World Bulletin of Management and Law (WBML)
Available Online at: https://www.scholarexpress.net
Volume-47, June-2025
ISSN: 2749-3601

THE FOREIGN EXPERIENCE OF THE DEVELOPMENT OF TRANSPORT SERVICES IN THE CONTEXT OF THE DIGITALIZATION OF THE ECONOMY

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Article history:

Received: 28th April 2025
Accepted: 26th May 2025

Abstract:

In the era of rapid digital transformation, the transport services sector is undergoing profound changes across the globe. This article explores foreign experiences and best practices in the development of transport services in the context of the digitalization of the economy. By analyzing case studies from technologically advanced countries, the paper highlights the integration of digital tools such as intelligent transport systems (ITS), real-time data analytics, automation, and AI-based logistics management. It also examines the regulatory frameworks, public-private partnerships, and innovation policies that facilitate digital innovation in the transport industry. The findings offer valuable insights for policymakers and industry stakeholders seeking to modernize transport services in emerging economies through digital solutions.

Keywords: Digitalization, transport services, international experience, intelligent transport systems, automation, logistics, smart mobility, public-private partnership, digital economy, transportation innovation.

INTRODUCTION

In the 21st century, digitalization has become a defining feature of economic development and structural transformation across nearly all sectors, including transportation. The digital revolution has significantly altered how transport services are designed, delivered, and consumed. In many developed economies, the integration of digital technologies into transport infrastructure and operations has led to increased efficiency, reduced costs, improved user experiences, and enhanced sustainability [1]. With the advent of smart technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), big data analytics, and cloud computing, transportation systems have evolved into complex, interconnected networks capable of real-time communication and intelligent decision-making [2].

The global shift towards smart mobility and intelligent transport systems (ITS) reflects a broader trend of embracing innovation in public infrastructure and services. Countries like Germany, Japan, South Korea, and the Netherlands have become pioneers in integrating digital solutions within their transport frameworks. For instance, Germany's "Digital Rail for Germany" initiative aims to digitize its entire rail network by 2030, utilizing AI-powered traffic control and predictive maintenance systems to improve punctuality and safety [3]. Similarly, South Korea has leveraged 5G infrastructure to develop smart highways and autonomous bus routes, thereby optimizing traffic flow and reducing environmental impact [4].

Moreover, digitalization has opened up new opportunities for platform-based business models in transport services, as seen in the rise of ride-sharing platforms like Uber, Didi, and Bolt. These platforms not only represent a shift in consumer behavior but also demonstrate how real-time data, geolocation, and mobile technology are reshaping traditional transport paradigms [5]. In addition, digital freight and logistics platforms in countries such as the United States and China have improved the coordination of cargo transport, minimized empty hauls, and enhanced supply chain visibility [6].

Despite these advances, the transition to digital transport services also poses several challenges. These include data privacy and cybersecurity concerns, the digital divide between urban and rural regions, the need for upskilling the workforce, and the complexity of harmonizing regulatory frameworks across jurisdictions [7]. Nonetheless, the benefits of embracing digital technologies in transportation remain substantial, particularly in terms of economic competitiveness, environmental sustainability, and improved public service delivery.

For emerging and developing economies, the analysis of foreign experience in transport digitalization offers valuable lessons. It provides a foundation for developing national strategies that align with global

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technological trends while addressing local infrastructure, governance, and economic contexts. The successful experiences of other countries can serve as benchmarks for formulating policies, attracting investment, and fostering innovation in the transport sector.

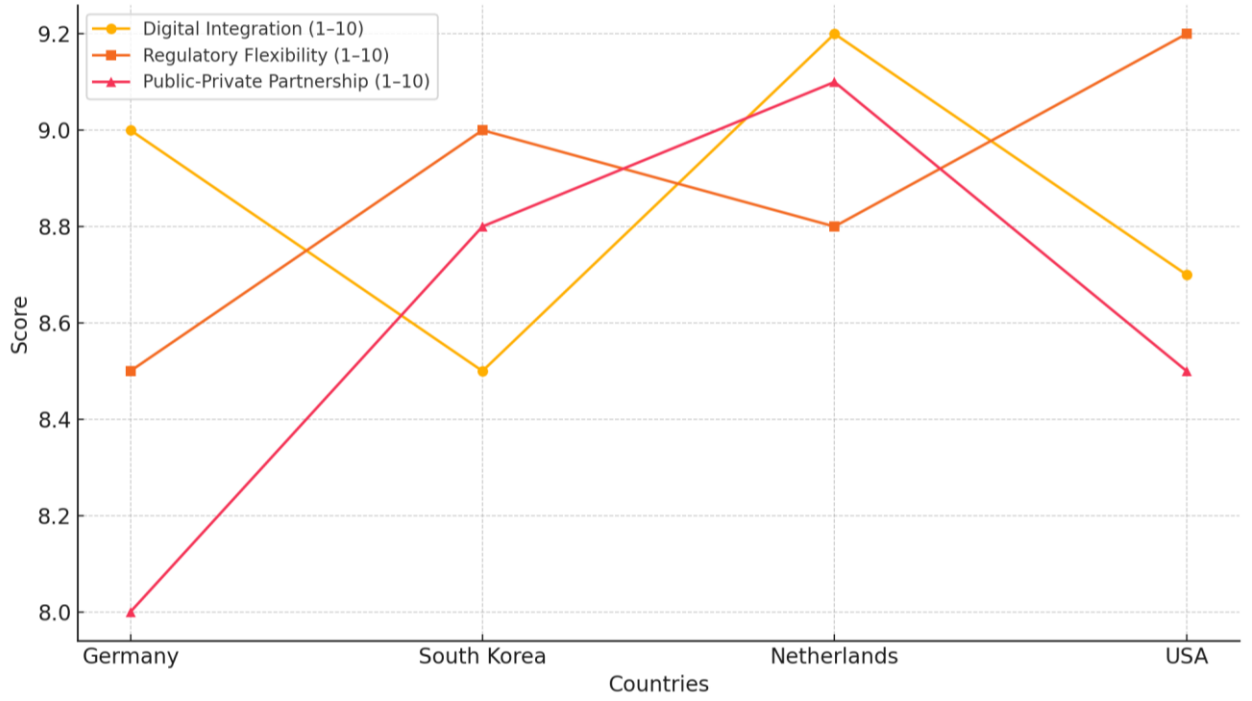

Figure 1. Comparison Of Key Components Of Digital Transport Strategies

This article aims to investigate and synthesize international best practices in the digitalization of transport services, focusing on how different nations have approached the modernization of infrastructure, service delivery, and regulation. Through comparative analysis, the study offers strategic insights for policymakers, urban planners, and business leaders seeking to drive digital transformation in their own transport ecosystems.

METHODOLOGY

This study employs a qualitative comparative analysis (QCA) to explore and synthesize the foreign experiences in the digital transformation of transport services. The methodology is structured around three primary stages:

Literature Review and Document Analysis: A comprehensive review of academic literature, government reports, and international organization publications was conducted. The sources included policy frameworks, digital transport strategy documents, and case studies from selected countries with advanced digital transport systems, namely Germany, South Korea, the Netherlands, and the United States. Databases such as Scopus, OECD iLibrary, and World Bank Open Knowledge Repository were utilized.

Case Selection Criteria: Countries were selected based on their level of digital infrastructure development, implementation of intelligent transport systems, and availability of public data. The diversity in geographic regions and policy models allowed for a well-rounded comparative perspective.

Analytical Framework: The framework focused on five key dimensions: (i) level of digital integration in transport services, (ii) regulatory and institutional frameworks, (iii) public-private partnerships (PPP), (iv) user-centric innovation (e.g., mobile apps, e-ticketing), and (v) economic and environmental outcomes.

The data were coded thematically, and cross-case patterns were identified to draw insights applicable to other national contexts, particularly those in the early stages of transport digitalization.

RESULTS

The analysis yielded several notable findings:

Advanced Integration of ITS Technologies: All selected countries demonstrated high levels of integration of intelligent transport systems (ITS), including real-time traffic monitoring, smart ticketing, and automated vehicle control systems. Germany's rail digitization program and the Netherlands' "Smart Mobility 2030" platform are exemplary in this regard [8].

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Regulatory Innovation: Flexible and adaptive regulatory environments proved crucial for fostering innovation. The U.S. Department of Transportation, for instance, created regulatory sandboxes allowing for experimentation with autonomous vehicles and drones [9].

Emphasis on Public-Private Collaboration: Public-private partnerships (PPPs) emerged as a central mechanism in financing and implementing digital transport solutions. South Korea's collaboration with SK Telecom and Hyundai to build 5G-enabled highways is one prominent example [10].

User-Centric Services and Open Data: Countries with successful transport digitalization strategies prioritized user experience through mobile apps, multimodal integration, and open access to transport data. This promoted innovation by third-party developers and startups.

Positive Economic and Environmental Impacts: Evidence suggested that digitalization led to a reduction in operational costs, enhanced traffic efficiency, and a measurable decrease in greenhouse gas emissions due to optimized transport logistics and reduced congestion [11].

DISCUSSION

The results reveal several commonalities and strategic principles that underpin successful digital transport transformations:

Institutional Readiness Matters: Countries with clear national strategies and dedicated digital transport agencies made faster progress. Institutional coordination between ministries of transport, ICT, and the environment facilitated cohesive action.

Open Innovation Ecosystems Encourage Growth: Allowing access to real-time transport data created vibrant ecosystems of mobility startups and third-party app developers. The Netherlands' National Data Warehouse for Traffic Information is a key model that supports transparency and innovation [12].

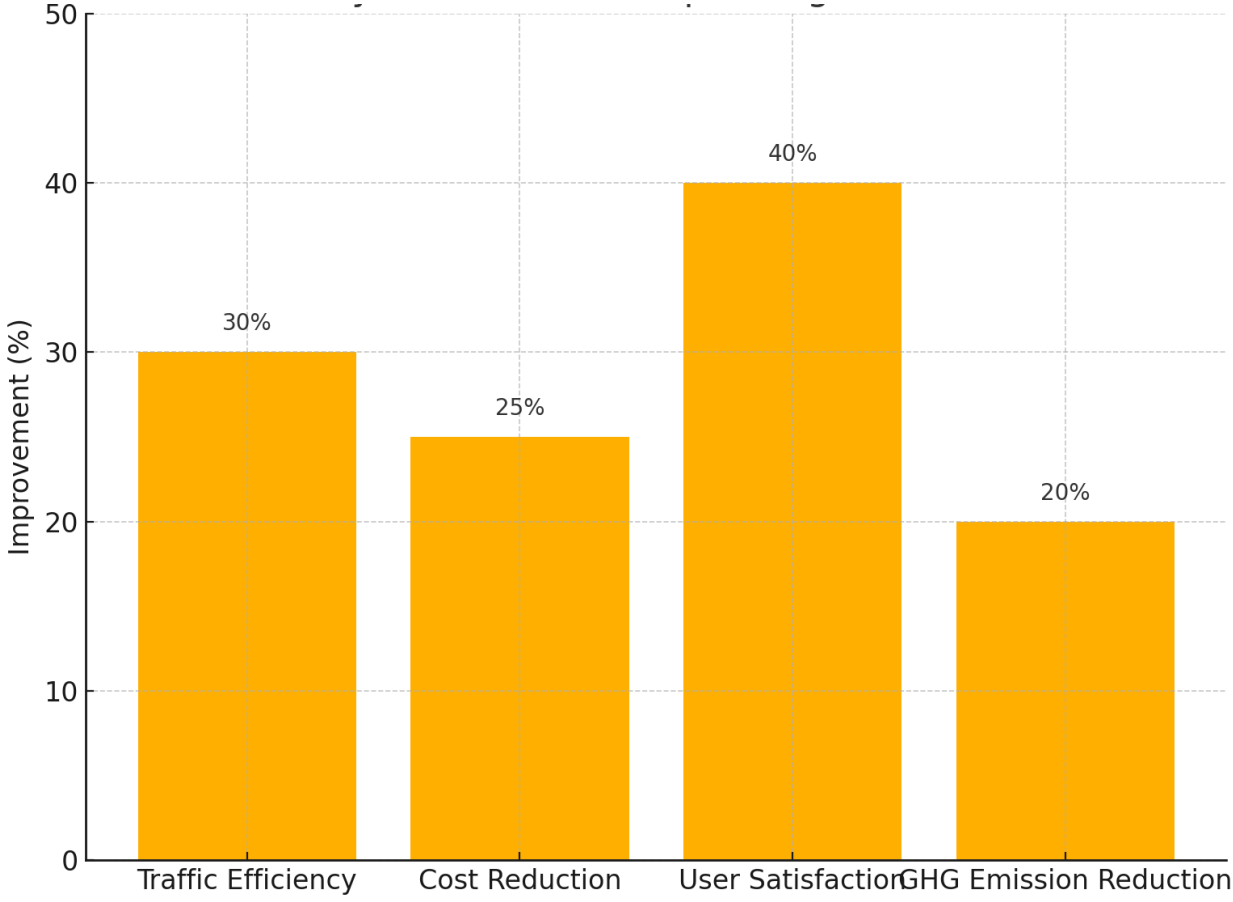

Figure 2. Key Benefits Of Transport Digitalization.

Digital Equity Must Be Addressed: While urban areas benefited significantly from digital transport systems, rural regions lagged behind. This digital divide poses a long-term challenge and needs to be addressed

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through targeted investment in infrastructure and training.

Security and Privacy Cannot Be Overlooked: As transport systems become increasingly digital and data-driven, concerns over data security, system vulnerabilities, and user privacy are intensifying. The European Union's General Data Protection Regulation (GDPR) offers a reference point for balancing innovation with user rights [13].

Policy Transferability is Context-Dependent: While the lessons from foreign experiences are valuable, policy adoption must consider local economic capacity, governance structures, and infrastructure readiness. For emerging economies, adopting a phased or modular approach—starting with digitizing core services—may yield better results than wholesale replication of foreign models.

In conclusion, the foreign experience in transport digitalization demonstrates the transformative potential of digital technologies. However, successful implementation requires more than technology—it demands coordinated policy, inclusive planning, and sustained investment in both infrastructure and human capital.

CONCLUSION

The digitalization of transport services has become a cornerstone of modern economic development, redefining how mobility systems are planned, managed, and experienced globally. The foreign experiences examined in this article demonstrate that successful digital transformation in the transport sector is closely tied to strategic governance, technological innovation, regulatory adaptability, and user-centered design.

Countries like Germany, South Korea, the Netherlands, and the United States have leveraged intelligent transport systems, open data platforms, and collaborative public-private partnerships to build resilient, efficient, and inclusive transport services. These cases underscore the importance of institutional readiness and the value of regulatory sandboxes in fostering experimentation and innovation.

However, the transition is not without challenges. Addressing the digital divide, safeguarding cybersecurity, and ensuring privacy protection remain critical concerns that must be balanced against the drive for innovation. Furthermore, while international models offer valuable blueprints, policy transferability must be tailored to the unique socio-economic and infrastructural realities of each country.

For developing and transition economies, foreign experience offers both inspiration and caution. A successful path forward requires not only importing digital tools but also building capacity, engaging local stakeholders, and crafting adaptable national strategies. Ultimately, digitalization in transport is not merely a technological upgrade—it is a holistic transformation that demands coordinated action across sectors to achieve sustainable and inclusive mobility.

REFERENCES

1. World Bank. (2020). Transforming Transportation in the Digital Age. Washington, DC.
2. OECD. (2019). Digital Transformation in Transport: Policy and Practice. Paris: OECD Publishing.
3. Deutsche Bahn AG. (2021). Digital Rail for Germany: Innovation for the Future. Berlin.
4. Ministry of Land, Infrastructure and Transport of South Korea. (2022). Smart Mobility Strategy 2030. Seoul.
5. Shaheen, S., & Cohen, A. (2020). Mobility-as-a-Service and the Rise of Smart Platforms. Transportation Research Board.
6. McKinsey & Company. (2021). Digital Freight and Logistics in a Post-COVID World.
7. European Commission. (2021). Cybersecurity and Data Protection in Smart Transport Systems. Brussels.
8. Dutch Ministry of Infrastructure and Water Management. (2021). Smart Mobility 2030. The Hague.
9. U.S. Department of Transportation. (2020). AV TEST Initiative and Policy Sandbox Overview. Washington, D.C.
10. South Korean Ministry of Science and ICT. (2021). 5G in Mobility: National Strategy Report. Seoul.
11. International Transport Forum. (2022). Transport Innovations for Sustainability. Paris: OECD.
12. Netherlands NDW. (2023). National Data Warehouse for Traffic Information Annual Report.
13. European Commission. (2020). Data Protection and Privacy in Mobility-as-a-Service. Brussels.