



The Role of The International Multimodal Transport System in Stimulating the Supply Chain and Logistics and Achieving Economic Development

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Summary:

Transportation services of all kinds A Its land, sea, and air forms are the main artery of national economies due to their paramount importance in the smooth flow of goods and merchandise and the revitalization of international trade. Providing various goods and raw materials It also plays a crucial role in accelerating global growth and development in the field of supply and logistics, especially given the advancements in transportation systems. Technology integration In formation and contact In this field, what is known as the transport system emerged.

International Multimedia as an alternative strategic option This system operates by using at least two means of transport from the producing country to the consuming country, relying on information and communication technology under one contract and under the responsibility of the transport contractor. This facilitates and speeds up door-to-door supply operations with high efficiency, focusing on reducing costs, which contributes to offering products at competitive prices. This type of transport also contributes to increasing national income and thus achieving economic development.

Keywords: Supply, logistics, multimodal transport, Transportation.

Introduction:

Due to the rapid and continuous global changes and contemporary technological developments, traditional methods of transportation (air transport, sea transport, land transport) are no longer viable. It performs its functions efficiently Which is based on A With each type of transport becoming separate from the others, it has become necessary to develop more advanced, suitable, and modern transport systems that are compatible with the environment. A Workers and global trade, so that this system ensures the safety of transported goods and ease of access, especially those transported over long distances, which



would reduce transport time and labor. Intervening in it Thus, cost reductions were brought about by the multimodal transport system..

And The United Nations Conference on Trade and Development has (UNCTAD) rules and foundations of this system through the agreement United Nations International Multimodal Transport (UNMTRA) 1980, International multimodal transport helps-for me Trade flows from the supply center to the demand center in a continuous and uninterrupted flow, through the use of a continuous chain of links between modes of transport. Different The goal A My main goal for international multimodal transport is to transport goods to their final destination on time and in the right place. The item is specified, in good condition, and at the specified price. It also includes ongoing supervision and responsibility from a single entity. At all stages of transport, the operator is called a multimodal transport provider..

Building Based on the above, the following can be proposed The following problem:

What is meant by a transport system? International multimedia And what is its role in activating chains? The eoutrigger Logistics and achieving economic development?

To answer this problem And to be familiar with the various research aspects The following topics will be addressed:

First axis: The concept of international multimodal transport.

Second axis: The concept of eMedad and International Logistics.

Third axis: The relationship between international multimodal transport, supply, logistics, and economic development

Study hypotheses:

With the aim of answering the question posed and reaching Based on the research results, the following hypotheses were formulated:

- Transportation system International Multimedia is a transmission system He depends More than one means T transfer To achieve Supply of various goods;
- A The use of multiple modes of transport within a single contract has a different economic impact on transportation. A The mediator,
- International trade needs I need a new, more advanced and modern transportation system that will ensure the smooth flow of goods and services. Supply and logistics;
- Activating the multimodal transport system requires To provide a sophisticated and intelligent logistics base;
- International multimodal transport works to ensure the continuity and vitality of the supply and logistics chain..
- International multimodal transport plays a crucial role in achieving economic development.

Research objectives:

Our research aims to achieve a number of objectives, which are as follows:

- To provide a scientific contribution on the topic of multimodal transport and the various concepts associated with it;
- He drew attention to the role of this type of transport, particularly in reducing costs and generating returns for the national economy;



- Highlighting the role of the multimodal transport system within supply and logistics chains, and thus achieving economic development.

First axis: The concept of the international multimodal transport system

Multimodal transport has unique features that distinguish it from other transport systems; it is essentially a new legal system for transport, not a new, added transport system. I have previously known single-mode transport systems.

1. Definition of international multimodal transport:

Before addressing To define multimodal transport, it is necessary to first define transport in general, as it has been defined by...kepling "As civilization" Transport is civilization It is also considered the tool through which the market can be expanded and human and material resources previously used can be utilized towards increasing production and improving its quality, as it contributes to the movement of goods and labor. eFor the places where it is most useful¹.

The word "transfer" also means the process of changing the location of A Individuals A and various materials and goods A And the equipment over the distance separating two workplaces, whether within economic units A And outside of it, using various means that include all operations related to shipping and relocation. A And the discharge, as it should be noted For me, with regard to production facilities, the transportation process defines the content of the concept of moving materials and goods, both within them. A And outside of it ,If The attachment A It went through simple moving operations called—"Moving materials and goods" Manipulation)².

Addresse This type of transport has been defined by a group of legal scholars and it has been defined as "the transport of goods using several different modes of transport (air, land, sea) under one document, under which the multimodal transport operator bears the responsibility for the entire transport."³.

Multimodal transport is also defined as "a type of shipping, which involves the use of more From a means of transport for moving goods from the supplier For the buyer, multimodal transport is a combination of different modes of transport managed by a transport management system for the purpose of facilitating the movement of goods."⁴.

It has also been defined by several international bodies, including the European Union for Multimodal Transport in [year].1975 It is defined as "that type of transport which integrates more than one mode of transport with the aim of providing door-to-door transport services. "e" The door is open and responds to artistic principles."⁵.

Multimodal transport is defined in the Arab Multimodal Transport Agreement as "the transport of goods between two Arab countries."A And more, using two or more different modes of transport under one transport contract and one transport document, and under the responsibility of one person (the carrier) from the point of receipt of the goods from the sender until their delivery to the sender. efor him"⁶.

It should also be note defor me A There is a difference between international transport Y International and domestic (local) transport: The difference lies in the geographical scope;



international multimodal transport takes place between two points in two different countries, while domestic transport takes place between two different points within a country. One.

From the previous definitions, the conditions of transfer can be deduced. International Multimedia as follows:

- The transport must be international, meaning the goods are transported and goods Between two different countriesat least, Using at least two different methods;
- A The transport is carried out under a single contract (bill of lading) that covers the entire journey from departure. el have reached it;
- The responsibility should be borne by the carrier (transport contractor) alone.

2. Multimodal transport pillars

The foundations of multimodal transport as a service system are as follows:⁷:

1- Multimodal Transport Service Providers: Given the novelty of this concept in the Arab region, there is a need for specialized bodies that It has the experience, knowledge, and expertise to provide the available options for the most suitable combination of transport methods to overcome any problems that hinder the smooth flow of the transport process. This encourages the client to entrust it with carrying out the transport of goods through a successive and continuous series of different transport stages. Concentrating these tasks in one hand unifies the responsibility towards the client from the time the goods are received in the country of origin (factory delivery or port of shipment delivery in the exporting country) until they reach the hands of the final consumer after being transported through at least two transport stages (sea and land... for example).

2- Hub ports: This type of port emerged as shipping companies sought to exploit economies of scale by entering into alliances .These ports are large and capable of building giant ships that can accommodate and meet the requirements of major shipping companies .A path of high investment, modern technology, and highly efficient administrative organization, thus changing the competitive landscape of the region. Geography means that access to one port in each region ensures sufficient goods to fill enormous ships. Size reduction, and minimizing the number of ports called by mother ships to save on port and pilotage fees, etc..

3. Electronic data and information exchange system: Information technology and software play a vital role in transportation and logistics activities, despite the high cost of these Technology is only about investing directly in improving ways of communicating with customers. And the suppliers have led to a change This is tangible in the trade cycle, as the application of these systems has enabled the maritime transport industry to meet the demands of the trade cycle. The beach-based system facilitates the flow of goods by eliminating delays caused by overwork. The paper-based inspection, verification, and licensing process also increases the efficiency of transportation facilities.

3.Transport components International Multimedia:

It consists system Transportation International Multimedia according to the United Nations Conference on Trade and Development In addition to Contracts and documents; the multimodal transport contractor consists of three components, namely⁸:

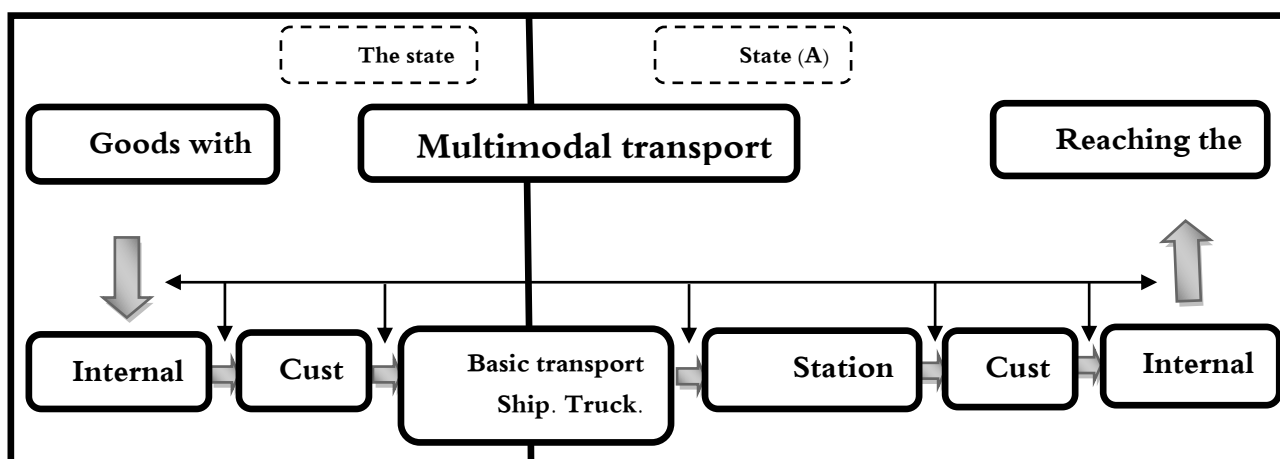


- **Means of transport (Routing):** Sea, land, air, railway, waterways;
- **Means of transportation (Means):** Ship, train, trucks, barge, river navigation vessels, airplanes;
- **Standardized cargo loading units (United load system):** Container, pallet;

And There is a difference In distinguishing between means and methods of transportation, some believe A The means of transport are land Sea and air are the means of transport, while the means of transport are the ship and the car. A And the container, while others see That it's the same thing.

Multimodal transport facilitates the flow of trade from the supply center The demand center operates in a single, continuous, and unobstructed flow, through the use of a continuous chain of interconnected transport systems. A The maritime, land, and air forces interact in a spatial and temporal harmony. Under the responsibility of the international multimodal transport provider, The following figure illustrates the sequence of operations that make up a multimodal transport system as follows:

Figure (01-01): The sequence of operations that make up System A To transfer International Multimedia



Source: Nour El-Din Hormoz et al., Multimodal Transport and its Application Requirements in the Port of Latakia, Tishreen University Journal for Scientific Research and Studies, Series Economic and Legal Sciences, Volume 36, Issue 03, Syria, 2014,p. 330.

4. Differences between transportation International Multimodal transport A The mediator:

The goal of multimodal transport is to coordinate different transport operations, unlike single-modal transport. A The intermediary, this is to increase the efficiency of transportation services, reduce costs, and facilitate supply and delivery processes. eoutrigger, We will explain this difference according to Table As shown below.

**Table No (01-01): Multimodal Transport and A The mediator**

Single-mode transport	Transportation International Multimedia
Multiple and complex shipping methods	Direct and convenient charger service
Difficulty in controlling time	Tight synchronization services
Stagnation in choosing a means of transport	Rationalizing the choice of transportation method and trip itinerary
Multiple transport operations with increased costs	Integrated transportation operations at the lowest cost
Dealing with multiple carriers	Dealing with a single transport provider
Multiple responsibilities due to multiple means of transportation	One responsibility in dealing with shipping
Multiple transport documents	Single Transfer Document
The number of modes of transport varies.	One total charge
Frequent exposure of goods to damage, loss, and destruction	Reducing damage and loss of goods
Long transit time for goods and delayed arrival	Fast arrival and delivery of goods

Source: Essam El-Din Ali Badawi, Developing Multimodal Transport in Arab Countries and the Role of Maritime Transport, The Second Expanded Conference of Specialized Arab Federations on the Role of Multimodal Transport in the Development of Arab Trade, Cairo, 2006, p. 08.

5. Transport characteristics International Multimedia:

Multimodal transport as a new alternative transport system to the transport system A The mediator It features a range of A For properties We mention some of them below⁹:

- **speed:** Bulk goods require a significant amount of time compared to containerized goods. Given this consideration, time in the handling process is considered an important element within the elements of the journey. The speed of moving goods from the starting point to the destination point is also considered one of the important pillars in the multimodal transport system as a result of increasing the efficiency, performance and ease of handling containers.
- **Safety:** Perhaps the most important task of transportation is to deliver goods to their final destination in good condition without them being damaged or lost. This is what the multimodal transportation system achieves by transporting goods in containers that reduce the percentage of losses or damage and reduce the degree of their exposure to theft.
- **Low trading costs:** The multimodal transport system aims to achieve a real reduction in the overall cost of transporting goods from the producer's door to the end consumer's door, which contributes to reducing the selling price. Experience has shown that consolidating shipments into modular units greatly reduces their handling costs compared to any other means of transport or any other type of transport.



6. Requirements for implementing the International Multimodal Transport System:

To implement the concepts of the international multimodal transport system, a set of requirements must be met, which are as follows:¹⁰:

a. Suitable infrastructure: Undoubtedly, the application of modern concepts for transporting goods has basic requirements related to the availability of suitable infrastructure, which we mention as examples as follows:

- **Freight interchange stations:** These stations serve as links between modes of transport, through which goods are transferred from one mode to another in a smooth manner that ensures minimal time and cost.

- **Container interchange stations:** It is considered one of the important pillars in activating integrated transport mechanisms between different means, whether it is established as part of interchange stations or as a separate entity in itself. The importance of container interchange stations is as follows:

- ✓ It is used to fill containers, especially small ones, with goods that do not fit into a full container.

- ✓ It gives exporters and importers the opportunity to exchange empty containers and thus reduce the movement of empty containers to and from ports.

- **Transportation network:** The transport network refers to the movement axes of roads and railway lines, but the availability of the transport network is not enough to implement integration and pairing between different means of transport in a transport chain, but the matter requires that the capabilities of the transport network qualify it for that.

b. Multimodal transport legislation: Legislation is one of the most important requirements necessary for the implementation of the concepts of this system for international transport. Legislation relates to the regulation of the completion of the basic requirements of infrastructure (interchange stations, container exchange stations, etc.) or in terms of legislation that defines the responsibilities of carriers and transport contractors, in addition to legislation related to compliance with the agreements regulating multimodal transport loops, or legislation appropriate for joining transit transport agreements.

C. Multimodal transport operators: An international multimodal transport operator is defined as the person who takes on the responsibility of organizing door-to-door transport operations using more than one mode of transport under a single transport document that covers all stages of the journey.

7. Modern trends in the concept of multimodal transport:

The multimodal transport system relies heavily on containers, which adhere to international standards in size and load capacity, and are accompanied by a range of technologies that facilitate shipping and transport operations. And exchange, therefore the trend can be highlighted T Modern versions of this transport system are as follows:¹¹:

a) The emergence of container technologies: The international multimodal transport system spread widely in the 1960s, with the emergence of container technologies. This new



technology brought about a radical change in international logistics activity. This change led to a change in the concept of transport service, which relies on the container as a means of transporting goods. Goods owners now have several options for transporting goods from one place to another, taking into account the total cost, i.e., taking into account the total cost of all the burdens they bear as a whole, which ensures the movement of goods in a timely manner and under suitable conditions. These costs are called logistics costs. Containers loaded with goods became able to move from production sites to consumption sites, which is known as the door-to-door transport system.

This change also brought about what are called container exchange stations, which have become important in integrating transport activity between different modes, where containers are loaded so that they can be used according to their carrying capacity.³Complete, and since the emergence of containers in the mid-1960s, container transport activity has recorded rapid growth. Containers have facilitated the direct movement of goods by different means of transport, and investment has increased by shipbuilding companies to build larger ships for transporting containers.

b) Information and communication technology: The new trend of the international business world towards globalization, integrated logistics, and the development of information and communication technology has led to a reshaping of the patterns of managing production, transportation, storage, and global trade exchanges. Information and communication technology continues to increase the productivity and competitiveness of institutions and transport service providers. These technologies have become an essential tool for exchanging commercial information with dealers and suppliers. All parties involved in the transport chain are adapting their practices to take advantage of the opportunities offered by information and communication technology. For example, electronic communication methods are currently used by companies to provide real-time information on shipping schedules, booking shipping spaces, tracking the movement of goods, advertisements, and transport documents. Thanks to information and communication technology, companies in developing countries, including Algeria, have been able to access a wide range of trade support services and improve their transport requirements.

c) Electronic shipping applications: These electronic applications enable the linking and integration of networks used for information exchange between departments and facilitate access to this information for institutions. This application allows for the flow of information "paperless" and combines the physical flow of goods in a virtual context based on technology. T Information and communication enable tracking and tracing of goods in all their places of movement. Electronic shipping processes also enable the simplification of information exchange about goods, which allows for a reduction in the cost of multimodal transport. This simplification relates to the possibility of providing information once in electronic form, the "single window" for monitoring the goods and the vehicle at once.

Furthermore, providing advance information about goods in electronic form has become mandatory, as shipping information can be provided via the Internet, which saves time and reduces errors. The continuous development of electronic portals, transport service



websites, and logistics service providers has become the main trend in the field of transport, and all electronic portals are equipped with functions that allow shippers to provide information electronically.

d) Environmentally friendly physical logistics services: Like other sectors, this sector is concerned with the environment, and efficient and physical logistics services have become inseparable from the Sustainable Development Goals. The efficiency of global logistics services requires multiple considerations from a broader perspective that includes the need for environmentally friendly logistics services.

Second axis: The concept of international supply and logistics

The concept of supply and logistics dates back to the Greek era, where this term was taken from the Greek word ((logos Which means transportation, and this term was used in the vocabulary of the armed forces for supplying equipment, managing military units in the army, storing food supplies, and planning road maps. After the end of World War II, the United States introduced this term into economics, and industrial companies adopted it under the name business logistics.

1. Origin and definition of supply and logistics

This term has received much research, like other terms in the world of management and business, and we will discuss some of the definitions that have focused on this term.

The term "logistics" is a relatively recent concept with military connotations. Its first application was in France during World War I, and it evolved in World War II to focus on transporting soldiers, their equipment, and ammunition to a specific time and place at the lowest possible cost. It refers to "the art of transporting, housing, and supplying soldiers—that is, managing the flow of personnel and resources to support the war effort by moving soldiers, their equipment, and supplies." Later, the application of logistics expanded into the fields of economics and business management under the name...¹²Business logistics This term is considered to have evolved over the years from traditional functions to more advanced functions according to the objective, as explained in the table below:

Table No (02-01): The evolution of the supply concept

the goal	The concept	period
The aim is to control the costs of these functions within the organizational environment.	Traditional functions (transport, distribution, storage)	years1970
Supplier selection and purchasing policy in the international environment	Supply Management	years1980
Reducing the costs of logistics activities, improving their quality, and improving the service rate.	Supply chain management	years1990

Source: Elias Ben Sebaa, Mustafa Belmokadem, previous reference, p. 93.

It is also not possible This concept has been surpassed by modern developments, with the emergence of an electronic trend known as electronic supply.(E-Logistic It is the



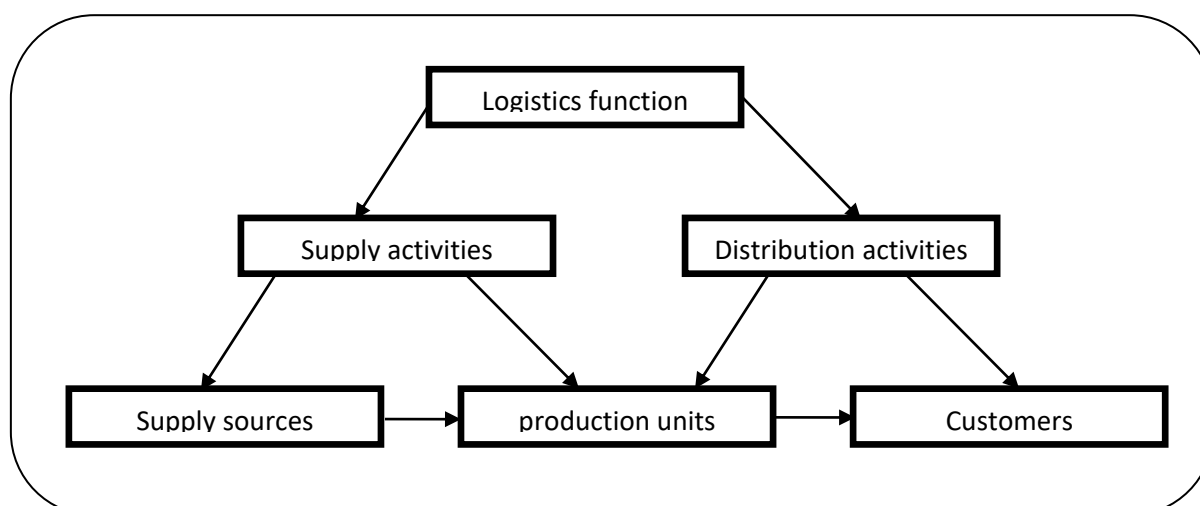
application or integration of information and communication technologies in the field of planning, implementing, and controlling the flow of goods and services with high efficiency.¹³.

Logistics emerged as a management function in 1977 in the works of Professor James L'Haskett. At Harvard University, he gave his first definition of logistics as "all activities that ensure the flow of goods and the coordination of resources and markets to achieve a good level of service at the lowest possible cost."¹⁴ And he gave PIMOR. The concept of supply can be defined as "bringing what is needed, wherever it is needed, whenever it is needed."¹⁵ And he knew stone. Supply is defined as "the science and art of identifying needs in terms of how to acquire, distribute, and keep them in a ready-to-operate condition."¹⁶.

The Logistics Business Council recognized him (Council of Logistics Management). It is defined as "the process of planning, implementing, and controlling the efficient and effective flow and storage of raw materials, finished goods, and related information from production centers to consumption centers with the aim of achieving customer satisfaction."¹⁷.

Transport logistics has also been defined as "the sum of activities and services that ensure the successful movement of goods and information between production units, manufacturing and storage centers, transit points, and consumption points."¹⁸ This definition includes transportation, storage, assembly, packaging, supply and demand forecasting, administrative, financial, and customs operations, maintenance and repair, and the exchange of information and documents. Based on this, the logistics function includes many activities, and the following figure illustrates this.

Figure No (02-01): Logistics job activities



comprising a range of components that enable efficient logistics operations and the achievement of desired outcomes. These components include the following:¹⁹:

- **Customer service:** It consists of the organization's method and philosophy in serving its customers (service marketing) and the level of costs it will bear in order to meet customer requirements and achieve their satisfaction.



- **Forecasting demand volume:** It is the process of determining the quantities expected to be requested by customers in a given period of time and forecasting the accompanying services they will need. All of this has a direct impact on purchasing, production and distribution plans.
- **Transportation activity:** It is one of the most important components in distribution and supply, and transportation costs can range from 35% to 65% of the total system cost;
- **Storage activity:** The organization must provide a reasonable level of its products and production supplies to carry out the production process and meet customer requirements, because that level cannot be provided immediately;
- **Handling Management:** This includes the management and movement of the organization's goods and raw materials from its warehouses to production centers, or the movement of goods during the production process, as well as the movement of goods from storage facilities to markets;
- **Warehouse management:** This includes managing the available warehouse spaces, selecting suitable locations for them, internal organization, and determining shipping and inspection areas within them;
- **Finishing (packaging):** It is the process of placing products in suitable containers or packaging to ensure that they are not damaged during shipping, distribution, supply, handling and transportation operations;
- **Production requirements:** It is the process of providing materials and supplies for the production process in terms of their locations, sources of generation, required quantities, purchase time and appropriate quality;
- **Scheduling and planning production and its flow to the market:** This involves balancing the quantities produced with the quantities demanded by the market and providing them at the right time and place;
- **Information systems:** An organization that seeks to provide efficient logistics services should ensure that it has information systems that reflect the level of performance of those activities, the associated costs, and the speed of information delivery, and it should work to develop them in line with changes in the business environment.
- **Marketing Information Systems:** That is, the organization must ensure the efficiency of distribution and supply by providing marketing communication systems that reflect the level of performance of those activities;
- **Reverse design of distribution and supply outlets** Due to the presence of defective units or units that were damaged during shipping, transportation and handling operations, and the resulting sales returns which may have high costs, it was necessary to provide reverse channels for suppliers;
- **Determining the cost of distribution and supply activities** Distribution and supply costs may range from 25% to 30% of the costs of the company's products, the company works on analyzing all elements of supply and distribution costs in order to reduce total costs and thus increase profits.



3. The importance of supply and logistics According to the World Bank, logistics activities play a vital and important role in commercial and economic activities within modern economic systems. They utilize material and human resources with a significant and positive impact on national economies. This is explained by the fact that logistics activities generate a percentage 19% of the national wealth of the United States of America, as it represents 30%. In addition to this, the application of logistics rules in the production of goods and services could result in a reduction in product prices by more than 20%. This is in addition to the high efficiency achieved by the logistics system in ensuring on-time delivery, which is known as the strategy. JIT (JUST IN TIME) In Japanese business management, this aligns with the reliability standard within service quality criteria, as is known in management science. It should be noted here that the just-in-time delivery strategy is one of the modern methods used in the field of operations management.²⁰ (Operations Management.

4. International supply objectives and functions during crises

The supply chain in international operations aims to:²¹:

- Ensuring responsibility for the technical and administrative process of packaging, transportation, and transit, and this is due to the accurate knowledge and comprehensive understanding of the contractual terms and obligations agreed upon by the commercial establishment;
- Preparing and editing technical statements of packing, transportation and transit costs according to the terms of the contract concluded between the buyer and the foreign seller, issuing orders, monitoring expenses and ensuring follow-up on the progress of operations.

The basic functions of international supply chain include various international operations such as the physical, procedural, and documentary preparatory operations necessary to achieve the physical distribution of goods to and from foreign countries. This function is generally formed into three main tasks: packaging, transportation and transit, and storage, with the availability of the necessary documents and paperwork. The physical distribution of goods is considered part of international marketing if it is directed to the end consumer or industrial. Supply chain is also considered a link in the chain of international operations and is in accordance with the following international standards:

- Proper packaging for goods that ensures their safety in all circumstances;
- A well-planned and controlled transfer that ensures its safe arrival within the specified timeframes;
- A smooth customs clearance facilitates the flow of goods to other countries;
- Preparing the various documents and paperwork necessary for customs, insurance, and transportation.²².

Third axis: The relationship of international multimodal transport to supply, logistics and economic development

Which is not your It is true that international multimodal transport plays an effective role in supply and logistics operations, as each of the two variables is a reason for moving the wheels of the other. They are two integrated systems. If it were not for the development of



supply and logistics functions, there would be no such thing as multimodal transport. And in the absence of multimodal transport, there would be no highly efficient supply that allows for the continuity of economic activity in accordance with modern trends.

1. The role of the logistics system in promoting multimodal transport during crises

The concept of logistics is a comprehensive concept that links several diverse activities (the supply network) such as transportation, purchasing, storage, and processing customer orders with the aim of controlling all movement activities. Despite the increasing interest in the subject of logistics in recent years, especially during crises, the modern concept is still largely vague, as no consensus has been reached on a definition of the concept of logistics.

The role of logistics is to plan, implement, control, and manage the efficient flow and storage of goods and services from the point of origin to the point of consumption, with the aim of meeting customer requirements.

Logistics also aims to provide raw materials, finished goods and services in the right quantities, in the right place and at the lowest possible cost. This helps to stimulate multimodal transport, as it is the guarantor of achieving the goal of logistics and is capable of providing these available resources.

Transportation is a key activity within the supply chain due to its crucial role in connecting supply and demand centers. It's worth noting that transportation costs represent the highest percentage of total logistics costs, reaching up to 20%. The logistics sector cannot continue without an advanced and highly efficient transportation network, as this system is affected by rapid changes in transportation in general.

Logistics services are the cornerstone of multimodal transport systems, enabling the control of inventory levels to the minimum required, thus reducing the costs associated with holding large quantities of goods awaiting sale. In other words, logistics is an integrated system that plans and controls the flow of raw materials from supply sources to production centers, and then the transportation of finished products to distribution and consumption centers. This is all supported by a data and information system that accompanies production processes, enabling sound decision-making. Therefore, implementing logistics principles achieves temporal and spatial advantages, as the value of raw materials and finished products increases once they are transported and made available at the right time and place.²³.

2. The importance of multimodal transport within the supply network

Multimodal transport is one of the most important fundamental components of the modern logistics management concept, as it is the activity that links the production or service project with the markets it deals with. Excluding the cost of raw materials, transport absorbs a percentage that reaches approximately 50% of the total cost of logistics activities, which exceeds the cost of any other activity, developed countries have been able to reduce logistics costs from 15% of its total sales value in the year 1987 to 7% general 2003 While you are still hugging the ceiling 30% In developing countries²⁴.

Furthermore, increased efficiency in transportation operations is reflected in the overall efficiency of the logistics system and the overall productivity of the organization. On the other hand, efficiency in transportation activities leads to an improved competitive position



for the organization through its impact on customer service, product pricing policy, and effective inventory management.²⁵.

3. The role of multimodal transport systems in achieving economic development

The transport sector is one of the cornerstones and fundamental structures of the economy. The famous economic thinker Alfred Marshall pointed out this relationship when he said: The most prominent factor in the modern economy is wealth, not in production, but in transport. It is understood from his words that the relationship between the transport system, production, and the market is a very close and important one.

Economic development is defined as the process aimed at improving the living standards of the population of developing countries by increasing per capita national income, which can only be achieved by activating the role of industry in the economic activity of these countries compared to the role of traditional agricultural activity. From the perspective of economic development, the international multimodal transport system can positively impact the pace of growth and development of economic activities through the following points:

- Enabling new forms of trade between industries and locations,
- Reducing storage costs and enhancing the reliability of existing trade and economic activities.
- Expanding market size and enabling economies of scale in the efficient production and distribution of goods and services,
- Increased productivity through more diverse and specialized labor markets and suppliers.

Conclusion:

Through our discussion in this study, we conclude that the multimodal transport system relies on at least two modes of transport and is based on a single contract from one country to another and is under the responsibility of the transport contractor. It is considered a modern and pioneering international transport system that relies heavily on information and communication technology applications and focuses on reducing transport and logistics costs, which would provide products with competitive prices. It is the backbone of the supply chain and its main driver, and it contributes significantly to ensuring the supply of various goods and materials, accelerating trade transactions, and developing domestic and foreign trade activities. It is also possible to highlight the reciprocal role of both international multimodal transport and logistics, as each of the two activities contributes to driving the other. The demand for logistics services contributes to activating multimodal transport, and in turn, multimodal transport contributes to activating the supply chain. The role and contribution of this transport system in achieving economic development through increasing the national income of societies cannot be overlooked.

Results:

The following results were obtained:



- Multimodal transport is an international transport system (between two different countries) that relies in its activity on at least two means of transport and is under a single, comprehensive contract of employment and under the responsibility of the transport operator;
- The multimodal transport system is a modern and advanced international transport system that relies in its activity on the applications of information and communication technology;
- Activating a multimodal transport system requires a robust infrastructure along with a modern and advanced logistics base;
- The multimodal transport system ensures a continuous supply chain from producer to consumer. It works to provide goods and products in the right place and at the right time;
- The multimodal transport system adopts a philosophy of minimizing supply and logistics costs in order to provide quality products at competitive prices;
- Both multimodal transport and logistics have an interdependent role; each contributes to activating the other's movement, and they are two complementary systems.
- International multimodal transport plays an active role in increasing national income and thus contributing to the economic development of the individual and society as a whole.

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