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GEORGIA'S STRATEGIC ROLE IN EURASIAN TRANSPORT AND DIGITAL LOGISTICS TRANSFORMATION

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ABSTRACT

Georgia is an important element of the Middle Corridor, a trans-Caspian international transportation corridor that connects China and Europe via Central Asia and the South Caucasus. Its strategic location at the intersection of Europe and Asia makes it an important player in international transportation and logistics. As Georgia's logistics industry looks to further integrate into global supply chains, this strategic stance offers both enormous opportunity and difficult problems. By examining the institutional frameworks, policy efforts, and infrastructure that influence Georgia's performance in regional and global contexts, this paper investigates the country's present position in international transport logistics. The TRACECA (Transport Corridor Europe-Caucasus-Asia), the Baku-Tbilisi-Kars railway, and Georgia's Black Sea ports, notably Poti, Batumi, and Anaklia (proposed), are among the main logistical routes that travel through the country and are examined in this article. Georgia is positioned as a natural transit nation for cargo movements between the North and South as well as between the East and West thanks to these facilities. Georgia's full potential as a logistics center is, however, hampered by a number of issues. These include reliance on external political and economic variables, such Russian influence and regional wars, regulatory inefficiencies, limited cargo handling capacity, poor infrastructure in some areas, and geopolitical instability in the South Caucasus. Furthermore, Georgia is under further pressure to become more competitive due to competition from other routes, such as those via Russia, Iran, and sea channels. However, Georgia has benefited from new opportunities brought forth by the changing global logistics scene, which has been altered by the COVID-19 epidemic and the conflict between Russia and Ukraine. The Middle Corridor and Georgia's role within it have garnered fresh attention due to changing trade patterns and the growing interest of European and Asian entities in diversifying supply chains. Georgia can greatly improve its connectivity and logistical performance by investing in digitization, modernizing customs, and forming public-private infrastructure partnerships. A series of strategic growth directions for Georgia's logistics industry are suggested in the paper's conclusion. These con-

sist of: (1) enhancing the integration of multimodal transportation; (2) investing in rail and port infrastructure; (3) enhancing cross-border logistics collaboration with neighboring nations; (4) bringing regulatory practices into compliance with EU standards; and (5) advancing Georgia as a hub for logistics and transportation through policies and international partnerships. Georgia can strengthen its position as a key hub in Eurasian logistics and a trustworthy transit partner in the global economy by implementing concerted policy initiatives and making focused investments.

Keywords: *Transport and Logistics Economy, Digital Economy in Supply Chains, Georgia's Transit Function in Regional Trade, Infrastructure Investment and Economic Growth, Global Value Chains and Competitiveness.*

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და გლობალურ დონეზე. ნაშრომი მიმოიხილავს საქართველოს ტერიტორიაზე გამავალ ძირითად სატრანსპორტო დერეფნებს, როგორიცაა TRACECA (ტრანსპორტის დერეფანი: ევროპა-კავკასია-აზია), ბაქო-თბილისი-ყარსის რკინიგზა, და შავი ზღვის პორტები – ფოთი, ბათუმი და დაგეგმილი ანაკლიის პორტი. ეს ინფრასტრუქტურა საქართველოს ბუნებრივ სატრანზიტო ქვეყნად აყალიბებს აღმოსავლეთსა და დასავლეთს, ასევე ჩრდილოეთსა და სამხრეთს შორის საქონლის ნაკადებისთვის. თუმცა, საქართველოს ჯერ კიდევ მრავალი გამოწვევა აქვს დასაძლევი, რათა სრულად გამოიყენოს ლოჯისტიკური ჰაბის პოტენციალი. ამ გამოწვევებს შორისაა ინფრასტრუქტურის არასაკმარისი განვითარება ზოგიერთ რეგიონში, სამხრეთ კავკასიაში არსებული გეოპოლიტიკური არასტაბილურობა, რეგულაციური დაბრკოლებები, ლიმიტირებული ტვირთბრუნვის შესაძლებლობები და გარე პოლიტიკური და ეკონომიკური ფაქტორებისადმი დამოკიდებულება, როგორიცაა რუსეთის გავლენა და რეგიონული კონფლიქტები. ამას ემატება კონკურენცია ალტერნატიული მარშრუტების მხრიდან — მათ შორის რუსეთის, ირანისა და საზღვაო არხების გავლით. მეორეს მხრივ, გლობალური ლოჯისტიკური გარემოს ტრანსფორმაცია — რომელსაც ხელი შეუწყო COVID-19-ის პანდემიამ და რუსეთ-უკრაინის ომმა — ახალ შესაძლებლობებს ქმნის საქართველოსთვის. ვაჭრობის მარშრუტების გადანაწილებამ და ევროპისა და აზიის მხრიდან მომარაგების ჯაჭვების დივერსიფიკაციის მზარდმა ინტერესმა ხელახლა მიაპყრო ყურადღება ცენტრალურ დერეფანსა და საქართველოს როლს მის ფარგლებში. ციფრული ზაციაში, საბაჟო სისტემების მოდერნიზაციასა და საჯარო-კერძო პარტნიორობებში განხორციელებულმა ინვესტიციებმა შესაძლოა მნიშვნელოვნად გააუმჯობესოს საქართველოს კავშირიანობა და ლოჯისტიკური ეფექტიანობა. ნაშრომი რეკომენდაციების სახით ასკვნის, რომ საქართველოს ლოჯისტიკური სექტორი სტრატეგიულად უნდა განვითარდეს ისეთი მიმართულებებით, როგორიცაა: მრავალმოდალური ტრანსპორტის ინტეგრაციის გაძლიერება; პორტებისა და რკინიგზის ინფრასტრუქტურაში ინვესტირება; მეზობელ ქვეყნებთან საზღვრისპირა ლოჯისტიკურ თანამშრომლობის გაუმჯობესება; რეგულაციების ევროპულ სტანდარტებთან თანხვედრაში მოყვანა; საქართველოს ლოჯისტიკური ჰაბის როლით პოპულარიზაცია საერთაშორისო პარტნიორობებისა და პოლიტიკური დიპლომატიის გზით. კოორდინირებული პოლიტიკის გატარებითა და მიზნობრივი ინვესტიციებით, საქართველომ შეიძლება დაიკავოს მნიშვნელოვანი ადგილი ევრაზიულ ლოჯისტიკაში და ჩამოყალიბდეს სანდო სატრანზიტო პარტნიორად გლობალურ ეკონომიკაში.

საკვანძო სიტყვები: *ტრანსპორტისა და ლოჯისტიკის ეკონომიკა, ციფრული ეკონომიკა მიწოდების ჯაჭვებში, საქართველოს სატრანზიტო ფუნქცია რეგიონულ ვაჭრობაში, ინფრასტრუქტურული ინვესტიციები და ეკონომიკური ზრდა, გლობალური ღირებულებათა ჯაჭვები და კონკურენტუნარიანობა.*

1. INTRODUCTION

In modern, globalized conditions, transport remains one of the main mechanisms for bringing countries closer together. Despite the fact that today the Internet has made it possible to communicate quickly and efficiently with people in different parts of the world, the function of transport still remains indispensable and important. Logistics also requires special attention - especially when it comes to not only domestic, but also international markets. At the global level, an effective supply chain and its management are becoming paramount, which requires the existence of a well-developed logistics system.

Growing competition in the international transport and logistics services market requires new strategic approaches to the development of the transport and logistics sector, the introduction of innovative technologies, a review of partnership relations and a systematic improvement in the quality of services (Zenezini, 2022; Veshapidze et al., 2024a). Against the background of these trends, the demand for transport and logistics services is growing dynamically.

One of the essential challenges in implementing logistics processes remains the issue of security of confidential information for the customer. Accordingly, the success of an outsourcing-based model significantly depends on the establishment of long-term trust and reliable relationships with partners. In many cases, outsourcing of all logistics functions is advisable in cases where the use of individual services - for example, a warehouse - is not necessary for the customer. Small and medium-sized enterprises, which, for financial or strategic reasons, do not have the resources to develop their own logistics systems, are particularly interested in this service (Zoidze and Tkhilaishvili, 2021).

The scientific literature discusses in detail: the

importance of transport and logistics outsourcing in global value chains and service integration; research on GVC structures and their impact on transport and logistics networks. The role of logistics service providers and the importance of service quality. (Gereffi and Fernandez-Stark, 2016). Logistics outsourcing practices and the relationship between service integration quality. (Knemeyer and Murphy, 2004); the structure of the long-term production chain and its important connection with logistics networks. (U.S. Department of Agriculture [USDA], 2020).

With the growth of globalization, international transport and logistics networks play an increasingly important role in the process of economic integration between countries (Bendianashvili, 2023). In this context, Georgia, as a critical part of the Eurasian transport corridor, plays an important role. Its geographical location provides a strategic position for trade between Europe and Asia, which gives it special opportunities in terms of developing into a transport hub (Asian Development Bank [ADB], 2021).

In the last decade, Georgia has implemented significant infrastructure projects, such as the Baku-Tbilisi-Kars railway, the Anaklia port project, as well as the strengthening of transit corridors – the Middle Corridor and TRACECA (World Bank, 2020; Caspian News, 2024; Papava, 2017). These projects aim to modernize the country's transport and logistics infrastructure, leading to greater integration of the country into international supply chains (Christopher, 2016; UNESCAP, 2022).

However, despite the progress, Georgia still faces certain challenges. Infrastructural barriers, inefficient regulatory systems, and lack of coordination at the regional level are noted (OECD, 2021). Against this background, the literature highlights the need for Georgia to strengthen its institutional framework, develop intermodal transport capabilities, and further integrate into the European transport area (Goguadze, 2023).

According to studies, Georgia's economic benefits from transport and logistics integration are not only reflected in direct economic indicators, but also in the form of geopolitical stability and strengthening regional cooperation (Papava, 2019; Lordkipanidze, 2020).

2. METHODOLOGY

This study employs a mixed-methods approach combining qualitative analysis of current trends and quantitative examination of global logistics market indicators to assess the impact of digital transformation on international transport and logistics systems.

The research begins with an in-depth review of existing academic publications, industry reports, and international standards (e.g., WTO GATS framework) to build a conceptual model of digital transformation processes in the logistics sector. Key sources include scientific journals, professional studies (e.g., mdpi.com, techtarget.com), and market analytics (e.g., rss.globenewswire.com, globalmarketmonitor.com).

The quantitative data for this study were obtained from publicly available global market reports, databases, and statistical portals. The focus was on metrics such as:

- Global logistics and transport service market size (2015–2030),
- Volume of freight transported,
- Regional market shares (Asia-Pacific, North America, Europe),
- Adoption levels of technologies such as RFID, IoT, AI, cloud computing, and smart contracts.

Secondary data sources include international trade and transport statistics, reports from logistics associations, and publications on the economic effects of digital technologies.

The study applies comparative analysis techniques to assess the integration of digital technologies across different regions (e.g., Asia-Pacific vs. Europe) and transport sectors (e.g., maritime, rail, air). The analysis highlights how technological adoption correlates with competitiveness, efficiency, and market growth.

3. RESULTS AND DISCUSSIONS.

3.1. Digital Transformation and Strategic Development in Global Transport and Logistics

Modern global trends in international transport logistics significantly determine the strategic directions of the sector development, the prospect and the formation of its transport-logistics potential. One of the defining factors is the digital transformation in this context, which has become a central component of the evolution of logistics systems (Enterprise IT World, 2025). Integration of information and communication technologies, server architecture, and digital communication means made it possible for a continuous and regular information exchange between the participants of the transport process, which takes place within all major logistics types (ScienceDirect, 2024; Veshapidze et al., 2022).

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The introduction of electronic document exchange systems (EDI – Electronic Data Interchange) is one of the important aspects of this process. It makes it possible to store and exchange documents related to transportation in an automated mode. The main advantages of using this technology are: simplification of business processes, provision of preliminary documentation, reduction of documentary costs, operational transfer of information and increase of information transparency in the process of cargo transportation.

An important direction of digitalization is the development of electronic declaration systems and in parallel - the large -scale introduction of cloud technologies (cloud computing). These types of solutions are an important step forward in improving international logistics speed and efficiency (Gayialis et al., 2022). In particular, the integration of cloud services by customs agencies, in practice, has already led to the simplification of the declaration processes and timely performance (Zoidze and Veshapidze, 2022a).

Another current concept of digital logistics is "Data as a Service" (DAAS), which makes it possible to obtain, process and analyze data remotely, which ensures management based on intelligent decisions. No less important is the use of radio frequency identification systems (RFID), which make it possible to accurately identify cargo, packaging and transport units at any stage of the supply chain. Such technological integration increases the transparency of processes and the quality of control, which is a necessary condition for optimizing business operations.

Of particular interest is the development of Digital Logistics Centers (CLC), which are key elements for the efficient servicing of international transport corridors. Their purpose is to provide a logistics infrastructure based on modern technologies, which significantly increases the throughput and responsiveness of global supply systems (Mentzer et al., 2001).

Digital Logistics Centers (CLCs) offer modern logistics companies a variety of opportunities to optimize operations and increase competitiveness (Veshapidze et at., 2021). The integration of these centers allows companies to improve various areas, such as:

• Electronic Data Interchange (EDI): CLC systems provide automated exchange of documentation, which speeds up the process of delivering goods and reduces the likelihood of human errors.

• Supply Chain Planning: Integrated systems allow companies to effectively plan inventory and transportation, which ultimately reduces logistics costs.

• Flexibility and Inventory Management: CLCs help manufacturers reduce inventory and produce to order, which increases the flexibility and efficiency of enterprises.

• Multimodal transport planning: Special software allows you to choose the best routes and types of transportation, which reduces transportation costs.

• Response to road conditions: Rapid computerized response to road conditions and queues at borders will help increase throughput. With increasing traffic volumes, congestion and long queues at borders, CLC systems provide real-time information about road conditions, which increases throughput and reduces delays.

• Driverless vehicles: Companies such as Aurora and Volvo are developing autonomous trucks equipped with sensors and cameras, which increases safety and efficiency in the transportation process.

The implementation of CLC systems in these areas helps optimize logistics companies' operations, reduce costs, and increase competitiveness in the global market (Abuselidze, 2021).

Digital logistics is a key enabler of the economic efficiency of modern logistics systems. The integration of digital technologies such as RFID, IoT, artificial intelligence (AI), cloud computing, and smart contracts allows companies to optimize logistics processes, reduce costs, and increase efficiency (Albrecht et al., 2024; Zoidze et al., 2023). For example, the use of RFID technology allows companies to track the location and condition of goods in real time, reducing the risk of loss and damage. Studies have shown that the implementation of RFID systems significantly reduces operating costs and improves inventory management (TechTarget, 2025; Pavliashvili and Tokmazishvili, 2024a).

IoT and AI technologies, in turn, provide data analysis and forecasting, which allows companies to optimally plan transportation, reduce fuel costs and increase delivery speed. Cloud computing and smart contracts provide data security and transparency, which simplifies customs procedures and improves the management of transportation processes (Abuselidze and Meladze, 2024). The integration of these technologies creates a digital logistics ecosystem that ensures efficiency, transparency, and sustainability in logistics processes (Otinashvili et al., 2023; Zoidze, 2024).

The development of digital logistics and transport

in an organization allows you to optimize the transportation process, which will significantly reduce the costs of its planning and provision. The classification of the economic effects of digital transformation in this process includes the following areas:

• Technological effect: Digital transformation increases the level of advancement of applied technologies, which contributes to the automation and optimization of logistics processes. For example, the use of RFID technology allows companies to monitor the location and condition of goods in real time, which reduces the risks of loss and damage.

• Competitiveness growth effect: Digital transformation improves competitive opportunities and increases the market share of a logistics company. Studies have shown that digital transformation has a positive effect on the competitiveness of the supply chain, which helps companies maintain and improve their position in the market.

• Commercial effect: As a result of digital transformation, the volume of transport increases, new IT services appear, productivity increases and costs decrease. This, in turn, increases income from additional transport and the provision of IT services.

• Socio-economic effect: Digital transformation leads to an improvement in the organizational structure of the company, an increase in the quality of service, an increase in productivity and improved working conditions. In this process, the volume of paper documents and information decreases, which contributes to improving the quality of information processing, transmission and storage (MDPI, 2023; Bedianashvili, 2014; Pavliashvili and Tokmazishvili, 2024b).

Thus, digital transformation is an important factor in increasing the efficiency and competitiveness of an organization, which has a positive impact on both economic and social aspects.

In the context of modern global value chains (GVC), the process of delivering cargo is no longer limited to linear transportation from origin to destination (Zoidze and Veshapidze, 2022b). It includes a variety of related operations, such as loading and unloading, storage, consolidation, customs and insurance consulting, tracking systems, optimization of management solutions, etc.

The effective implementation and integration of these processes ensures the smooth functioning of the supply chain and contributes to the development of international trade relations.

3.2. Georgia's role in the context of the Silk Road

The Silk Road involves modern logistics and transport links that will bring Asia closer to Europe through rail, land and sea routes. Georgia's geographical location distinguishes it as a strategic hub for transit cargo transportation, especially between the Pacific and European markets.

One of the key development trends in the international market for transport and logistics services is the growing demand for transport and logistics outsourcing, which helps to ensure the efficient movement of global goods. This practice is implemented through logistics service providers, who are intermediaries in transport and logistics operations. Providers differ in the level of service integration - the more complete the integration, the higher the quality and coordination of services.

The need for integrated logistics services depends significantly on the length of the Global Value Chain (GVC), which implies more complex network solutions within long-range operations. At the sectoral level, these services are particularly in demand in high-tech sectors, including electronics, information and communication technologies, the automotive industry and the food industry (Lordkipanidze, 2022; Pavliashvili and Tokmazishvili, 2024c). For example, in the US, the meat production sector has the longest global chain structure, covering all stages of food production up to the distribution of the finished product to retail chains.

Types of logistics providers fall into the following categories:

• First-party logistics provider (1PL): This type of provider operates in a specific local area and provides a limited range of transportation and logistics services, often only transportation using its own vehicles.

• Second-party logistics provider (2PL): This type of provider, often referred to as a freight forwarder, transports goods, usually with its own vehicles, but on an international scale, and provides a wider range of services, including transportation, warehousing, and various operations related to cargo handling.

• Third-party logistics provider (3PL): This type of provider, often called a transport operator, provides both its own part of the transport and coordinates the activities of the contractors involved, and provides an integrated range of transport and logistics services, including transportation, warehousing, freight forwarding operations, customs consulting, insurance and elements of management logistics using information

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technology, as well as cargo tracking systems, on a "single window" basis (Grefen et al., 2018).

• Fourth-tier transport and logistics service provider (4PL): This type of provider, in addition to 3PL functionality, provides more systematic management solutions, i.e. optimization of the delivery process, according to cost, safety, service criteria, and also stability. In practice, the difference between 3PL and 4PL is not always noticeable due to the rapid growth of the information technology industry. At the same time, unlike its predecessor, the 4PL provider no longer has its own vehicles and warehouses and also works with the widest possible integration of e-business solutions throughout the supply chain (Fortune Business Insights, 2025).

Within these types, logistics providers differ in the degree of service integration and level of responsibility, allowing companies to choose the most suitable provider for them based on their business needs.

The global transport and logistics services market is undergoing significant changes, which are reflected in the growth of various segments and regional dynamics. For this purpose, it is important to present a SWOT analysis — Georgia's role in international transport logistics, as follows (Table 1):

The global third-party logistics (3PL) market was valued at approximately $1.08 trillion in 2023 and is projected to reach $2.18 trillion by 2030, representing a CAGR of 9.25%. (fortunebusinessinsights.com).

The fourth-party logistics (4PL) market is also growing, although its share of the overall market is relatively small. The global market structure is dominated by 1PL and 2PL segments, which account for approximately 58% of the market volume. The share of third-party logistics services (3PL) is approximately 25%, and the share of fourth-party (4PL) is approximately 17%.

Regionally, the Asia-Pacific region occupies the largest share in the market structure - 38%, followed by North America - 25% and Europe - 22%. The CIS countries' share in the market is less than 3%. By major

Table 1. Georgia's role in international transport logistics, SWOT analysis

Strengths:	**Weaknesses**
• Strategic geographical location: Georgia is located between Europe and Asia, which gives it the status of an important transit country. • Multifaceted transport network: The country is involved in transport corridors such as TRACECA, the Middle Corridor, and the South Caucasus Railway. • Diverse port infrastructure: The operating ports of Poti and Batumi and the prospect of an Anaklia deep-water port increase the maritime logistics potential. • Political aspiration towards integration with the European Union and NATO: Promotes the introduction of international standards.	• Insufficient infrastructure development: Many rail and road routes are outdated. • Low quality of logistics services: Low integration with international digital systems and limited intermodal services. • Administrative barriers: Complexity of customs procedures and inadequate coordination between agencies. • Dependence on several neighboring countries: Especially on the transit infrastructure of Azerbaijan and Turkey.
Opportunities:	**Threats**:
• Strengthening intermodal logistics: introduction of modern shipping systems (e.g., on-board digital documentation, e-TIR). • Deep cooperation with international partners: integration with the European Union, China (Belt and Road Initiative) and Central Asia. • Development of Anaklia Port: Deepwater infrastructure will facilitate integration into global container networks. • Green transport strategies: introduction of ecological standards taking into account European trends.	• Geopolitical instability in the region: tense relations with Russia and conflict situations between Armenia and Azerbaijan. • International competition: rapid development of logistics systems of countries with similar functions (Turkey, Azerbaijan, Kazakhstan). • Global economic volatility: may disrupt the dynamics of international cargo turnover. • Climatic and ecological challenges: the issue of infrastructure sustainability in the face of global warming.

***Source**: Compiled by the authors.*

countries, the US leads with a market share of 21%, followed by China with 20%, Japan with 6%, Germany with 4%, and the UK with 3% (Lordkipanidze, 2025).

Current trends show that the importance of the 3PL sector in the global transport and logistics services market structure is growing. For example, in 2015, the global market volume of 3PL level transport and logistics services was $721 billion, and in 2016 it increased to $802 billion.

Regionally, the Asia-Pacific region (38%), North America (25%), and Europe (22%) account for the largest share in the market structure, while the CIS countries account for less than 3% of the market. The top ten global 3PL logistics providers mainly include companies from developed countries, such as DHL Supply Chain & Global Forwarding (Germany), Kuehne+Nagel (Switzerland), Nippon Express (Japan), C.H. Robinson (USA), DB Schenker (Germany), UPS Supply Chain Solutions (USA), etc. The only company from developing countries in the top ten is China's Sinotrans.

Significant changes occurred in the market structure when DSV, which was originally a small company, acquired Schenker and became the world's largest logistics company, although the market share is still small, as the global market is highly fragmented (Reuters, 2024).

The transport sector in Georgia is an important part of the country's economy. According to 2023 data, the share of the transport and storage sector in the gross domestic product is 6.5%. At the same time, the real growth of the sector in 2023 was 7.5%. Although the sector's share in the gross domestic product has decreased, its importance in the economy is still high. In addition, in 2023, the number of employees in the sector decreased by 8.5%, although the average salary increased by 25.5%, which is 2,130 GEL (Kvanchilashvili, 2023).

Georgia's strategic location, in particular along the Middle Corridor, contributes to the development of the country's transport and logistics capabilities. According to a report by the World Bank and the International Finance Corporation, the development of transport and logistics infrastructure plays an important role in the country's economic growth (Zoidze, 2023).

Based on these data, the transport sector plays an important role in the Georgian economy, however, its structural and infrastructural development is needed in order to maximize the use of the country's strategic location.

Recently, as a result of projects implemented within the framework of TRACECA, the efficiency and safety of railway traffic have increased, which has had a positive impact on the growth of rail traffic along the Caucasus Corridor (Ismailov and Papava, 2009). Based on these sources, Georgian Railways is an important component of the Eurasian Transport Corridor, which contributes to the economic development of the region and its integration into global trade networks (Silagadze, 2013).

Georgian Railways plays an important role in the country's economy, especially in freight transportation. In 2023, railway revenue increased by 3.1%, although freight turnover decreased by 8.3%, which is mainly a result of the high base in 2022 (Veshapidze and Karchava, 2022). Georgian Railways, which is fully state-owned, had the capacity to transport up to 27 million tons of cargo in 2023. Despite the fact that the railway infrastructure is located in mountainous terrain, its electrification is 94%.

The Baku-Tbilisi-Kars railway project, which connects Georgia, Turkey and Azerbaijan, was opened in 2017. In May 2024, the modernization of this project was completed, which increased the annual cargo turnover from 1 million to 5 million tons. In the future, the project aims to increase the annual cargo turnover to 17 million tons.

Based on these data, Georgian Railways plays an important role in the country's transport system, especially in freight transportation. Poti, Georgia's largest seaport, plays a central role in the country's transport system as an important connecting link of TRACECA. The Port of Poti handles 85% of liquid and dry cargo, container shipments, passenger ferries and transit containers in Georgia.

In 2024, the Port of Poti handled 545,297 containers (TEU), which is 7.6% lower than the previous year's figure (592,589 TEU). May was the busiest month, when 53,129 containers were handled. During the same period, the port received 158 container ships and handled 272,178 containers. Car transportation is also an important indicator: in 2024, the Port of Poti handled 74,173 cars, which is a slight decrease compared to the previous year.

The Port of Poti also plays an important role in the export of Central Asian wheat. In 2013, a grain processing terminal was opened, which has the capacity to process 500,000 tons of cargo per year. This terminal provides an alternative route for Central Asian wheat exports to the Black Sea and Mediterranean regions.

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The Port of Poti, with its infrastructure and functionality, makes a significant contribution to the transport and logistics system of Georgia, both nationally and regionally. Batumi Seaport is one of the most important transport facilities in Georgia, which was one of the leaders in cargo turnover in the Black Sea basin at the beginning of the 20th century. Today, Batumi Port is the main seaport of Georgia, providing transportation of both oil and dry cargo.

The cargo turnover of the Port of Batumi reached 7.6 million tons in 2022, which is 1.3 million tons higher than in 2021. The transportation of petroleum products increased by 0.4 million tons, while the volume of dry cargo increased to 1.7 million tons. The transportation of containerized cargo amounted to 119,000 TEU, which is 20,000 TEU more than in 2021.

Batumi Oil Terminal, operated by KazTransOil JSC, provides transshipment of oil and oil products. The terminal's annual throughput capacity is 15 million tons. Oil is delivered to the Batumi terminal mainly by rail, where 7 oil loading railway overpasses operate, which allows for the loading of more than 770 tank cars per day. Batumi Sea Port is an important hub of Georgia's railway, maritime transport, and international transport corridors, contributing to the development of the country's transport and logistics infrastructure.

Construction of the Kulevi oil terminal began in 2000, when the Austrian company Argomar Oil Ltd and Georgian Railways established Terminal 2000 Ltd. Construction was soon halted in 2002, mainly due to financial problems and environmental concerns. In 2004, an international consortium was formed to revive the project. In 2007, the Azerbaijani state company SOCAR bought. On May 16, 2008, the Kulevi oil terminal was officially opened. SOCAR attracted a $305 million syndicated loan to complete the project, financed by 15 European banks. The terminal's annual throughput capacity is up to 10 million tons of oil products. The terminal is equipped with four railway lines, which simultaneously receive 168 tankers. The total volume of the terminal's reservoirs is 320,000 cubic meters, although there is a potential to increase it to 380,000 cubic meters.

Since 2012, the Kulevi terminal has also provided for the transshipment of chemical products. SOCAR has invested up to $400 million in Georgia, which contributes to the development of the country's energy infrastructure. The construction and development of the Kulevi terminal plays an important role in Georgia's energy security and regional energy transportation (Papava and Maisaia, 2023).

The construction of the Anaklia Deepwater Port was an important infrastructure project for Georgia, aiming to create a deepwater port in the eastern part of the Black Sea, which would enable the reception of Panamax and post-Panamax class ships. The project, whose implementation began in 2017, aimed to handle up to 100 million tons of cargo, which would significantly increase Georgia's transport potential.

However, the project was halted in 2020 when the Georgian government terminated the contract with the Anaklia Development Consortium, which included TBC Holding and other international partners (TBC Capital, 2024). The government's decision was based on the consortium's inability to raise additional capital of $120 million and a loan of $400 million, as well as the lack of pre-construction and financial guarantees (Civil Georgia, 2023).

The project's suspension was caused not only by financial and administrative problems, but also by geopolitical factors. Analysts believe that Russia may have influenced the Georgian government's decision to limit the attraction of American investments in strategic infrastructure. Despite these difficulties, in May 2024, the Georgian Ministry of Economy named the Chinese company China Communications Construction Company (CCCC) as a new partner for the port's development (Karchava and Veshapidze, 2023). This move has revived interest in the project, especially after the war in Ukraine, when international transport demand increased and Georgia's role in transport links with Central Asia and Europe significantly increased.

The Georgian government plans for the Anaklia port to begin receiving its first ships by 2029, with the first phase to be completed by 2028. The project will require significant investments and the involvement of international partners to transform the port into a regional transport hub.

Georgian road transport is an important component of the country's transport system. During the Soviet period, the emphasis was mainly on domestic transport, and after the collapse of the Soviet Union, Georgia became more oriented towards the international transport market (Papava, 2018). As a result of the opening of the border with Turkey in the early 2000s, the volume of cargo transported by road and the rate of goods turnover significantly increased (Silagadze, 2019).

According to 2023 data, the volume of cargo transported by road in Georgia amounted to 32.9 million tons. In the same year, road transport accounted for 59% of the country's total cargo. In addition, the total length of Georgia's roads is approximately 21,000 kilometers, including 1,600 kilometers of roads of international importance.

The growth of road transport is associated with several factors. Among them is the shift of major cargoes between the South and Russia to road transport, which is especially evident in wheat shipments through the Larsi checkpoint. Also, the reforms implemented by Azerbaijan in 2015, aimed at abolishing unofficial customs duties, contributed to the transfer of road flows from Turkey, Iran and Central Asia from Azerbaijan to Georgia.

In order to improve Georgia's road infrastructure, the World Bank (WB) and the Asian Development Bank (ADB) are actively participating in important projects aimed at modernizing the transport system and bringing it into line with international standards. Besides, the support of the World Bank, which has approved a loan of 75 million USD to Georgia for the improvement of the East-West Highway, is important. The project includes the construction of a section of the E60 highway from the Agara bypass to Zemo Osauri, improving road safety and improving accessibility. The project will contribute to reducing transport costs and improving road safety.

In 2017, the World Bank approved additional financing of €16.9 million for the rehabilitation of the Chumateleti-Khevi section, including the construction of 21 bridges and two new tunnels. The project also includes the implementation of an Intelligent Transport System (ITS) and road safety improvements. Ongoing projects contribute to bringing Georgia's transport infrastructure in line with European standards.

As for the support of the Asian Development Bank (ADB), the ADB has financed the construction of the Batumi-Kobuleti bypass road, the total cost of which is 315 million USD, of which 108 million EUR is allocated by the ADB. The project includes the construction of a new double-lane road connecting Batumi and Kobuleti, contributing to the improvement of traffic flow and the development of tourism. The new road will significantly reduce the travel time from Tbilisi to Batumi (Agenda.ge, 2023)

The issue of the Transcaucasian Corridor and road transport is also worth mentioning here. The Transcaucasian Corridor, also known as the Middle Corridor, is a trade route from Southeast Asia and China to Europe, passing through Azerbaijan, Georgia and Turkey. This corridor is an alternative to the Northern Corridor and ocean routes. In 2022, the cargo turnover of the Middle Corridor doubled and reached 1.5 million tons, while the cargo turnover of the Northern Corridor decreased by 34% (Karchava et al., 2025). However, the development of the corridor is hampered by the limited capacity of seaports and railway infrastructure, the lack of a unified tariff system and geopolitical factors.

3.3. Technological aspects in Georgian transport and logistics systems

The strategy of the Ministry of Economy of Georgia emphasizes the digitalization of the transport sector, which includes real-time cargo monitoring, automated transportation management, and electronic customs procedures. For example, the Digital Silk Way initiative envisages the integration of regional digital logistics networks, where Georgia's inclusion will enable faster and more transparent transit of cargo (Abashishvili and Liparteliani, 2021).

Georgia also needs to develop intermodal terminals — points where cargo is transferred from one mode of transport to another (e.g. from rail to truck). Without technological development (RFID, IoT, automated cargo management), competitiveness will decrease.

As part of the Association Agreement with Europe, Georgia is committed to improving environmental standards in logistics. Therefore, the technological challenge is to expand the electrified railway network and stimulate low-emission trucks (Veshapidze et al., 2024b). In parallel with digital cargo management, it is important to develop a cybersecurity infrastructure. The use of digital documentation (e.g., e-CMR) requires secure systems to ensure the privacy of transit information.

Road transport is the main direction in the Transcaucasian corridor, due to its high competition and operational simplicity. However, complex border crossing procedures with neighboring countries and poor infrastructure hinder the acceptance of a larger number of vehicles, which increases waiting times, costs and final transportation times. Despite these challenges, the Georgian government is actively working to improve road infrastructure in order to increase transport efficiency and competitiveness in the region.

Simplifying and improving the quality of Georgia's

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customs procedures is an important step towards increasing the efficiency of international transport corridors. However, the waiting regime at the border with neighboring countries remains a problem, which affects the efficiency of the Transcaucasian corridor.

To solve this problem, cooperation between the border control agencies of Azerbaijan and Georgia is necessary. It is important to establish new standards, especially the revision of the regulations for unregulated and heavy cargo, in order to ensure the smooth and operational exchange of information related to the transportation of goods. Including minimizing the queues of vehicles and waiting times in the customs inspection system.

In August 2022, the governments of Azerbaijan, Georgia, and Turkey signed an agreement to simplify customs procedures. The agreement provides for the electronic exchange of advance information, which will help simplify transport processes and reduce waiting times (Georgian Legislative Herald, 2022).

Also, in March 2023, at a trilateral meeting in Baku, the issue of creating unified customs and border crossing points was discussed. This initiative aims to simplify customs procedures and reduce waiting times at the border. Despite these steps, additional initiatives are needed, such as the introduction of "green corridors", which include electronic pre-declaration of road transport. This approach will save carriers from having to spend time on lengthy documentary monitoring and standing in line, and will carry out all customs or technical procedures electronically in advance.

According to the World Bank, simplifying customs procedures and improving information exchange are important steps towards increasing the efficiency of the Transcaucasian Corridor. In addition, it is necessary to introduce a unified tariff system and improve infrastructure to ensure the competitiveness of the corridor.

Thus, cooperation between Georgia and Azerbaijan in the direction of simplifying customs procedures plays an important role in the development of the Transcaucasian Corridor. Future success depends on the joint efforts of these countries and the introduction of international standards.

The development of Georgia's transport and logistics system is a determining factor for the country's economic stability and international competitiveness. Of particular importance is the country's strategic location, which makes it an important transit hub between Europe and Asia. In 2023, Georgia's transport and retail sector experienced a growth of 5.1%, which is 6.5% of the country's GDP (Geostat, 2024). This indicator indicates the important role of the sector in the economy, despite existing challenges, such as the disruption of trade relations with Russia (World Trade Organization, 2022).

According to a joint report by the World Bank and the International Finance Corporation (IFC), the development of transport and logistics infrastructure, digital transformation, and the growth of the renewable energy sector are the main drivers of growth in Georgia's economy. The report emphasizes that the development of these sectors will contribute to the country's achievement of high-income status and integration into international trade networks (Barbaqadze and Gegechkori, 2023; World Bank, 2023).

The Transport and Logistics Strategy for 2023-2030, approved by the Government of Georgia, aims to transform the country into a transport and logistics hub. The strategy includes measures to develop infrastructure, introduce digital technologies, and strengthen international transport corridors (Ministry of Economy and Sustainable Development of Georgia, 2023). According to the World Bank's Logistics Performance Index, Georgia has advanced 40 positions to 79th place, indicating an increase in the efficiency of the transport system and the simplification of international trade processes (Tkeshelashvili, 2023).

Given these data, it is clear that the development of Georgia's transport and logistics system is essential for the country's economic stability and international prosperity (Table 2). Improving infrastructure, introducing digital technologies, and strengthening international cooperation play an important role in this process.

Based on the above analysis, the following strategic directions should be identified:

1. Modernization of transport and logistics infrastructure (development of deep-water ports (Anaklia); modernization of international railway and road networks and digital integration with them).

2. Positioning Georgia as a digital logistics hub (investment in technologies: cargo tracking systems, AI-driven platforms, automation of customs processes; support for startups and technology businesses in the transport sector).

3. Multilateral economic integration and diversification (cooperation with the European Union and Asian countries by deepening deep trade and technological ties; expansion of new free trade agreements with countries in Africa and the Arab world).

Table 2. Policy Recommendations for the Development of Georgia's Transport and Logistics System

Direction	Recommendation
Infrastructure	Accelerate the implementation of strategic projects (Anaklia, BTK modernization) and involve the private sector in the PPP format
Regulations	Create a unified transport and logistics strategy that will have the force of law and a phased implementation plan
Education and Human Resources	Establish specialized centers in logistics, transport and data analytics - with the participation of the private sector
Customs and Administration	Modernize customs processes through digital ID, electronic document circulation and automated verification
International Partnership	Increase cooperation with international financial institutions (WB, EBRD, ADB) to attract logistics capital investments

***Source**: Compiled by the authors.*

4. Ecological and sustainable logistics policy (encouraging green transport (electric cars, railways); introducing carbon emissions standards in the logistics sector.

By implementing the presented recommendations and strategic directions, by 2030 Georgia can become:

o A Black Sea logistics hub connecting Europe, Central Asia and China;

o A model country for digitally managed logistics in the region – with integrated technological platforms and data intelligence;

o A reliable partner for international companies and corridors, ensuring fast, safe and environmentally sustainable cargo turnover.

Such a development scenario requires coordinated action by the state and private sectors, integrated policies and a stable economic environment.

4. CONCLUSIONS

Georgia has a strong strategic position that allows it to become a transport and logistics hub in the Eurasian space. However, infrastructural, legal and coordination challenges hinder the full realization of this potential. The state and the private sector must develop a unified strategy based on a long-term vision, strengthening cooperation with international partners and introducing modern technologies.

Georgia's geostrategic location and active involvement in international transport and logistics processes create a real opportunity for the country to become a central link in transcontinental connectivity. Against the backdrop of global trends – digital logistics, green transport, regional integration and multilateral economic cooperation – Georgia can establish its position in the long term as:

• A leading link in the transit corridor (TRACECA, Middle Corridor),

• A platform for the development of digital logistics in the region,

• A trade and economic bridge between the European Union and Asia.

However, to achieve this, infrastructural, legal, technological and institutional development is necessary, which must be ensured by appropriate policies.