driven and innovation-oriented organizational culture centered on customer focus. Amazon employs over one million workers worldwide.
- Technology Development: Technological innovation is the core of Amazon's competitive strategy. The company has developed pioneering technologies such as AWS, the Alexa voice assistant, and intelligent robotic systems in its distribution centers, all of which enhance operational efficiency and distinguish Amazon from its competitors.
- Procurement: Amazon's procurement strategy relies on a vast global supplier network, enabling extensive product variety and continuous supply availability. These partnerships help reduce costs and strengthen the company's competitive advantage on the international stage.

Through the seamless integration of technology, innovation, and operational efficiency, Amazon has succeeded in building a global value chain model that enables it to maintain its leading position in e-commerce and digital services.

V- Conclusion:

The accelerating dynamics between e-commerce and global value chains represent a profound strategic transformation in the structure of the contemporary global economy. Digital platforms have evolved from being mere distribution channels into core infrastructures that reshape the architecture of production, distribution, and cross-border trade. These transformations have enabled a wide range of economic actors—particularly small and medium-sized enterprises—to integrate into global production networks and participate in value creation in unprecedented ways.

Based on the analytical insights derived from both the theoretical and applied frameworks, the main findings of the study can be summarized as follows:

- E-commerce takes place within an integrated digital ecosystem involving four key actors: individuals, institutions, firms, and governmental bodies, each contributing to the seamless flow of goods, services, and information across digital platforms.
- Global value chains have emerged as a modern form of international trade, enabling countries to achieve rapid economic growth by participating in specific stages of production without the need for a fully integrated industrial base.
- Value added within global value chains depends on the nature of the stage in which a country participates; knowledge-intensive stages—such as research and development,

design, marketing, and branding—generate the highest levels of value added, whereas intermediate manufacturing and assembly stages contribute smaller shares.

- Integration into global value chains is crucial for enhancing economic competitiveness. Achieving this requires reducing trade costs, attracting foreign investment, developing physical and digital infrastructure, improving the business environment, and fostering human capital capable of contributing to high-value stages of production.
- Global value chains have shifted from a traditional vertical model to a more flexible, network-based structure, offering wider opportunities for small and medium-sized enterprises and redistributing economic power within the global trading system.
- The expansion of digital platforms plays a pivotal role in enhancing the competitiveness of developing countries by allowing them direct access to global markets while reducing traditional constraints. However, their ability to benefit fully depends on developing digital infrastructure, strengthening human capital, and improving institutional and regulatory frameworks.
- The Fulfillment by Amazon (FBA) system represents one of the most advanced models of contemporary e-commerce, enabling sellers—particularly SMEs—to leverage Amazon's sophisticated logistical and technological infrastructure by outsourcing storage, packaging, shipping, customer service, and returns management.
- Amazon's value chain constitutes an integrated model that reflects its operational efficiency and competitive advantage in global markets, relying on a synergistic system of primary activities (such as logistics, operations, marketing, and after-sales services) and support activities (including infrastructure, human resources, technology development, and procurement).

In light of these findings, several recommendations can be proposed to strengthen the role of e-commerce in reshaping global value chains:

Recommendations:

- Countries—especially developing ones—should invest in upgrading communication networks and expanding digital infrastructure to create a technological environment capable of supporting e-commerce and enhancing integration into global value chains.
- Emphasis should be placed on developing human capital by equipping the workforce with essential digital and analytical skills, including artificial intelligence and data analysis, to enable participation in high-value segments of production.
- Policymakers should adopt flexible and adaptive regulations that keep pace with digital transformations, while ensuring secure electronic transactions and encouraging innovation and digital entrepreneurship to strengthen trust in the digital environment.
- Small and medium-sized enterprises should be supported through financial and technological incentives, as well as facilitated access to international digital platforms, thereby enhancing their integration into global value chains and boosting their global competitiveness.
- International cooperation in the digital economy should be expanded through knowledge exchange and strategic partnerships that promote technology transfer and capacity building, ensuring more effective and sustainable integration into modern global value chains.

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