



# Digitalization of the Logistics Industry –A Catalyst for Sustainable Economic Development in Vietnam

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**Abstract.** Logistics is an industry that supports, connects, and drives socio-economic development, enhancing competitiveness and generating high added value. However, in Vietnam, the imbalance between production and logistics in strategic planning and policy has led to challenges in sustainable development. In this discussion, we will examine the reasons, barriers, and methods for addressing these issues to achieve the sustainable development goals for the 2025-2030 period, with a vision toward 2040.

**Keywords:** Logistics, digitalization, sustainable development.

## 1. Introduction

In the digital era, new logistics technology is pivotal in facilitating, integrating, and advancing socio-economic development, contributing to enhancing competitiveness by improving the effectiveness and efficiency of logistics operations. Freight companies can harness the power of artificial intelligence, cloud-based data storage, and AI-driven management applications to optimize their operations. This not only leads to significant reductions in logistics costs but also enhances the experience for partners through more reliable and flexible delivery services.

## 2. Digitalization in the Logistics Industry

The digital transformation of the logistics and supply chain management (L&SC) industry is becoming an increasingly essential factor for businesses seeking to remain competitive in a rapidly evolving market. This shift is not only redefining traditional operational paradigms but also fundamentally transforming long-established business models and blurring the boundaries that once separated distinct industries (Barrett et al., 2015; Cichosz et al., 2020). As digital technologies

continue to advance, more and more companies are recognizing the need to invest significant resources into exploring and adopting these innovations. By doing so, they aim to

capitalize on the vast array of digital opportunities available, which hold the potential to revolutionize societal structures, reshape economic landscapes, and bring about profound changes within organizations across the globe (Cichosz et al., 2020; Hribernik et al., 2020; Mikl et al., 2020b). The strategic embrace of digital solutions is no longer a luxury but a necessity for companies hoping to thrive in this new era of technological advancement. So, promoting digital transformation in the logistics industry is a crucial factor in driving economic growth in general and e-commerce in particular. According to Mr. Tran Thanh Hai, Deputy Head of the Import-Export Department at the Ministry of Industry and Trade, Vietnam showed strong determination in its resolution on technology application on May 16, 2024, stating that the country will accelerate its integration into regional and global economic platforms. The integration into these economies is progressing rapidly (Phan Trang, 2024). Our country has achieved this by proactively participating in free trade agreements (FTAs), which necessitates that companies stay up-to-date and fully capitalize on key opportunities in logistics and global supply chain management activities. Mr. Hai emphasized that the logistics sector plays a vital role in driving economic growth through the entire process from production, distribution to consumption to create added value. In addition, Mr. Dinh Thanh Son, Deputy Director of Viettel Post, said that the freight industry has seen clear growth, with Vietnam's logistics performance index (LPI) increasing by 3.3 entry points. in 2023 from 3.27 points in 2018, ranking 43/154 countries and fifth among ASEAN countries. Logistics industry revenue is estimated at about 42 billion USD, with an average growth of 14-16%/year (Phan Trang, 2024).

### **3. Digitalization in Commercial Electronics**

The Vietnam Logistics Business Association (VLA) reports that Vietnam, boasting the largest share of digital consumers in Southeast Asia – approximately 43.9 million people – is experiencing rapid growth in its digital commerce landscape. The country's digital commerce industry is projected to expand at an annual rate of 20-25%. In parallel, Vietnam's logistics sector, which currently contributes 20-25% of the national GDP, is expected to grow at a steady rate of 12% annually in the coming years (Vietnam New, 2024).

Integrating technology into the logistics industry brings a host of benefits, including a 14% reduction in delivery costs, up to a 13% increase in parcel volume per vehicle, and the optimization of smart delivery routes to ensure higher success rates – all while substantially lowering expenses. These advancements not only elevate the quality of freight services but also enhance customer experiences, reduce carbon emissions, and minimize waste, driving the industry towards sustainable development.

### **4. The current status of digital evolution in the logistics sector of Vietnam**

Based on the statistics provided by the Vietnam Logistics Service Business Association, among more than 4,000 businesses doing logistics services in Vietnam, up to 95% are domestic businesses, but most are small, large-scale businesses Restricted funding and workforce, along with limited experience in international operations. In addition, there is insufficient integration across various stages of the logistics supply chain, along with inadequate coordination among logistics service providers and trading companies. Consequently, domestic logistics companies encounter challenges in their purchasing and sales processes, which hinders their competitive capabilities.

As reported by Transparency Market Research, global investment in digital transformation within the logistics sector is expected to reach approximately \$94.97 billion by 2026, with a

remarkable growth rate of 15.2% projected from 2018 to 2026. In the United States, logistics real estate spending was estimated at \$14 billion in 2021, accounting for 28.98% of the worldwide market share, underscoring the significance of the U.S. logistics market.

Meanwhile, China, as the world's second-largest economy, is anticipated to achieve a market size of \$13.7 billion by 2026, with a compound annual growth rate (CAGR) of 10%. Japan and Canada are also expected to experience growth rates of 7.7% and 8.5%, respectively.

In Europe, Germany is projected to grow at a CAGR of around 7.8%, while the overall European logistics market is forecasted to reach \$15.1 billion by 2027. Furthermore, the Asia-Pacific region, driven by nations like Australia, India, and South Korea, is estimated to attain a market size of \$2.5 billion by 2026 (Transparency Market Research, 2018).

Recently, Vietnam's logistics sector has experienced a robust growth rate ranging from 14% to 16%, with an annual market size estimated at approximately \$40 to \$42 billion. The Vietnamese logistics landscape is home to over 3,000 enterprises, of which 89% are small and medium-sized companies with capital under 10 billion VND. About 5% of these businesses have capital between 10 and 20 billion VND, while joint ventures comprise around 10%, and foreign-owned companies

account for about 1% (approximately 30 firms) offering cross-border logistics services. Prominent players in this segment include DHL, FedEx, Maersk Logistics, APL Logistics, and CJ Logistics (Ministry of Industry and Trade, Report on Vietnam's Logistics 2022).

At present, only a select group of large companies, such as DHL and FedEx, along with leading local brands like Viettel Post and Vietnam Post, are equipped to meet the criteria for Comprehensive Delivery Services (CDS).

A significant milestone in the digital transformation of Vietnam's logistics industry is marked by the launch of the "ICD Vinh Phuc Logistics Center - SuperPort" project. This initiative is the result of a partnership between two major corporations, T&T Group (Vietnam) and YCH Holdings (Singapore), aimed at developing a smart and modern logistics hub in Vietnam. The project integrates an inland container depot (ICD) with a state-of-the-art multimodal logistics center, positioning itself as a leader in the region (Ministry of Industry and Trade, Report on Vietnam's Logistics 2022).

Eport, launched in 2012, initially provided information on containers, ships, and cargo monitoring. It now includes features like online declaration, e-invoices, loyalty program integration, and will add liquidation and automatic ship entry by Q4 2020. This allows export procedures to be completed online. The system automates monitoring of goods at Cat Lai port, which, since October 2018, has sped up procedures, reducing gate waiting times from 13 minutes down to 6 minutes and digital customs processing by 2 minutes for each container. This efficiency has decreased traffic congestion, increased productivity, and led to a 17% rise in throughput, with reductions in procedural and cashier department staff by 43% and 36%, respectively (Le Thu, Ha Thanh, 2020).

Despite the progress seen in certain companies like Saigon Newport and Vietnam Post, the overall logistics industry in Vietnam shows a low percentage of firms that have successfully embraced digital transformation. Research conducted by the International Data Corporation (IDC) highlights this issue, revealing that only 16% of Vietnamese companies are equipped for advanced digital transformation. Meanwhile, over 50% are classified in phase 2, indicating that their initiatives are inconsistent and restricted. Additionally, a third of businesses remain passive in response to market dynamics, lacking substantial initiatives toward digital transformation (Ministry of Industry and Trade, Report on Vietnam's Logistics 2023).

Vietnam Post has developed a comprehensive postal address code platform, featuring the Vmap mapping platform and a real-time address database. This innovative solution enables the precise identification and coding of household addresses, facilitating digital transformation and streamlining operations across various industries. By digitizing and accurately pinpointing customer addresses, the platform provides invaluable information for postal, transportation, logistics, and e-commerce businesses.

However, FPT's statistics highlight the significant challenges faced by Vietnamese businesses in their digital transformation efforts, with up to 70% experiencing failure. Logistics companies, in particular, encounter obstacles such as cognitive barriers, human resource issues, and cost challenges. Addressing these hurdles is crucial for successful digital adoption and realizing the full potential of innovative solutions like Vietnam Post's postal address code platform. (VNA, 2023).

## **5. Digital Transformation Solutions for the Industry Vietnam Logistics**

### **5.1. For the Government**

To achieve its ambitious goals for the logistics industry by 2030, Vietnam must prioritize digital transformation as a key driver in the context of Industry 4.0. The target of 8%-10% GDP contribution, an annual growth rate for services ranging from 15% to 20%, logistics services accounting for 50%-60% of the total, and a global Logistics Performance Index (LPI) ranking of 50th or higher necessitates a strategic and comprehensive approach. The government plays a pivotal role in facilitating this transformation (Vu Khue, 2024).

As a result, the government must persist in carrying out the following strategies:

- Tackling the deficiencies and constraints of IT infrastructure essential for digital transformation.
- Introducing tax incentives, land leasing policies, and interest rate subsidies to assist logistics companies in enhancing their investments in storage facilities, cargo sorting processes, and advanced automated technologies.
- Strengthening digital transformation linkages between government agencies, organizations, businesses, industry associations, IT associations, and logistics associations to ensure a coordinated effort in digital transformation.

### **5.2. For Business**

Logistics companies must recognize the critical need for digital transformation (DT) and consider it essential to remain competitive. The essence of digital transformation is rooted in people, mindset, and organizational culture. Leadership must spearhead the shift in mindset regarding DT. Skilled human resources are vital for managing a digital logistics system, necessitating advanced training and ongoing development. It's crucial to promote partnerships and cooperation between logistics firms, industry associations, and educational institutions to establish a robust knowledge base for the industry's workforce.

Digital transformation should be implemented progressively, adhering to a customized roadmap that aligns with the unique capabilities of each business. A well-structured plan is essential, along with meticulous process selection, the identification of reliable and financially sound suppliers, and the creation of a cohesive digital system that adheres to industry standards, ensures seamless connectivity, and facilitates effortless data retrieval.

Selecting a digital transformation model requires thorough and careful research. Close collaboration within the logistics industry and consultation with digital transformation experts

are essential to guide businesses toward the right approach. Adopting the appropriate model and new technologies will enable logistics companies to swiftly adapt to market trends. As part of the digital evolution process, logistics service providers need to engage in a unified transition, prioritizing the establishment of a strong digital infrastructure that supports the entire logistics network.

## 6. Conclusion

Digitalization has become an unmissable trend for the logistics industry in the new era. Through the application of advanced technologies such as AI and cloud computing, freight transporters can optimize operational performance, cut expenses, elevate service quality, and strengthen competitiveness. At the same time, digitalization further supports the sustainable advancement of the logistics sector, through optimizing the transportation process, effectively managing the supply chain and minimizing environmental impact.

In conclusion, digitalization is a new trend that requires logistics companies to quickly grasp and apply to keep up with market changes. This is the key for Vietnam's logistics industry to develop sustainably, effectively and competitively in the current technological age.

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