



# **Organizational Critical Factors and Their Effect in Achieving Strategic Competitive Advantage**

**"Applied Study in Maritime Transport Sector in Jordan"**

**عوامل المنظمة الحرجة وتأثيرها في تحقيق ميزة تنافسية استراتيجية**

**"دراسة تطبيقية في قطاع النقل البحري في الأردن"**

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**Master in Business Administration**

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## Islamic Law and International Trade

### **Links to the Past**

As for the sea, we hold it as the way of dry land. Allah said:

“All it is who subdued to ye the sea that vessels may sail thereon by his command and that ye may seek of his bounty”. Therefore, he has given permission that he who wills may trade thereon and I hold that no obstacle shall be placed between it and any of the people. For the dry land and sea alike belong to Allah. He has subdued them for his servants to seek of his bounty in both of them. How then should we intervene between Allah’s servants and their means of lively hood?

Muslims believe that Islam is the last religion. Islam is called the seal of religions. Islam, unlike the Talmud for Orthodox Judaism or the Bible in Christianity, not only covers moral or spiritual teachings, but also it covers every aspect of life such as trade. Islamic Sharia’a places religion as well as economics in the consciousness of Muslims. Therefore, Islam is comprehensive in coverage.

#### **Reference:**

Abd Al- Taww ‘ab, Awad 101 ( D’ar Al Fad’ilah 1994)

## Authorization

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## DISCUSSION COMMITTEE DECISION

This dissertation was discussed under title:

Organizational Critical Factors and Their Effect in Achieving  
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“Applied Study in Maritime Transport Sector in Jordan”

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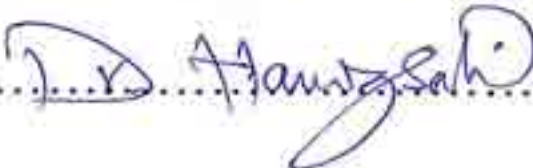
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Prof. Dr. Kamel M. Moghrabi ..... 

Prof. Dr. Ahmed Al-Qatamin *ahmed...a...qatamin*.....

Dr. Hamza Khraim... *H. Khraim*..... 

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I would like to extend my special thanks to Prof. Mohammad Al Nuaimi, without his encouragement and support. I wouldn't have been here completing my degree's final requirements.

I am also grateful to all contributors who responded to my questionnaire and made the process of data collection faster.

Sincerely Yours,

Issa Awad Mahmoud Hasan

## DEDICATION

### الاهداء

إلى..... من قال الله تعالى فيهم في القرآن الكريم :

" ( وَقَضَى رَبُّكَ أَلَّا تَعْبُدُوا إِلَّا إِيَّاهُ وَبِالْوَالِدَيْنِ إِحْسَانًا إِمَّا يَبُلُغَنَّ عِنْدَكَ الْكِبَرَ أَحَدُهُمَا أَوْ كِلَاهُمَا فَلَا تَقُلْ لَهُمَا أُفٍّ وَلَا تَنْهَرْهُمَا وَقُلْ لَهُمَا قَوْلًا كَرِيمًا " وَأخْفِضْ لَهُمَا جَنَاحَ الذُّلِّ مِنَ الرَّحْمَةِ وَقُلْ رَبِّ ارْحَمْهُمَا كَمَا رَبَّيَانِي صَغِيرًا )"

المرحوم بإذن الله تعالى والدي وإلى والدي الحبيبة أطال الله في  
عمرها،

وأطلب من العلي القدير أن يرحمهما ويعفو عنهما في الدنيا والآخره.

إلى ..... رمز المحبة والدفء والحنان والأمل، رفيقة عمري

زوجتي الغالية

إلى..... قره عيني، وفلذات كبدي (أسماء، إيمان، محمد، عدي، صهيب)

وأحفادي ( يارا، تالا )

إليهم جميعاً أهدي ثمرة عملي وصادق محبتي.

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# Organizational Critical Factors and Their Effect in Achieving Strategic Competitive Advantage

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## Abstract

The researcher intended to further existing literature by examining the importance of organizational critical four factors on the strategic competitive advantage of the Jordan Maritime Transport companies, namely cost, quality, time and information technology (IT). The analysis was based on the questionnaire designed to reflect the study objectives and questions, where the combination of Quality, IT, Cost and Time are considered to determine the level of competitiveness that a company creates regardless of the industry it operates in. A survey was conducted on a sample of Jordan shipping companies in order to examine and evaluate the importance of organizational critical factors to the shipping industry. The results of this survey corroborate the results of similar surveys in international literature revealing the importance of organization critical factors for the success of shipping companies. Where IT is ranked as the most significant factor and Time is the second significant factor, while Quality and Cost are considered not significant " factors. Nevertheless, differences exist when filtering takes place in terms of company size, operating sector strategies (i.e. operating in a single or more than one sector) and dominate philosophy related to the application of supply chain strategies.

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## المخلص

يقوم الباحث اضافة لما هو عليه قائم من بحوث بدراسة أهمية اربعة من العوامل الحرجة للمنظمة لمعرفة مدى تأثيرها في تحقيق ميزة تنافسية استراتيجية لشركات قطاع النقل البحري في الأردن، هي التكلفة، الجودة، الوقت، تقنية المعلومات. وقد اعتمد التحليل على استبيان صمم لكي يعكس اهداف الدراسة وأسئلتها حيث تحدد العوامل الأربعة مستوى التنافسية التي توجدتها شركة ما، بغض النظر عن القطاع الذي تعمل فيه. لقد تم اجراء البحث على عينة من شركات الشحن في الأردن لغاية دراسة وتقييم أهمية تلك العوامل في ميزة تنافسية استراتيجية للمنظمة. تؤيد نتائج الدراسة نتائج دراسات عالمية مماثلة مبينة أهمية عوامل المنظمة الحرجة لنجاح شركات الشحن البحري. حيث تبين أن تقنية المعلومات هي العامل الاكثر تأثيرا وعامل الوقت كان في المستوى الثاني في التأثير. ولم يظهر عنصر الجودة والتكلفة اي تأثير في التحليل المتعدد. ومع ذلك، ان من الممكن ان تكون هناك فروق في حال عملية التدقيق/ التمحيص فيما يتعلق بحجم الشركة واستراتيجيات القطاع العاملة ( اي العمل في قطاع واحد او اكثر) والفلسفة السائدة المتصلة بتطبيق استراتيجيات سلسلة التوريد.

## Chapter One

### General Framework

- (1.1): Preface
- (1.2): Research Problem and Questions
- (1.3): Research Significance
- (1.4): Research Objectives
- (1.5): Research Hypotheses
- (1.6): Research Limitations
- (1.7): Terminologies



## **1.0 General Framework**

### **1.1 Preface**

At the end of the twentieth century and the beginning of the third millennium the world has witnessed many successive changes and events that have had a significant impact on the strategies and policies of the organizations and their ability to survive and grow, such as the new economic concepts, globalization, privatization, trade liberalization, increased competition and information and technological advances.

Increased competition locally and globally caused changes in the philosophical tasks with regard to the behavior of individuals and business organizations towards building higher competitiveness. In order to achieve a competitive advantage for the business organization to meet future challenges and adapt to the successive external variables, organizations must pay attention to strategic thinking for effective strategic management. (Wadee, 2000)

Porter argues that competitive strategy is "about being different." He adds, "It means deliberately choosing a different set of activities to deliver a unique mix of value." Porter argues that strategy is about competitive position, about differentiating yourself in the eyes of the customer, and about adding value through a mix of activities different from those used by competitors. (Porter, 1996)

The business strategy is a long term plan of action designed to achieve a particular goal or set of goals or objectives. The business strategy focused on improving the competitive advantage of the organization.

Shipping industry is one of the important sectors that is keen to pursue certain strategies for achieving competitive advantage in world trade. Shipping is an integral part of the comprehensive economy and world trade development. It plays a key role in international trade. In addition it becomes an economic incentive for both the countries and the served sectors. The integration of port shipping activities helps its local region to flourish economically and socially (Kardoosh, 2005).

Jordan is a small country, limited in its natural resources, and its economy relies heavily on international trade and maritime transport. It depends on the efficiency of logistics for effective integration in the maritime transport sector. The competitiveness of the maritime transport services are affected by the efficiency of its ports, logistics, infrastructure, adequate regulation system, institutional structures, clear policies and strategic orientations, and its set of procedural and administrative practices required to overcome any obstacles that block its way to success(Kardoosh, 2005).

In order to achieve the development of the sector in a competitive industry regionally and globally, appropriate strategies and clear policies are needed.

Organizations are urged to improve their efficiency and competitiveness. (Wijnolst & Wergeland, 2009).

## **1.2 Research Problem and Questions:**

Jordan is considered one of the most important transit stations for many countries, mainly Iraq, Egypt, and Arabian Gulf states. Aqaba port provides an important junction to national, regional and international markets. However, the lack of natural resources and industrial limitations are considered basic difficulties for developing strong and competitive maritime transport sector.

This problem can be exposed by the following questions:

- What is the impact of “Cost” in the maritime transport sector in Jordan on strategic competitive advantage?
- What is the impact of “Quality” in the maritime transport sector in Jordan on strategic competitive advantage?
- What is the impact of “Time” in the maritime transport sector in Jordan on strategic competitive advantage?
- What is the impact of “Information Technology (IT)” in the maritime transport sector in Jordan on strategic competitive advantage?

### 1.3 Study Model

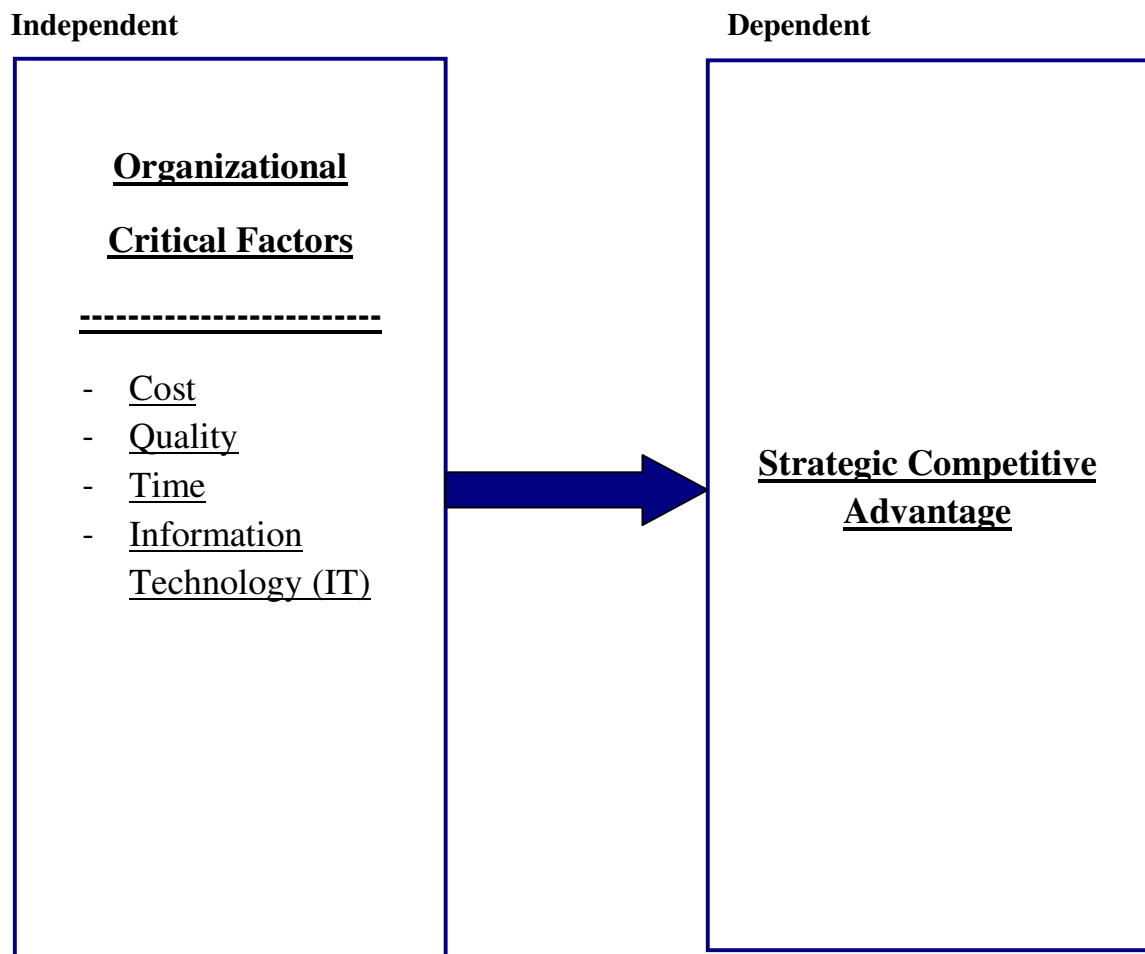


Figure 1.1: Study Model

### 1.4 Research Significance

Maritime industry has very few research studies on competitiveness, particularly in Jordan, although this sector is very important to developing countries. In Jordan however, this industry has been neglected for too long, and it might be an incentive to activate and pursue this line of investigation.

According to researcher's knowledge this thesis is one of the first few on the maritime industry and its importance for the economy of Jordan. In addition to that, this study could be a prelude to other researchers who wish to investigate the various areas of maritime transport, which may add value to shipping literature.

### **1.5 Research Objectives**

This study aims at:

- Identifying the critical factors (Cost, Quality, Time and Information Technology (IT)) in the maritime transport sector in Jordan.
- Identifying the importance of the maritime transport sector for Jordan's developing economy.
- Identifying the role of Information Technology (IT) toward strategic competitive advantage in the maritime transport sector in Jordan.

### **1.6 Research Hypotheses**

Ho1: There is no statistically significant impact of Cost in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha \leq 0.05$ ).

Ho2: There is no statistically significant impact of Quality in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha \leq 0.05$ ).

Ho3: There is no statistically significant impact of Time in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha \leq 0.05$ ).

Ho4: There is no statistically significant impact of Information Technology (IT) in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha \leq 0.05$ ).

## **1.7 Research Limitations**

For each study whether practical or theoretical there are spatial, time and human limits, for the spatial limits are represented by the study sample organization, whereas the temporal limits are represented by the time period of the study.

1) Time limits: the preparation of the study determined in the 2011-2012 academic year.

2) Spatial boundary: defined in the shipping sector in Jordan.

3) Human limits: the sample of the study limited to administrators in the maritime transport sector in Jordan.

## **1.8 Terminologies**

### **Competitive Advantage:**

A competitive advantage exists when the firm is able to deliver the same benefits as competitors but at lower cost (cost advantage), or deliver benefits that exceed those of competing products (differentiation advantage). Thus, a competitive advantage enables the firm to create superior value for its customer and superior profit for itself. (Porter, 2008)

### **Business Strategy:**

“Strategy is the direction and scope of an organization over the long-term: which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets and fulfill stakeholder expectations. (Johnson and Scholes, 2005)

### **Lower cost strategy:**

It is the ability of a company or business unit to design, produce, and market a comparable product more efficiently than its competitors. (Thomas L. Wheelen, & David J. Hunger, (2011) p233))

### **Differentiation strategy:**

Is the ability of a company to provide unique and superior value to the buyer in terms of product quality, special features, or after-sale service. (Thomas L. Wheelen, & David J. Hunger, (2011) p233)

**Shipping Organizations:**

They are organizations specialized in moving, lifting or organizing goods and commodities such as grains, sand, gravel, wood chips, coal, containers and others, from ports of loading to the port of discharge by merchant ships (Corbett & Winebrak, 2008).

**Seaport:**

A port is a location on a coast or shore containing one or more harbors where ships can dock and transfer people or cargo to or from land. Port locations are selected to optimize access to land and navigable water, for commercial demand, and for shelter from wind and waves. Ports with deeper water are rarer, but can handle larger, more economical ships. (Haralambides, 2002)

**Logistics:**

It is the management of the flow of goods between the point of origin and the point of destination in order to meet the requirements of customers or organizations. Logistics involves the integration of information, transportation, inventory, warehousing, material handling, and packaging, and often security. Logistics is a channel of the supply chain which adds the value of time and place utility. (Heaver, 2002)



## **Chapter Two**

### **Theoretical Frame Work and Previous Research**

- (2.1 ): Introduction
- (2.2): Porter's Generic Competitive Strategies
- (2.3): Porter five forces analysis
- (2.4): Porter Five force Model Practice in shipping
- (2.5): Supply Chain and Logistics Management
- (2.6): The Horizontal and Vertical Restructuring of Lines
- (2.7): The Rise and fall of National Shipping Policies
- (2.8): IT in Logistics and Supply Chain Management
- (2.9): Logistics in Transocean Transport
- (2.10): Intra- Company information Flows
- (2.11): Organization Critical Factors
- (2.12): Maritime Industry in Jordan
- (2.13): Institutional Performance and Governance
- (2.14): Previous Researches
- (2.15): The Current Research

## **2.0 Theoretical Frame Work and Previous Research**

### **2.1 Introduction:**

Shipping plays an important role in countries' economic development plans, and is considered the backbone and foundation to the movement of international trade through shipping and delivering cargoes around the world.

The Rotterdam Rules build upon and provide a modern alternative to earlier conventions relating to the international carriage of goods by sea, in particular, the International Convention for the Unification of Certain Rules of Law relating to Bills of Lading (Brussels, August 25, 1924), ("the Hague Rules"), and its Protocols ("The Hague-Visby Rules"), and the United Nations Convention on the Carriage of Goods by Sea (Hamburg, March 31, 1978) ("the Hamburg Rules").

The Rotterdam Rules provide a legal framework that takes into account the many technological and commercial developments that have occurred in maritime transport since the adoption of those earlier conventions, including the growth of containerization, the desire for door-to-door carriage under a single contract, and the development of electronic transport documents. (Costas T. Grammenos, 2010)

Maritime transport, a key instrument in international trade, has transported nearly 25,000 billion tons of cargo across the ocean annually, which is about (71%) of international cargo, compared with 7,000 billion tones transported by rails and 3,000 billion tons by road. (Haralambides, 2000)

Recent market requirements for transporting goods around the world has changed drastically and significantly, and thus, posed a challenge for all transport systems, including maritime, to acquire the most appropriate and sophisticated technologies (Al-Zuhd, 2005).

The importance of sea transport in international trade was eloquently expressed by Sir Walter Raleigh (1610), when he said: "who dominates the sea dominates commerce, and who dominates world trade, dominates the world's wealth and thus the world itself."

UNCTAD statistics showed that there has been a global maritime trade for developing countries which has witnessed significant change by capturing the modest 28 % of trade in imported goods, and almost 50 % of outgoing shipments, including oil exports (UNCTAD Report, 2007).

The markets in shipping divers among bulk or liner shipping, shorter or longer distance routes, sizes and types of ships, types of goods carried and types of services provided. Shipping provides the customers, namely the shippers, with a transportation service, main sources of differentiation appearing to be the operational and functional aspects of the service and the service quality. Shipping adds value to materials and goods and contributes to international trade in the field of cheaper and more efficient transport services (Costas TH. G., September 2002).

The port landscape has, after all, also altered in many respects. New technologies and strategic developments have led almost automatically to greater port competition, both at port authority level and at the level of companies operation within the various ports. All port players, from authorities to terminal operators and agents, are looking for ways to

maximize profits, to maintain or increase market share, or simply to survive. These goals are not so easily achieved in an era of internationalization of production, consumption and trade (Costas TH. G., September 2002).

Economically speaking, it should be noted that shipping system of merchant fleets, ports and customs authorities play an essential role in the growth of the developing countries (e.g. Arab economics) through formulation of various strategies. (Haralambides,2000)

The researcher would like to reassure the importance of the organizational critical factors by expanding on the meaning of each of one as follows:

**Time** has always been a central issue of research in management especially in the supply chain management and logistics as much attention has been given to reducing delivery and redelivery time (Mason & Towill, 1999).

**Cost** minimization is the main goal for all companies regardless of the industry of operation. In this study the cost factors are going to add value to the shipping organizations. (Hussain, & Gunsekaran, 2011)

**Quality** is relating to shipping by focusing on those quality factors that actually add value to shipping organizations. (Menon, 1998)

Porter defined **Technology** broadly, which includes research and development, but it also includes other activities within the firm for developing new techniques, methods, and procedures. (Porter, 2008)

Services level is an issue that has attracted special attention to customer satisfaction, which guarantees the survival and success of organizations in the modern business environment. (Levy, 1997)

Technological developments, rapid growth in liner shipping, upward trends in ship sizes, integration of shipping companies through mergers, alliances and acquisitions and fluctuations in international trade produce pressures on the shipping industry ending in declines in freight rates and affecting the competitive position of the industry negatively. The fierce competitive environment of shipping forces the industry to concentrate on market oriented strategic planning where competitive strategies of cost-leadership, differentiation and focus lie at the centre (Costas TH. G., September 2002).

## 2.2 Porter's Generic Competitive Strategies:

A firm relative position within its industry determines whether its profitability is above or below the industry average. The fundamental basis of above average profitability in the long run is a sustainable competitive advantage. There are two basic types of competitive advantage a firm can possess: low cost or differentiation. The two basic types of competitive advantage combined with the scope of activities for which a firm seeks to achieve, lead to three generic strategies for achieving above average performance in an industry: cost leadership, differentiation, and focus. The focus strategy has two variants: cost focus and differentiation focus.

		Competitive Advantage	
		Lower Cost	Differentiation
Competitive Scope	Broad Target	1. Cost Leadership	2. Differentiation
	Narrow Target	3a. Cost Focus	3b. Differentiation Focus

Figure 2.1 Porter Generic strategies

### 2.2.1 Cost Leadership

In cost leadership a firm sets out to become the low cost producer in its industry. The sources of cost advantage vary and depend on the structure of the industry. They may include the pursuit of economies of scale, proprietary technology, preferential access to raw materials and other factors. A low cost producer must find and exploit all sources of cost advantage. If a firm can achieve and sustain overall cost leadership, it will be an above average performer in its industry, provided it can command prices at or near the industry average. (Thomas L. Wheelen, & David J. Hunger, 2011)

### **2.2.2 Differentiation**

In a differentiation strategy a firm seeks to be unique in its industry along some dimensions that are widely valued by buyers. It selects one or more attributes that many buyers in an industry perceive as important, and uniquely positions itself to meet those needs. It is rewarded for its uniqueness with a premium price.

### **2.2.3 Focus**

The generic strategy of focus rests on the choice of a narrow competitive scope within an industry. The focuser selects a segment or group of segments in the industry and tailors its strategy to serving them to the exclusion of others.

*The focus strategy has two variants:*

- (1) In cost focus a firm seeks a cost advantage in its target segment.
- (2) In differentiation focus a firm seeks differentiation in its target segment.

Both variants of the focus strategy rest on differences between a focuser's target segment and other segments in the industry. The target segments must either have buyers with unusual needs or the production and delivery system that best serves the target segment must differ from that of other industry segments. Cost focus exploits differences in cost behavior in some segments, while differentiation focus exploits the special needs of buyers in certain segments. (Thomas L. Wheelen, & David J. Hunger, 2011)

### 2.3 Porter's five forces analysis:

Porter's five forces analysis is a framework for industry analysis and business strategy development developed by M. Porter of Harvard Business School in 1979. It uses concepts developed in Industrial Organization (IO) economics to derive 5 forces that determine the competitive intensity and therefore attractiveness of a market. Porter referred to these forces as the microenvironment to contrast them with the more general term macro -environment. They consist of those forces close to a company that affect its ability to serve its customers and make a profit. A change in any of the forces normally requires a company to re-assess the marketplace.



Figure 2.2

*Porter five forces analysis*



Porter's Five Forces include three forces from 'horizontal' competition: the threat of substitute products or services, the threat of established rivals, and the threat of new entrants; and two forces from 'vertical' competition: The bargaining power of suppliers and the bargaining power of customers. (Porter, M.E., 2008)

## **2.4 Porter Five force Model Practice in shipping:**

The shipping industry is nowadays a competitive business especially for the container and dry bulk business which occupies more than 90% of the international trade. Therefore, it is better to examine:

- 1) The intensity of competition in the industry.
- 2) Industry profitability since competition can drive down the rate of return, so it is easier to investigate the way to formulate the competitive strategy in this industry.
- 3) Identify the position of the company in the industry whether to defend or attack in its favor.

### **2.4.1 Threat of Entry**

The newcomers in the industry bring new capacity and acquire a certain piece of market share. The rate of return in the industry, therefore, would increase and the competition would enhance. Since it is common for the newcomer to offer lower price services or products that may cause the existing firms lose market share and implement a relative strategy to lower its price and make a cut-throat competition. Eventually, the rate of return in the industry would decrease. However, to enter or to exit the industry is dependent on the barriers to entry or exit. The barrier to entry may be the capital requirement, switching cost, government policy, etc.

### **a- The Potential Entrants**

In the shipping industry, the potential entrants to the container business can be identified by the alongside of the supply chain. Most of the firms in the supply chain may be implement **the upward** integration or **downward** and they would become the competitors in the shipping industry. For example, the retailers may implement upward integration to acquire the distribution functions to gain the competitive advantages in the retail industry and reduce the pressure from the supply chain alongside.

Since the situation in shipping industry is that the supply of ships is greater than the demand, the freight rates were low in several years. It is no intention for the potential entrants to do vertical integration. And there is no trend to pose the vertical integration to secure the supply of container space. (Lalwani, 2010)

### **b- Entry Barrier**

There are some entry barriers to prevent the entry to the industry like capital requirement, cost disadvantages independent of scale and government policy.

#### **1. Capital Requirement**

One of the barriers to entry in the shipping industry is the requirement to large capital investment, since the capital of shipping industry is mainly the property of the ship. Therefore, a large investment is required to enter to the industry. Although ships can be purchased from the second hand market and rent in the tramp market, it is still hard for the new entrants to invest large amount of resources to negotiate in the market and the quality of ship is not guaranteed, and the extra costs to invest in maintenance equipment are also another problem. (Hingho, 2011)

## **2. Cost Disadvantages Independent of Scale:**

The new entrant cannot gain the cost advantage. Moreover, the existing firms have already established their proprietary systems or technologies, developed in the favorable locations and utilized the past experience to optimize and smoothen the process. Therefore, it is hard for new entrants to gain a competitive advantage to survive. In the shipping industry, the top 20 shipping companies has already occupied more than 80% of the market share, which means that most of the customers were concentrated in using the top 20 shipping companies' services. A partnership has been established between customers and the existing firms. (Aplhaliner, 2011)

## **3. Government Policy**

The government policy can affect the entry to the industry by controlling the license to the company or by implementing the regulation such as pollution control or labor safety to capital requirement. The license for ships enter to the ports is hard to obtain and the routes have also been regulated, especially in shipping industry.

For example, US government has implemented the regulation "Act to Prevent Pollution from Ship (APPS)" to all the US flagged ships and foreign flagged ships in the US waters that regulate the amount of pollutants emission from ships.

Moreover, International Maritime Organization (IMO), the United Nations specialized agency promoting safe, secure, environmental sound, efficient and sustainable shipping through cooperation, have 166 of the UN members that follow the regulation by IMO. These regulations would increase the investment to the capital for the new entrant, and strengthen the entry barrier.

To conclude, the capital investment in the shipping industry is high, the new entrant is hard to provide the same service level compared with the large firms, and the government policies are not favorable to the new shipping companies. Therefore, the entry barrier is high.

**c- Exit Barrier**

There are also some barriers to prevent existing firms from exiting the industry like economic, strategic and political factors that lead companies competing in business even though they may be earning less or negative return on investment. In conclusion, the exit barrier in the economics side in the shipping industry is not significant.

The Entry barrier in the industry is high due to the large capital requirement, the large and strong existing firms and the government pollution regulation that make the investment surprisingly large.

Moreover, the Exit Barrier in the industry is low due to the active trading in second hand and tramp market that ease the shipping companies to sell or charter ships.

Therefore, until now shipping industry is still a profitable business for the existing firms to continue investment. But it is not good for the new entrants since the competition is relatively strong and high chance to be exposed by the retaliation by the existing firms.

It is hard for the new entrants to compete with the existing firms, although the industry is attractive with stable return. (Hingho, 2011)

To summarize, there are no intentions and reasons for the potential entrants to enter the shipping industry, and the entry barriers are high, therefore, the threat of entrants is low.

### **2.4.2 Bargaining power of buyers:**

The major buyers in the shipping industry are the manufacturers who want to ship the cargoes to the retail stores to sell their products to the end consumers. Therefore, the buyers can put a pressure on the distributors to lower the freight rate.

For instance, most of the global manufacturers source the materials globally and manufacture in the place where lower costs such as China, India, Vietnam etc., because the global manufacturers place a large quantity of orders to the shipping companies. Therefore, the global manufacturers were the major customers of the shipping companies.

#### **a- Oversupply situation**

Moreover, the bargaining power of the buyers is also strengthened. Nowadays, there are an over-ordering of the container ships and the continuous innovation of the largest container ships. Therefore, the container ships are over-supply leading to the decrease in freight rate, and strengthening the bargaining power of buyers.

#### **b- No effect on the quality of the cargo**

In addition, the shipping companies act as a role of distributors in the supply chain, and the services offered are not critical to the quality of the buyer's products and the services offered are standardized. Most of the shipping companies are providing similar route such as Shanghai to Jeddah. Therefore, it is easy for the buyers to switch into other companies and negotiate with the shipping companies for lower prices. As a result, the bargaining power of buyers is enhanced.

To conclude, the situation now is not favorable to shipping companies due to the oversupply of ships and the unimportant role in the supply chain. Therefore, there are

large pressures on the shipping industry to negotiate the freight rate, and the bargaining power of buyer to the shipping industry is strong. (Hingho, 2011)

#### **2.4.3 Bargaining power of suppliers:**

The major suppliers to the shipping industry are the bunker, port operators, labors, and ship charters.

##### **a- Bunker**

The Bunker price is one of the major concerns to the liner companies and it would fluctuate significantly in accordance to the oil price. Normally, the cost of bunker fuel would account for about 25% of the total vessel operating costs. However, the trend in bunker price is still increasing, which indicates that the operating cost for the liner companies would increase in the coming years.

Although increase in bunker prices would decrease the profitability of the industry, the firms have already introduced certain measure to transfer the cost to customers that is the bunker surcharge. By doing this, it can help firms to reduce the pressure from the suppliers and release the pressure to the buyers. Although the surcharge can help to reduce a certain operating costs, the high demand in crude oil does not change. Therefore, the industry still suffers the pressure from the bunker suppliers.

##### **b- Labors**

Shipping crews are one of the major human resources in the shipping industry, and they also play an important role in a vessel operation. According to the report of Manpower 2010 Update: The worldwide demand and supply of seafarers, BIMCO and ISF, the results show that the shortage of seafarers is not significant and the balance between demand and supply for ratings with a modest overall shortage of officers is about 2 %, However, the results do not mean that individual shipping companies are not experiencing serious recruitment problems, but the overall supply and demand are currently more or less in balance. The report also estimates a shortage of seafarer in the future. Therefore, it could be one of the bargaining powers threatening the shipping industry. (Bimco, 2011)

**c- Port operators:**

The port operators can also threaten the shipping industry by requiring liner companies to pay for higher handling fees and bunker prices. Therefore, the liner companies may suffer the pressure from the port operators. Especially during the peak season, the berths were fully loaded especially. Therefore, the bargaining power is even stronger. In addition to that, the vessels are becoming larger, requiring deep-sea berths for loading and unloading; however, the supply of deep sea berths is limited. The shipping companies would be threatened by lacking in supply of berths.

**d- Ship Charters**

Ship Charter is a ship owner chartering the containerships to a long term, fixed rate time charters to liner companies. The liner companies would suffer great pressures from the ship charters since most of the liner companies chartered more than half of the total vessels and only owned less than half of the vessels. Therefore, the charter price is vital

to the profitability of the liner companies, and so, the bargaining power to the liner companies is strong.

To conclude, the bargaining power of suppliers is strong because of continuous increase in the bunker price, the next generation having no passion in shipping industry, the lack of sophisticated terminal in worldwide and the most of the ship not owned by the liner firms. Those finally make the situation hard. (Hingho, 2011)

#### **2.4.4 Substitutes:**

The substitutes are the other mode of transportation like land transport and air freight.

##### **a- Air transport:**

Nowadays, the aviation industry is now growing so fast, the airplane is becoming larger, and the capacity improves significantly. However, it is still hard to compare it to seaborne trade. In 2010, approximate 90% of the world trade was carried by sea but only less than 1% of the world trade was carried by air; therefore, until now it is hard for the air freight to substitute the sea transport.

##### **b- Land transport**

Similarly, land transport occupies a certain term of trade volume in the world; moreover, the land transport can distribute the cargos from the coastal region to in-land. However, the seaborne trade is responsible for trading between country and country across the oceans. Comparing with the volume of seaborne trade, volume of land transport is about one ninth of the volume of seaborne trade.



To conclude, seaborne trade occupied more than 80% of world trade volume but only used about 4% of the energy. It is obvious to see that sea transport is one of the most important and efficient mode of transportation, therefore, it is hard for the other potential substitutes to replace the position of seaborne trade and hard to put pressure to the shipping industry. The threat of substitutes is weak. (Hingho, 2011)

#### **2.4.5 Rivalry among existing firms:**

##### **a- Dominant competition**

It is a fact that the top ten liner companies occupied more than 40% of the world share, and the price competition was dominant by the large liner companies. Therefore, the intensity of rivalry among existing firms depends on competitive move of these large liner companies. We can see that they are not equally balanced competitions in the world. The competitions largely depend on the competitive move by the large firm. In the past, Maersk has introduced the larger ship to introduce the threat to the industry and make a price competition to increase its market share. Although the price competition cannot lead Maersk to increase its market share, the industry freight rate was significantly affected by the move, which decreased gradually until late 2009 when Maersk stopped price competition. The large firms can significantly affect the industry more than the small firms since they are resourceful and highly capable.

#### b- Slightly Slow Industry Growth

The industry growth largely depends on the growth of world trade. Although there was a downturn in 2009, decreasing more than 20% of world trade volume, the trend is still increasing. Therefore, there is still high probability that the world trade would strongly rebound, and the WTO also forecasts that the world trade will expand by 9.5 %, and according to the Trade and development Report, UNCTAD, the growth rate in 2010 was relatively high due to the rebound from 2009, the economic crisis. Therefore, the world trade growth is sustainable and relatively high compared to 2009. Although there is a high growth rate in 2010 due to the rebound from 2009, the growth in 2011 slightly increased in 4.5 %. Therefore, the industry growth is relatively slow that it would cause competition into a market share game for seeking expansion, but it would not be vigorous in coming years since the industry has just recovered from the downturn in 2009. (UNCTAD, 2011)

#### c- **Lack of differentiation**

Since most of the liner companies provides similar services and also similar route to the customers, the buyers would largely base on the price and the service quality. Therefore, it is a reason for the firms to compete volatility in offering lower price with higher quality of services that would decline the profitability of the whole industry.

#### **2.4.6 Summary**

The buyers put the most pressure on the industry due to access of market information, the services provided by the industry not affecting the quality of its products, and the current situation is favorable for buyers.

The suppliers also put pressure on the industry by threatening the firms with lack of supply of the source of energy, labor, berths, and ships to the industry. Although there are high demands for energy, the energy consumption may affect the operation of the ships, and the current situation is affected by the oversupply of ship rather than lack of ship supply. Therefore, the threat of suppliers is not that strong.

The threat of entry was minimized by the high entry barrier and not attractive returns. The expected retaliation is strong since the industry is now growing tightly and new entrants are hard to well establish the position to compete in the industry.

The threat of substitutes is also insignificant because the other modes of transport cannot compete with the sea transport in terms of the volume and efficiency. Moreover, the firms are now building up the environmental friendly image to attract the business in shipping industry.

To summarize, the pressures from the suppliers and buyers affect the industry most in these years. But most of these are the seasonal factors that affect the profitability. The core competence of the industry is dependent on the idea that the sea transport is the most environmental friendly and efficient mode of transportation in the world. In the foreseeable future, air freight and land transport are still hard to substitute the position of sea transport based on its high volume and low efficiency characteristics. (Hingho, 2011)

## **2.5 Supply Chain and Logistics Management**

Supply Chain Management is defined as “the systematic, strategic coordination of the traditional business functions and the tactics across these businesses functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply as a whole”. (Mentzer et al, 2001)

### **2.5.1 Evolving Conditions in Supply Chain Management and logistics**

Liner shipping is but one of the myriads of services and product activities that are necessary for the delivery of goods and services required by consumers. The opportunities and challenges faced by the lines are affected by the network environment in which they operate. As the environment changes under technological, economic and political conditions, the lines have opportunities to follow strategies that give them an advantage in serving customers needs. These strategies may involve and certainly have implications for the organizational structure of the industry, as anticipated by (Chandler, 1962) and (Muris et. al, 1996).

### **2.5.2 Customer needs and the challenges and opportunities**

Increased competition heightens pressures for the redesign of supply chains and logistics systems. The competition drives the need to reduce costs while, at the same time, maintaining or improving service levels. Actions are taken to reduce costs and to improve service work concurrently and dynamically, although their descriptions often focus on specific effects. Such actions are considered next, prior to considering their implications for shipping lines.

### **2.5.3 Developments in Logistics**

Four strategies provide examples of the central role for logistics in improving supply chain performance. They are: sourcing in low-cost locations, just-in-time delivery, postponement, and improving supply chain visibility. While these strategies are not strictly separate, it is convenient to deal with them individually. (Costas TH. G., September 2002)

#### **a- Sourcing in low –cost locations**

Industries have always made trade –offs among locations based on the benefits of locating close to low cost resource inputs compared with the benefits of proximity to markets. Typically, industries in which labour costs are high gravitate to low wage –cost locations. The ability of firms to do this is dependent on efficient logistics services to get products to where they are needed.

#### **b- Just –in – time and postponement**

Reducing the costs of logistics and improving service to customers by shortening time cycles which are important in the design of supply chains. The successful use of the Kanban system in the Japanese automobile industry has had a major influence on all industries around the world as they have shifted to new delivery systems. Just-in-time (JIT) is just one approach to reducing inventories in supply chains through frequent, small quantity and highly reliable deliveries.

These deliveries are timed to respond to immediate user needs; the products are pulled through the supply chain by demand. This is a major difference to the time when goods were produced in long, low-cost runs based on forecasts well ahead of demand. When

manufacturers are the immediate recipients of goods, terms such as lean manufacturing are used to describe the new environment. (Costas TH. G., September 2002)

### **c- Supply chain visibility**

Reductions in the order cycle and delivery lead times have been achieved through many changes in the design and operation of supply chains and logistics systems. Vital contributions to the changes have been made by the developments in information and communications technologies (ICT). Notably have been the transfer of data and other information resulting in enhanced supply chain visibility (Forrester, 1958).

#### **2.5.4 Challenges and opportunities for liner shipping**

Each of the strategies described previously is associated with a range of changes in the characteristics of supply chains and logistics systems. These create challenges and opportunities for the shipping lines.

Relationships among supply chain participants tend to be closer. To achieve this there are fewer firms. One of the attributes desired by shippers as they develop closer relationships with fewer lines is that those lines have an extensive service network able, therefore, to serve them in various trade lanes. The pressure on lines is to develop more extensive service networks (Evangelista et al, 2001).

The reduction of time is becoming a more important logistics strategy to reduce costs and to improve customer service. The costs of “disruptions”, whether associated with variations in demand, logistics or supplier performance warrant close attention (Levy, David, 1995).

The effects of disruptions are particularly great when lead times are long, even with good information systems. Greater recognition of the costs of disruptions encourages the design of shorter and faster supply chains. This encourages local sourcing, the use of improved IT and of expedited logistics services. The liner shipping industry faces prospects of a diminishing role international trade and competitive advantage accruing to lines offering short reliable transit times.

## **2.6 The horizontal and vertical restructuring of lines**

Shipping lines have faced pressures in the changing market place to expand their services geographically and to widen the range of services offered. The response of lines has differed depending on their views of market opportunities, their resource base in terms of their financial resources, the initial geographical extent of their services, the range and level of supporting services, especially in information technology, and the depth and breadth of their human resources. (Heaver, 2002)

### **2.6.1 The horizontal restructuring of liner shipping**

As large shippers have followed supply chain strategy involving the use of fewer suppliers, they have placed heightened value on the extent of the network of services offered by liner companies. This is a primary reason given by American President Line (APL) in 1995 for the introduction of its first service from Asia to Europe through a slot-charter agreement. The new service was a significant shift in APL's policy as up to that time it had a Pacific - only service strategy. It is the dominant reason for the increased concentration in liner shipping which is one of prominent features of industry.

The strategies of lines in extending the network of their services have been covered extensively in the literature and feature prominently (Evangelista et.al 2000). The addition of routes by lines has been dominantly practiced by slot charter, alliance merger, or acquisition rather than the extension of own services. These methods limit the need for new investments while extending route networks and avoid reductions in the density of traffic in relation to infrastructure costs by route, an important consideration in network industries.

### **2.6.2 The vertical restructuring of liner shipping**

The vertical structure of liner shipping has been affected by the developments in logistics in a number of ways. The interests of shippers in dealing with fewer suppliers have influenced lines to extend the vertical reach of their services. The interests of shippers in a faster and more reliable service have not only affected the design of shipping services but also the relationship among the services necessary to deliver value to shippers for example, by door-to-door services. The interests of shippers in outsourcing logistics services have created an opportunity for shipping lines (and others) to expand their third-party logistics services. The expansion of lines into services beyond shipping has led to greater vertical integration in the industry, but the organizational relationships vary with the nature of activities and the interests of shippers in those activities. The added services common in shipping are divided into three categories: - terminal operations, intermodal services, and logistics services. (Costas TH. G., September 2002)



## **2.7 National Shipping Policies**

### **2.7.1 What is maritime policy?**

Traditionally, the emphasis has been on national shipping policy. Such policies are usually promotional in nature and aim either at promoting a nation's merchant marine or protecting it and its competitions from fleets of the other nations or both. As the shipping policy may include promotional as well as regulatory activities, the result may appear outright schizophrenic, with governments on the one hand promoting the freedom of the seas while, on the other hand, restricting market access or activities. In fact, shipping policy often becomes the regulation of shipping.

Sturmey has given the following definition of national shipping policy. "A nation may be said to have a shipping policy when it encourages, permits, or formulates measures to interfere with or control the free play of market forces in regard to the employment of shipping. The interference of control may extend from ad hoc measures to a carefully planned and continuous policy". (Sturmey, 1975).

### **2.7.2 The Five W's of Shipping Policy**

The five W's, i.e., the what, when, where, why and who, of shipping policy reviews three scenarios or models of shipping policy, based on concrete examples from Canada, China and West Africa.

The question of shipping policy is multifaceted, and it may be helpful to look at shipping in terms of the following five questions:

- 1) What is understood by shipping policy?
- 2) Why do we have shipping policies?
- 3) When did shipping policies come into being and what is their present status?
- 4) Where do we find shipping policies, by region and by shipping sector?
- 5) Who are the major players (key agencies and organizations) involved?

### **2.7.3 Why do we have maritime policies?**

There was a time when the above question would not even be asked. It seemed obvious that maritime transport constituted an industry of major national importance, and that as such, it needed to be protected and promoted by the state. The history of national shipping policies is long and glorifying and dates back to ancient times when state, trade, and navy were closely linked. Even today the concept of “trade follows the flag” is often taken to be self evident, requiring no further explanation. Such ideas are firmly engraved in the economic and political psychology of many nations. (Sletmo, G.K 2001)

## **2.8 IT in Logistics and Supply Chain Management**

The supply chain is both a network and a system. The network component involves the connections needed in the flow of products and information. The systemic properties are the interdependence of activities, organizations and processes. As one example, transportation transit times influence the amount of inventory held within the system. Generally said, actions in one part of the system affect other parts. (Schary et al., 2001)

Mentzer defines a supply chain as a set of three or more companies directly linked by one or more of the upstream and downstream flows of products, services, finances and information. To be supply-chain oriented means that the company consciously develops the strategic system approach to enhance the processes and activities involved in

managing the various flows in a supply chain. Supply management can envisage almost all of the company's main functions, or at least those functions like sale, marketing, R&D and forecasting which can be handled within a supply chain context. To sum up, SCM means a systemic coordination of the traditional business functions within a particular company and across businesses with the chain. (Mentzer, John T. 2001)

“Innovative supply chain management structures are rapidly emerging. These incorporate expanded access to “e-sources” of supply, which use web-based exchanges and hubs, interactive trading mechanisms and advanced optimization, and matching algorithms to link customers with suppliers for individual transactions”. (Agarwal et al., 2001)

Many industries have embarked on reengineering efforts to improve the efficiency of their supply chains. The goal of these programs is to better match supply with demand so as to reduce the costs of inventory and stock outs, where potential savings can be enormous. One key initiative is information sharing between partners in a supply chain. Sharing sales information has been viewed as a major strategy to counter the so-called “bullwhip effect”, which is essentially the phenomenon of demand variability amplification along a supply chain. It can create problems for suppliers, such as grossly inaccurate demand forecasts, low capacity utilization, excessive inventory, and poor customer service. (Lee et al., 2000)

The result for many companies is an expanded role of global sourcing of supply, and global reach in the search for customers. This, in turn, signifies an increasingly important role for liner shipping companies in making supply chains more efficient.

## **2.9 Logistics in Transocean Transport**

Trade and transport operations invariably involve numerous partners both in the public and the private sector, such as banking and insurance agents, in addition to various logistics service providers. Likewise, the trading partners (buyers and sellers or consignors and consignees) evaluate the practicalities often on a case by-case basis.

The number of business parties, logistics providers and officials taking part in a Transocean transport for each individual shipment is very large. Thus, it is very difficult to control the overall information flow along the route. In order to stay competitive in the global logistics markets, practically all major liner shipping operators now offer extensive door-to door tracking and tracing services (see, e.g., Heaver and the websites of Maersk, Sea land, P&O Nedlloyd and APL). (Heaver, Trevor, 2002)

It is noteworthy that the direct cost (i.e., unit freight) especially in container liner shipping has decreased over the past decades in real terms-and often also in absolute terms-in practically all major routes. At the same time, the average value of goods has increased and the overall attention to logistics has risen. As a consequence, the cost time and the value of transport –related information has surged (see, e.g. Mason-Jones and Towill). (Mason-Jones et.al., 1999)

## **2.10 Intra- Company information Flows**

It is not possible to describe all the possible uses of IT for intra-company information purposes, and many of these intra-company systems integrate with inter-company systems. What we will attempt to do is to describe some of the systems in place and highlight the key issues that are related to these systems. Enterprises Resource Planning (ERP) programs are the foundation for many firms' IT capabilities. Companies like SAP, J.D. Edwards, PeopleSoft, Baan, and Oracle are the major companies in this multi-billion dollar industry. All ERP providers are looking to extend the capabilities of

their products by adding additional functionality to their product. The three major functional areas of ERP are: Manufacturing & Logistics, Finance & Accounting, and Human Resources & Payroll. (Costas TH. G., September 2002)

Jakovljevic identifies some of the key reasons why ERP systems are so popular and are essential to the modern firm. These are Strategic, Tactical and Technical. (Jakovljevic, P.J.2000)

<b>Strategic reasons</b>	<ul style="list-style-type: none"> <li>- Enable new business strategies</li> <li>- Enable globalization</li> <li>- Enable growth strategies</li> <li>- Extend supply/demand chain</li> <li>- Increase customer responsiveness</li> </ul>
<b>Tactical reasons</b>	<ul style="list-style-type: none"> <li>- Reduce cost-improve productivity</li> <li>- Increase flexibility</li> <li>- Integrate business process</li> <li>- Integrate acquisitions</li> <li>- Standardize business processes</li> <li>- Improve quality and visibility of information</li> <li>- Enhance technology infrastructure to handle the immense amount of data.</li> </ul>
<b>Technical reasons</b>	<ul style="list-style-type: none"> <li>-Standardize system platform</li> <li>- Improve quality and visibility of information</li> <li>- Enhance technology infrastructure to handle the immense amount of data.</li> </ul>

Table: 2.1 Strategic, Tactical & Technical Key Reasons for (ERP) Systems

Programs that “plug-in” to ERP systems are gaining popularity, as enhanced functionality not offered by the base ERP system is required to gain competitive advantage.

## 2.11 Organization Critical Factors

According to Johansson et al., viewpoints, any company should concentrate on improving the product quality and/or service, and at the same time reducing the cycle time and cost to the customer.

They are categorized and subsequently explained as follows:

### 1. Service

Better service will get more margin and greater market share. Experience shows superior service deriving high customer satisfaction. Five initially important factors are summed to measure this aspect:

Providing diversity of value-added services : Creating significantly added value for customers and providing different services for different customers are critical issues in logistics industry. It may be a business strategy or tactic to provide diversity services for serving a heterogeneous customer base.

Availability: Each element of the logistics services will benefit from the widespread adoption of any service availability via phone call, e-mail, web, and internet etc. Immediately availability of services will provide customers with gaining their needs and understanding. Reliability: It means the ability of a logistics service system to perform its functions in routine circumstances, as well as hostile or unexpected circumstances. The reliability in Shipping Lines especially emerged from the precise degree in the functions of storage, distribution, delivery, and consignment.

Adequacy of physical facilities and equipment: providing adequate physical facilities and equipment, e.g. handling equipment, storage areas, containers and chassis etc., plays an important role in complex market designed to meet rigorous market demands.

Increasing marketing channel and network: The numbers of service node and channel, and marketing network can provide more convenient service for customers.

## **2. Quality**

Consumers may focus on the specification quality of a product, and they will compare with competitors in the marketplace. The conformance quality provided by the Shipping Lines might be accepted by customers. The degree to which product should produce correctly means; the movements of goods safely, economically, and quickly from one location to another in this industry. Five initially important factors are summed to measure this aspect. (Ding, J., 2010)

**Improving customer satisfaction :** Experience shows customer satisfaction is the most important factor influencing customer quality to achieve customer retention and customer loyalty. Satisfying customer needs is greatly vital for obtaining customers acquisition to eventually gain profitability.

**Safety:** It is the state of being safe when logistics activities are processed in the logistics center or warehouse. Controlling the safety means high quality and low risk in handling shipments.

**Accuracy and precision of shipments:** Accuracy is the degree of veracity while precision is the degree of reproducibility. Both of them are important. Providing right accuracy and precision of shipments makes customer quality in high level to carry out.

**Skills and knowledge of operating personnel:** All involved activities that make for the functionality to work well need good human resources to have an effective organization. All personnel with superior skills and knowledge will make the logistics operations more facile.

**Capability of total quality service and integrated process management:** does the service quality deliver the value to customers? Capabilities of total quality service provided by Shipping Lines will meet the customers' satisfaction. Developing a customer service network is very important. Of course, providing total quality service usually needs the support from top managing layer. Subsequently, all shipments in warehouse to process logistics activities smoothly rely on having possession of capability of integrated process management. It makes logistics operations more fluent. Therefore, these two capabilities are possessed by the Shipping Lines. Customer quality will be satisfied later. (Ding, J., 2010)

### 3. Cost

In accounting, costs are the monetary value of expenditures for supplies, services, labor, products, equipment and other items purchased for use by a business. In economic terms, cost often means opportunity cost. Whatever fields, reducing cost is usually a common opinion and idea due to a firm that can make a cheaper price. Hence, diminishing total



logistics costs to customers can raise the value and benefits for customer. Three initially important factors are summed to measure this aspect:

**Providing reasonableness of price:** Usually, the price includes a mark up for profit over the cost of the services. Price comparison between competitors is often affected by the customer in terms of evaluating the selection of Shipping Lines. Even price was uppermost as a critical impress on the purchasing decision; however price now is not a single most important variable of decision.

**Reducing related operating costs of shipments (direct costs):** These kinds of costs usually appear on the core operational activities, e.g. marketing, warehousing and distribution. Operating costs are parts of variable costs, in which they are mostly concentrated by customers. Selecting the best Shipping Lines will be compared with the lower related operating costs of shipments among these competitors. Hence, reducing these kinds of costs can attract customers to buy her services.

**Reducing related overhead, charges and fees (indirect costs) :** Buyers prefer to pay money when they use related services, not pay overhead, surcharges and fees without using services, especially, which customers believe they do not use them. All in one price is willing to customers. Too much related overhead, charges and fees are negative for evaluating the selection of Shipping Lines. (Ding, J., 2010)

#### **4. Time**

Time is money' is especially in evidence in today's globally competitive environment. Consumers in this field are increasingly sensitive to time aspect, while time or speed

is deemed as a source of differentiation for firms. The 'cost of time' is referred to a major influence of selecting Shipping Lines where the importance of timing is foremost. Time-based competition has become an argument of main stream among the growth of time-sensitive logistics market. Four initially important factors are summed to measure this aspect thus:

**Reducing lead time of core logistics services:** Reducing the lead time can be achieved by shortening the logistics operation time (that is the time taken to complete the main core operational services from marketing, warehousing to distribution).

**Implementing integrated logistics information system:** The applications highlight an aiding a number of information technology (IT) and information system (IS), e.g. radio frequency identification (RFID), electronic data interchange (EDI), decision support system information system, the less opportunity on human error, and eventually reducing the operating time.

**Quick responsiveness:** The responsiveness of service should have a standard to show the service is available any time per day; it is possible that on occasion it may be unavailable for very short time periods to permit maintenance or other development activity to take place. A quick and efficient responsiveness system service will reduce the complaint to arise. (Ding, J., 2010)

## **5. Information Technology in Shipping Industry**

Shipping has been the cornerstone of transportation from the very beginning of human civilization, especially in Middle East countries which are surrounded by water and most transportation jobs are done through the sea. But the present business environment poses

many challenges for the shipping industry, which, if not addressed by using the right solutions, can make a difficult situation worse. Fluctuating demand, unstable revenues and increasing costs means bad times for the shipping industry in the whole world. The present trend of upstream and downstream consolidation, capacity/space utilization and increasing automation needs to be carefully evaluated.

The Ports and Shipping Industry are characterized by globalization of trade, services and manufacturing activity. Globalization has brought in the need for global networks and has prompted shipping companies into mergers, acquisitions, alliances and consolidation regardless of their location. It has also impelled the development of value added services and producing large capacity ships to achieve economies of scale.

Information technology can play a pivotal role in bringing exciting times back for the shipping industry. The adoption of information technology can give organizations operational agility, providing seamless information integration in addition to considerable cost savings. As a result, while their customers can enjoy the convenience and functionality offered by e-commerce, shipping companies are able to communicate better with their extended organizational network. (Costas TH. G., September 2002)

## **2.12 Maritime Industry in Jordan**

### **2.12.1 Introduction**

Jordan's port and maritime transport industry has been changing rapidly as a result of initiatives by the Government of Jordan (JOR) to set up decentralized structures and reform institutional and regulatory policies and practices, and by maritime and port organisations to improve customer service, safety, asset quality and commercial performance. The outcomes from these changes have been significant in many of these areas but further institutional and regulatory reform is required to enable the industry to meet its full potential.

### **2.12.2 Industry Structure**

The Government of Jordan (GOJ) has decided to organise the transport sector based on a separation between policy, operational, and regulatory functions. This sets out a clear policy orientation towards pursuing market-oriented policies in the transport sector as specified in the National Agenda of the GOJ (2006-1015), the MOT law (2003 as amended), the national transport strategy -NTS- (2009-2011), and many other official reports and documents. This section identifies the main entities, both in the public and private sectors, in charge of policy, operation, and regulation of the sector, and examines the nature and scope of their activities.

### **2.12.3 Policy and Regulations**

Maritime policy is an integral part of the overall economic policy of a country. From a public policy perspective, the maritime sector is seen as an economic catalyst where the aggregation of shipping, port and other maritime activities generates benefits and socio-

economic wealth. Maritime policy decision makers are public authorities in charge of outlining policy and strategic orientations about the current and future role the port and maritime transport sector, can play setting the necessary measures that are needed in order to support this role, and monitoring the implementation and execution of these measures.

Equally key to maritime policy is the extent to which governments and public entities are involved in the process of planning, development and regulation. Regulators are public authorities empowered by legislation to licence and monitor the sector's operators and regulate their activities with regards to labour, safety, security, and environmental sustainability (technical regulation). They are also in charge of monitoring competition and rivalry against market failures, regulating the negotiation of public-private partnership (PPP) contracts and concessions, including prescribing the terms and conditions for pricing and performance targets, and arbitrating disputes that may occur during and after negotiations (economic regulation). (Bichou, 2011)

In terms of policy and regulatory institutions, four main public entities can be identified:

**a- Ministry of Transport (MOT)**

The MOT is the entity in charge with the elaboration of transport policies and the monitoring of their implementation; while the provision, operations and management of transport services and related activities are or should be carried out by independent, mostly private sector, enterprises. In a similar vein, the regulation of the transport sector is conferred to independent regulatory bodies that have been specifically established for this purpose.

**b- Aqaba Special Economic Zone Authority (ASEZA)**

This is the statutory institution responsible for the management, regulation, and the development of the Aqaba Special Economic Zone (ASEZ), an area of approximately 650 km that includes the city of Aqaba and encompasses Jordan's entire coastline.

**c- Jordan Maritime Authority (JMA)**

JMA was created in 2002 by a Royal Decree to execute the MOT policy, and to control and monitor maritime activities in conformity with the GOJ and AZESA laws in force. In particular, the JMA is in charge of ratification and follow-up of international conventions, ship registration and certification, flag and port state control, the monitoring of coastal and in-port navigation, the investigation of maritime accidents, the accreditation and issuance of statutory certificates for seafarers and marine personnel, and the licensing of service companies located outside the borders of ASEZ, otherwise the ASEZA performs this function in coordination with the JMA.

**d- Aqaba Development Corporation (ADC)**

ADC was created in 2005 as the investment arm of AZESA and has since then acted as the port landlord and infrastructure owner. Since then, ADC has entered into a number of public-private partnership (PPP) and concession arrangements with private entities for the development, operations and management of ASEZ infrastructures, including port and marine facilities. (Bichou, 2011)

#### **2.12.4 Operations and Services**

##### **a- Maritime Transport**

The maritime transport sector is primarily concerned with the transport of freight and passengers by sea. The sector is associated with a diverse range of other activities, primary or ancillary, such as ship design and classification, shipbuilding and repair, shipping agency, chartering and broking, multimodal transport, and a range of associated shipping services.

##### **b- Shipping**

According to the figures obtained from the Jordan Maritime Authority, there are 30 commercial ships registered under the Jordanian flag mainly small-to-medium passenger, general cargo, and dry bulk ships as well as tugboats. The average age of the Jordanian fleet is well above international standards of 10 years for passenger ships, 16.5 years for bulk carriers, 17 years for oil tankers, and 24 years for general cargo ships.

##### **c- Shipping intermediaries**

A key feature in shipping and port markets is the use of *intermediaries* either between carriers or between carriers and shippers. Depending on the services they provide, intermediaries may be called freight forwarders, ship agents, shipbrokers, multimodal transport operators (MTO), non-vessel operating common carriers (NVOCC), etc. (Bichou, 2011)

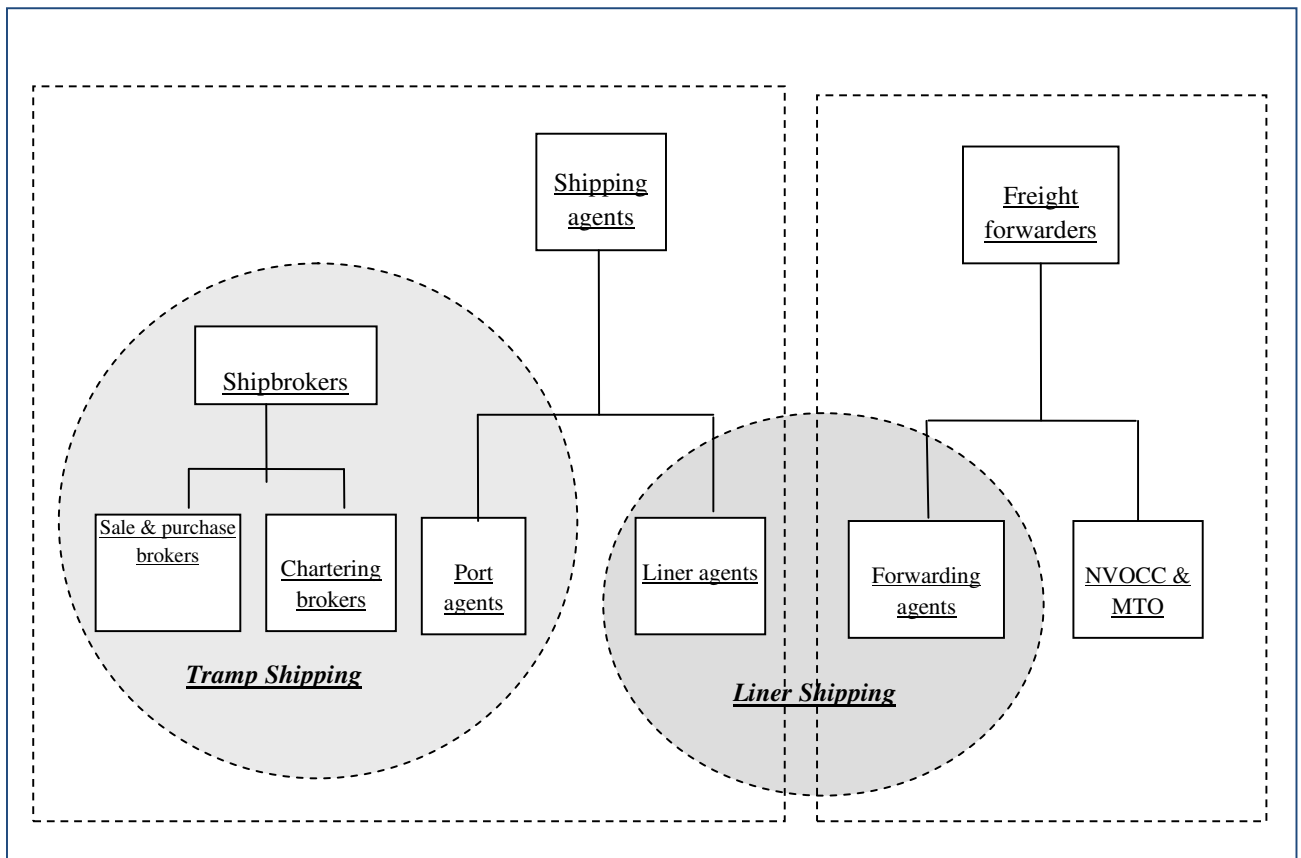


Figure 2.3: Main agents and intermediaries in international shipping (Bichou, 2009)

### 2.12.5 Ports

According to the United Nations conference on Trade and Development (UNCTAD), port activities can be divided into services to ships and services to cargo. Services to ships include conservancy and protection, pilot age and towage, berthing and tie-up, and bunkering and supply. Services to cargo include stevedoring and cargo handling, quay transfer operations, and storage and stacking. Ancillary services in ports include a range of value added logistics activities such as cargo processing and distribution, information processing, estate and rental services, repair and maintenance services. (Bichou, 2011)



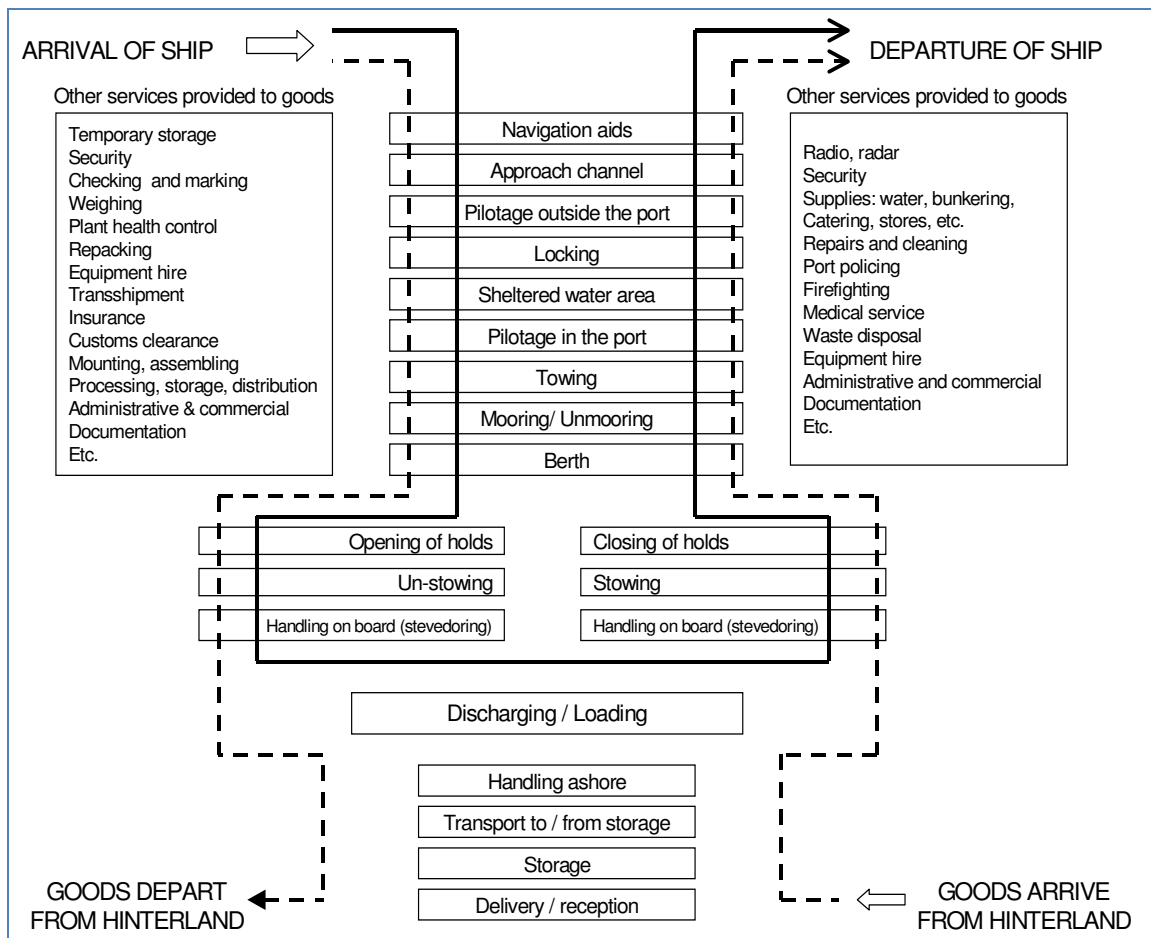


Figure 2.4: Main operational and administrative functions of a port (source: UNCTAD)

#### a- Stevedores and Terminal operators

Under this heading are grouped a series of providers of interface services between ships and port infrastructure. Four operators can be identified under this category:

- Aqaba Container Terminal (ACT)
- Aqaba Port Corporation (APC)
- Jordan Phosphate Mines Company (JPMC)
- Jordan Cement Factories Company (JCFC)
-

### **b- Other Logistics Service Providers**

This category includes a range of value added services such as storage and warehousing, consolidation and break bulk, processing and distribution, and information processing. There are several entities that provide a range of freight and logistics services to the maritime and ports industry and its customers. Two logistics facilities are worth mentioning since both are business units of ADC: the Aqaba Logistics Village (ALV) providing CFS (container freight station) and logistics services under a 25-year BOT contract, and the marshalling yards (4 in totals) linking and regulating the traffic flow from and to ACT and the Main Ports. (Bichou, 2011)

## **2.13 Institutional Performance and Governance**

Maritime transport and port systems are broad, complex, and very dissimilar in their assets, roles and functions, and even within a single system or component, the services that are, or could be, performed are very broad in scope and nature that it would be almost impossible to provide an exhaustive list of them. Institutional dissimilarity also hinders a comprehensive approach to marine transport and port systems, as there exist several organizational and institutional structures even for entities performing similar roles and functions.

### **2.13.1 Governance Performance**

Since many segments of the maritime transport and port sector are public goods, maritime policy becomes an integral part of the country's general economic, trade and social policy. Generally, port policy is formulated based on two understandings: (i) the role of shipping and ports in the development of the country and (ii) the set of policy

measures that are needed in order to support and further promote this role. It is these measures that constitute the components of a maritime policy.

**a- Technical Regulation**

A major issue of policy and regulatory intervention in shipping and ports is maritime and port safety, security, labour regulation, and environmental sustainability. Examples of regulated activities in shipping and ports include, but are not limited to, flag state control, port state control, harbour and traffic management, hazardous materials' (HAZMAT) handling and storage, maritime and port safety, shipping and port security, environmental protection and sustainability, health and occupational safety, etc.

Several regulatory standards have been developed to ensure the safety, security, and environmental sustainability of ports and port operations. Many of these regulations are set by international organizations such as the IMO and the ILO. The GOJ and the MOT are yet to ratify and properly implement some important maritime regulations.

**b- Economic Regulation**

A central tenet of modern maritime and port policy is to ensure effective competition between and within port and shipping operators and service providers so as to provide users with real choice. While modern maritime management in which commercial investment, whether private or public, drives port development in becoming the norm across many ports and terminals in the world, the regulatory intervention from Governments and other public authorities should aim at remedying potential or demonstrable market failures and other hindrances to the wider economic, social, safety,

and environmental objectives. Market regulation may also include such aspects as market access, mergers and acquisitions, concessions and private sector participation, tariffs and pricing, incentives and subsidy programmes, and efficiency and yardstick benchmarking. In the sections below, the key themes in economic regulation and analyses the experience of Jordan particularly with regards the process and outcome of private sector participation in the port of Aqaba. (Bichou, 2011)

### **2.13.2 Maritime System**

In attempt to structure and organize the maritime transport and port sector, several countries in the world have developed formalized *maritime systems* that reflect their strategic priorities and policy orientations, and these may be targeted at specific segments of the maritime industry or extended to sectors and industries outside the maritime spectrum. For instance, the US marine transport system (MTS) is comprised of five main components: waterways, ports, intermodal connections, vessels and vehicles, and system users; while Japan's maritime industrial development and energy system (MIDAES) links the country's maritime sector with the wider industrial and energy sectors.

A *maritime system* is a set of organizations, firms and industries that operate within or across the maritime and port sectors and are systematically linked, both among themselves and with the outside environment, through vertical and horizontal relationships. In Jordan, there is no formalized maritime system that defines, categorizes, organizes, and integrates maritime activities according to strategic, sectoral, spatial, or any other relevant attributes.

### **2.13.3 Maritime Policy Statements and Long-Term Strategic Objectives**

The review of NTS in the maritime sector shows a great deal of fuzziness and randomness in the way strategies are defined, formulated, selected and prioritized. This is partly due to the weak interplay between the functional and institutional role of MOT within the national maritime system; this in turn features a high degree of conflict and overlap between missions, institutions and functions. Other issues relate to the capabilities of MOT in formulating a proper maritime strategy given the evident lack in human and financial resources. (Bichou, 2011)

## **2.14 Previous Research:**

### **A- Arabic Studies:**

#### **Study (Aichaoui, 2006) entitled "Total Quality Management (TQM) in Service Institutions,"**

The study aimed at, the application of TQM in service sector calls for greater attention by researchers regarding efforts towards improving the quality, with particular focus on analysis service, properties and adjusting the quality standards appropriate to the nature of these characteristics. It adopted theoretical and analytical methods through points, the most important of which are related to notable competitiveness and quality management.

The study emphasized the need to adopt quality management technical service institutions overall as a sophisticated management style rather than traditional methods for access to continuous improvement in all levels of institution activities.

The study also showed that service quality has a direct impact on the profitability of the service institutions, its competitive position and market share.

#### **Study (Al-‘Itoom, 2009) entitled "The Organization's Mission Impact on Achieving Competitive Advantage: Applied Study on Jordanian Pharmaceutical Industry".**

The research aimed at shedding light on the reality of the pharmaceutical industry in Jordan, and what impact the mission of the organization has on achieving a competitive advantage. The overall study population consisted of 5 Public contributed Jordanian pharmaceutical companies, while the study sample consisted of management personnel in these companies. The results showed that there is an impact of organization mission in achieving competitive advantage in Jordanian pharmaceutical companies.

The study recommended that the pharmaceutical company must review its organizational mission so that it includes all or some of the effectual elements such Quality, Research & Development, Human Resources Development and Customer Care. It also recommended building a solid company culture by instilling the concept of the company mission, which will support organizational strategies and facilitate the accomplishment of the companies' established goals and objectives.

#### **B- Foreign Studies:**

##### **Study (Guihai Wang and Jay Yang 2000) entitled "Business Development Strategy and Australian Construction Industry."**

Heading toward the 21st century, the researcher aimed to highlight that the companies have to face new challenges caused by globalization, advances in technology and changes in the structure of the Australian economy. The study conducted on the Australian construction industry with 138,000 either small or large businesses active in the industry. This paper first briefly introduces the changes in the general environment that have effect on the construction industry; then using the model proposed by Porter (1980), the five competitive forces in the Australian construction companies are analyzed.

In order to survive and grow, the managers should always pay much attention to the environment, either general or task, to identify the opportunities and threats; finally the research proposes some business strategies that may be suitable for the Australian construction companies to grow, either in the international or national arena. Of these strategies, strategic alliance is highlighted.

**Study (Ghemawat, 2002) entitled "Competition and Business Strategy in Historical Perspective".**

The study aimed at focusing on the way the thought development of business strategy is affected by business thinking. It also sought to show a number of key issues for its application of strategy thinking in business strategy. It was applied on three Harvard Business colleges and on two consulting companies in order to follow their historical development and disseminate competition theories and business strategy.

It emphasized the importance of adopting business strategy by the market and its impact on future development in this field. It also emphasized the role played by competitive forces in determining marketing results. It showed the much exaggerated concern of the economists in business strategy and their effort to develop it in a durable way.

**Study (T. C. E. Cheng\* and Petrus W.C. 2005) entitled "Measuring Success Factors of Quality Management in the Shipping Industry".**

This study seeks to identify the factors that are critical to successful quality management, and attempts to develop a reliable, empirically-tested, and rigorously-validated measurement instrument for quality management, for the shipping industry.

The researchers conducted a large-scale survey of shipping industry executives and applied a rigorous research methodology to treat the survey data. This organizational-level study is based on empirical data collected through a questionnaire survey administered to shipping industry executives. We invited respondents to participate in our survey by randomly sampling ship owner members of the world's two major international maritime associations, namely the Baltic and International Maritime Council (BIMCO), and the International Association of Independent Tanker Owners (INTERTANKO).



The researchers identified four success factors of quality management, which are top management commitment and participation, quality information and performance measurement, employee training and empowerment, and customer focus, and developed a functional instrument to measure quality management in the shipping industry. This paper contributes to research by identifying the success factors of quality management, and provides managerial insights on the successful management of quality in the shipping industry.

**Study (Lagoudis et al 2006) entitled “The Competitive Advantage in the Greek Shipping Industry”**

In this study, authors intend to further existing literature by examining the importance of four factors on the competitive strategies of Greek shipping companies, namely cost, quality standards, service level and time. The analysis is based on the Johansson, McHugh, Pendle Bury, and Wheeler (1993) model, where the combination of quality, service, cost and time are considered determining the value a company creates regardless of the industry it operates in. A survey was conducted on a sample of Greek shipping companies’ in order to examine and evaluate the importance of Johansson , et al., key metrics to the shipping industry. The results of this survey corroborate the results of similar surveys in international literature revealing the importance of cost for the success of shipping companies. They also validate findings in supply chain management literature where quality and time are considered as “qualifiers” and cost and service as “winner” criteria. Nevertheless, differences exist when filtering takes place in terms of company size, operating sector strategies (i.e. operating in a single or more than one sector) and dominant philosophy related to the application of supply chain strategies.

**Study (Kaptanoglu, et al., 2007) entitled “Developing Competitive Advantage Through Cooperative Decision Making in Shipping Family Businesses”**

This paper aimed to highlight competitive advantage through co-operative decision making in family shipping businesses during the last three generations. The samples of companies were presented in the survey. The researcher developed a matrix of shipping companies in Turkey showing sizes of different types of shipping companies vs. generation. This could identify a particular course of action for making a company to long term plan, hence helping it to develop a competitive advantage.

The study concluded that, the following generations often tend to be caretakers, and not paying sufficient attention to “innovation” within their business, their industry and in their market place. One of the contributing factors is why so many family businesses fail to transition into being generational family businesses.

It is argued that effective and efficient use of the human resources and involvement of the whole organization in the decision making process are vital if a company is to remain solvent and develop a competitive edge.

**Study (Zhou & Wu, 2009) entitled "Technological Capability, Strategic Flexibility, and Product Innovation".**

This paper examines the role of technological capability in product innovation. Building on the absorptive capacity perspective and organizational inertia theory, the authors propose that technological capability has curvilinear and differential effects on exploitative and explorative innovations.

To test the hypotheses, researchers examine firms operating in high-technology sectors such as electronics, information technology, and telecommunication in China. Five in-

depth interviews conducted with senior managers and completeness of the questionnaire items, then conducted a pilot study with 20 senior managers with titles such as chief executive officer (CEO), vice president, and general manager, and selected a random sample of 500 firms from a list of high-technology companies located in Shanghai and its surrounding areas.

The findings support the proposition that though technological capability fosters exploitation at an accelerating rate, it has an inverted U-shaped relationship with exploration. That is, a high level of technological capability impedes explorative innovation. Strategic flexibility strengthens the positive effects of technological capability on exploration, such that when strategic flexibility is high, greater technological capability is associated with more explorative innovation.

**Study (V. Kannan et. al 2010) “An evaluation of ocean container carrier selection criteria: an Indian shipper’s perspective”**

The purpose of this study is to assist ocean container carriers in devising effective marketing strategies to attract and retain Indian shippers by letting them understand the list of criteria Indian shippers use in the carrier selection decisions and also the amount of importance they assign to each criterion during such decisions.

Design/methodology/approach - To explore the criteria, review of transportation literature, customer satisfaction survey questionnaires of container carriers and SERVQUAL battery was undertaken. Telephone interviews and focus group interview were also conducted for this purpose. In order to evaluate the criteria, analytic hierarchy process (AHP) was used. In the AHP, the pair wise comparisons were carried out by another focus group with the help of a questionnaire.

Findings - Indian shippers use 45 criteria in the container carrier selection process and out of these, low freight is ranked as the most important criterion and pricing flexibility is the second most important one. In the list, these are the only two criteria found to be with more than 10 per cent importance. The least importance is given to five criteria: gifts and compliments, online booking, physical facilities, professional appearance and trade announcements which are weighed with 0.10 per cent importance. The paper has explored and added several new carrier selection criteria to the existing transportation literature.

Practical implications - The paper enables container carriers to understand various criteria Indian shippers use in the container carrier selection decisions along with their relative importance in such decisions. It also helps container carriers to decide which criterion is to be given priority and which not while devising their marketing strategies for Indian market. This decision is vital to maximize shippers' satisfaction.

**Study (Ding JF 2010) “Critical factors influencing customer value for global Shipping carrier-based logistics service providers using Fuzzy AHP approach”**

The key purpose of this research is to apply Fuzzy analytic hierarchy process (AHP) approach to empirically study the critical factors influencing customer value for global shipping carrier-based logistics service providers based upon the customers' perspective. To facilitate the main issue for obtaining critical factors, the four key value metrics - service, quality, cost, and cycle time - are employed to derive those initially important factors firstly. These factors have been discussed and publicized in academic and management fields and can be summarized as four aspects and seventeen initial factors. Subsequently, the proposed Fuzzy AHP approach is used to measure relative weights for

evaluating these factors. Finally, the systematic appraisal approach is to perform the empirical survey via AHP questionnaires. The results of this study show that: (1) quality is the highest aspect for customer value from the customers' perspective in Taiwan, and the time is the lowest one; and (2) the top four critical factors influencing customer value are reasonableness of price, related direct costs, safety, and customer satisfaction, respectively.

**Study (Aigbokhaevbolo, 2011) entitled "Application of Game Theory to Business Strategy in Undeveloped Countries: A Case for Nigeria."**

The main aim of the study was to examine Game Theory for determination of how a company will compete in a given business and position itself among its competitors. It requires a strategic analysis from empirical evidence, while developed countries use a management science model such as the Game Theory.

In Nigeria and other underdeveloped countries, the determination of business strategies is based on highly subjective approaches which include intuitive anticipatory, opportunistic, formal – structured, incrementing and adaptive.

The research suggested that the model is desirable, if applied, it would no doubt enhance the solving of business decision problems in businesses of undeveloped countries.

It has discussed the concepts and rationale of business strategy and the current approaches adopted by Nigerian and other underdeveloped countries corporate managers in determining business strategy. Also discussed are the concepts and rationale for game theory through hypothetical examples. They have observed that game theory is a good technique for analyzing action of manager's decision when dependent on the decision made by a competitor.

In view of the theoretical usefulness of game theory technique in business management this study therefore recommends the need for integration of game theory with the existing management techniques in organizations in Nigeria to enhance decision making in strategic management.

### **2.15 The Current Research:**

The present study is different from earlier research by focusing on the impact of organizational critical factors on strategic competitive advantage in the maritime transport sector in Jordan. Earlier studies, however, has taken into account the impact of the organizational critical factors in determining the strategic competitive advantage of the organization.

The result of this study is important for determining the most appropriate critical factors in achieving strategic competitive advantage.

The researcher has noticed that earlier studies haven't dealt with Jordan maritime industry concerning competitive advantage and strategy division within the components cost and differentiation in the maritime transport sector in Jordan, which was taken into account in this study.

# **Chapter Three**

## **Method & Procedures**

(3-1): Introduction

(3-2): Methodology of Study

(3-3): Study Population and Sample

(3-4): Study Tools and Data Collection

(3-5): Statistical Treatment

(3-6): Reliability and Validity

### **3.1 Introduction**

In this chapter we will go through the processes of the study, and outline the different methodological approaches we have chosen, and the tools that we have used to gain information about the subject. The study will also explain the data collection method that will be used and how the data will be presented and analyzed. Reliability and validity are considered as well.

The chapter is divided in six parts: Study Methodology, Study Population and Sample, Study Tools and Data Collection, Statistical Treatment, Reliability and Validity.

### **3.2 Research Methodology**

It is important to choose the method that best reflects the objective of the paper. Method is the tool and technique used to obtain and analyze research data, including for example questionnaires, observation, interviews, and statistical and non-statistical techniques. The most common method to collect data is by using a questionnaire with in advance formulated alternatives to answer, in order to collect the necessary data to achieve the main purpose of the study. The researcher collected data through a questionnaire as a primary data which was distributed to Jordan maritime industry. The descriptive research is basically to describe characteristics of a population or a phenomenon. In addition, descriptive studies involve collecting data in order to test hypotheses and answer questions concerning the current status of the subject(s). Typical descriptive studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures. Through the information used in this study with respect to analytical and descriptive methodology, the data will be introduced and analyzed in order to acquire indicators which will be evaluated and interpreted in accordance with this type



of studies. Therefore the researcher chose the analytical descriptive method using an applied manner.

### **3.3 Study Population and Sample**

The population of the study consists of all maritime transport organizations working in Jordan which are estimated to be (150) one hundred fifty organizations. The sample, however, will consist of (Top manager, assistant manager, section manager and line manager) of each organization, (150) questionnaires were distributed as a sample of the study, only (112) questionnaires return, this mean that approximately (75 %) from total distributed questionnaires were processed for analysis.

### **3.4 Study Tools and Data Collection**

This study aims to identifying the critical factors (Cost, Quality, Time and Information Technology (IT)) and measuring the effect of all these factors on strategic competitive advantage in the maritime transport sector in Jordan.

The current study consists of four independent and one dependant variables. Whereas, in the practical side the researcher depend on descriptive and analytical methods using the practical manner to collect, analyze data and test hypotheses. Data collection, manners of analysis and programs used in the current study are based on questionnaire that was designed to reflect the study objectives and questions. Data for the model collected via questionnaire, were in the form of a questionnaire consisting of (50) questions. After conducting a thorough review of the literature frame related with maritime transport organizations, quality, cost, time, IT and strategic competitive advantage, the researcher

formulated the questionnaire instrument for this study depending on characteristics of the maritime transport sector in Jordan.

The questionnaire instrument sections are as follows:

**Demographic Variables:** The demographic information was collected with closed-ended questions, through (8) items.

**Cause and Effect constructs:** This section measured the cause and effect characteristics and dimensions of two main constructs:

**Organization Critical Factors:** measured by four factors with (41) items distributed as follows Quality measured by (10) items, cost measured by (10) items, time measured by (10) items and finally IT measured by (11) items.

**Strategic competitive advantage:** measured by (9) items.

In addition, 5-point Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

### 3.5 Statistical Treatment

Data collected from the responses of the study questionnaires was for the analysis and conclusions of the study. The researcher used the Statistical Package for the Social Sciences SPSS. Finally, the researcher used the suitable Statistical methods that consist of:

- Cronbach's Alpha ( $\alpha$ ) to test Reliability.
- Percentage and Frequency.
- Arithmetic Mean and Standard Deviation to answer the study questions.
- Multiple Regression and variance inflection factor between study variables.
- Multiple Regression analysis to test the four hypotheses , with (F) test statistic from ANOVA Table and t test statistic to inference the significance to both estimated regression and its coefficient which mean the effect of Organization Critical Factors (OCF) on Strategic Competitive Advantage (SCA).
- Relative importance, that assigning due to:

$$\text{Level of Importance} = \frac{\text{Upper limit of response} - \text{Lower limit of response}}{\text{Number of Levels}}$$

Three levels identified, High, Mid and Low. Table (3-1) illustrates the range of important level scale

**Table (3.1)**

Range of Level of Importance Scale

Mean Range	level
Less than or equal 2.33	Low
More than 2.33 to 3.66	Mid
More than 3.66	High

### 3.6 Reliability and Validity

#### A) Validation

To test the questionnaire for clarity and to provide a coherent research questionnaire, a macro review covering all the research constructs was accurately performed by academic reviewers-from Jordanian universities - specialized in Business management, Total Quality Management; Production and Operation Management, and Statistical science. Some items were added based on their valuable recommendations. Some others was reformulated to become more accurate which is expected therefore to enhance the research instrument. The academic reviewers were seven in total. (see appendix “1”).

#### B) Study Tool Reliability

The reliability analysis applied the level of Cronbach's Alpha ( $\alpha$ ) as the criteria of internal consistency, which were at a minimum acceptable level (**Alpha  $\geq$  0.60**) suggested by (Sekaran, 2003). The coefficients were calculated after removing some items from each construct as shown in Table (3 - 2).

**Table (3.2)**

Cronbach's Alpha ( $\alpha$ ) Coefficients for Main Constructs and dimensions

<i>No.</i>	<i>Dimension</i>	<i>Number Of Items</i>	<i>Coefficient</i>
<b>1</b>	<b>Quality</b>	<b>10</b>	<b>.681</b>
<b>2</b>	<b>Cost</b>	<b>10</b>	<b>.777</b>
<b>3</b>	<b>Time</b>	<b>10</b>	<b>.704</b>
<b>4</b>	<b>I.T</b>	<b>11</b>	<b>.780</b>
<b>Organization Critical Factors</b>		<b>41</b>	<b>.886</b>
<b>Strategic Competitive Advantage</b>		<b>9</b>	<b>.791</b>
<b>All ITEMS</b>		<b>50</b>	<b>0.906</b>

The Cronbach's Alpha coefficient of main variables "Organization Critical Factors" including (41) items as a scale to it was (88.6 %), while for Strategic Competitive Advantage including (9) items was (79.1%).

Quality, Cost, Time, I.T had a (68.1%), (77.7%), (70.4%) and (78.0%) respectively.

Finally the overall Cronbach's alpha coefficient was equal to (90.6 %). These results are within an acceptable level suggested by (Sekaran, 2003).

## **Chapter Four**

### **Analysis Results & Hypotheses Test**

(4.1): Introduction

(4.2): Study Questions' Answers

(4.3): Study Hypotheses Testing

## **4.1 Introduction**

According to the research purpose and research framework presented in previous chapter, this chapter describes the results of the distribution of responses for each demographic variable , statistical analysis of the data collection for research question and research hypothesis.

The data analysis included a description of the means and standard deviations, ranking and level of importance for study questions, multiple regression analysis to test the four hypotheses. Finally, the testing of independent variables on dependent variable when they are in the same model.

## **4.2 Study Questions' Answers**

### **A. Demographic Variables of Sample**

Eight demographic variables were included in this study (*gender*, age, educational level, job title, total work experience (years), company's industry categories, Company current employee number and Company's OWNERSHIP. The results in Table (4 – 1) shows the distribution of sample individuals according to demographic variables:

**Table (4.1)**

Distribution of the Sample according to demographic variables (N = 112)

<b>No.</b>	<b>Variable</b>	<b>Class</b>	<b>Frequency</b>	<b>Percentage</b>
<b>1</b>	<b>Gender</b>	Male	101	90.2
		Female	11	9.8
<b>2</b>	<b>Age</b>	20 - 25 years	7	6.3
		26 - 30 years	19	17.0
		31 - 35 years	24	21.4
		36 - 40 years	27	24.1
		41 years and More	35	31.3
<b>3</b>	<b>Educational Level</b>	Secondary School or less	2	1.8
		College Diploma	7	6.3
		BS.C	68	60.7
		Master	28	25.0
		PhD	7	6.3
<b>4</b>	<b>Job Title</b>	General Manager	22	19.6
		Assistant General Manager	20	17.9
		Head Officer	24	21.4
		Head Department	26	23.2
		Other	20	17.9
<b>5</b>	<b>Total Work Experience (years)</b>	1 - 5 years	15	13.4
		1 - 10 years	33	29.5
		11 - 15 years	29	25.9
		More than 15 years	35	31.3
<b>6</b>	<b>Company's INDUSTRY Categories</b>	Operation	32	28.6
		Owner	13	11.6
		Agency	30	26.8
		Broker	12	10.7
		Logistics	23	20.5
		Other	2	1.8
<b>7</b>	<b>Company current employees number</b>	1 – 10 employees	49	43.8
		11 – 30 employees	52	46.4
		From 31 employee and More	11	9.8
<b>8</b>	<b>Company's OWNERSHIP</b>	Public	18	16.1
		Public Limited	73	65.2
		Other	21	18.7

Results in Table (4.1) indicate to the following outputs:



***Gender:***

- The highest percentage was of sample was "Males" (90.2%) while (9.8%) was "Females".

***Age:***

- The highest number of respondents was (35) or (31.3%) were in the age group "41 years or More", while the lowest was (7 %) in the age group "20 - 25 years old".

***Educational Level:***

- The highest percentage (60.7%) of respondents hold a "BS.C", while (1.8 %) hold a "Secondary School Certificate or less" from the total number respondents.

***Job Title:***

- The largest percentage was (23.2%) of respondents those working "Head Department" while the lowest percentage (17.9 %) was to respondents whose working "Assistant General Manager".

***Total Work Experience (years)***

- (31.3 %) of respondents fell in the experience bracket in "More than 15 years" while (13.4 %) fell in the one "1 - 5 years".

***Company's INDUSTRY Categories***

- The largest percentage was (26.8%) for respondents working in "Agency" category while the lowest percentage (10.7 %) was those working in "Broker" category.

***Company currently employee number***

- (52) Companies have "From 11 to 30" employees with percentage (64.4%) while the lowest percentage (9.8 %) was to companies which have "31 and more employees".

***Company's OWNERSHIP***

- (73) respondents (65.2%) answered that they works in "Public Limited", while (18) individuals responded that they works in "Public"

## B. Descriptive Variables

This section illustrates the descriptive statistics for main dimensions and their construct as Mean and standard deviation, also the same measures of the item which follow each of them and the rank beside the level of importance.

### First: Organization Critical Factors

A main dimension organization critical factor (OCF) was measured by (4) factors with (41) items as follows:

#### 1. Quality :

Factor quality was measured by (10) items. The descriptive statistics of “Quality” items are shown in Table (4.2).

**Table (4.2):** Descriptive statistics of Quality

Item	Statement	Mean	S.D	Rank	Level of Importance
1	The organization satisfying the customer is one of the most important factors that affect the service quality of service provided to customers	4.5268	.65705	5	High
2	The organization meeting the diverse needs of customers is vital for customer loyalty.	4.5714	.56496	4	High
3	The organization exact dealing with the logistics activities in the logistics center or warehouses mean high quality of services provided.	4.4107	.69170	8	High
4	Highly accurate implementation of the cargo leads to high value for the customers.	4.6607	.52938	2	High
5	All joint activities that make the functions work well in need of qualified human resources.	4.5714	.59600	4	High
6	The organization providing employees having the knowledge and skill will make the transport and supply operation safe.	4.5982	.56088	3	High
7	Providing the adequate physical facilities plays an important role in the complex market to gain access to the market requirements	4.3571	.70847	9	High

8	Credibility in the contracts implementation helps to increase the quality of service provided.	4.6964	.53422	1	High
9	The organization's commitment to safety standards means a few risks to the goods and the organization.	4.4911	.62954	7	High
10	The outstanding performance in the implementation of contracts helps to increase the competitive advantage of the organization.	4.5179	.55316	6	High
<b>Grand Mean &amp; Standard Deviation of Quality</b>		<b>4.5402</b>	<b>.30799</b>		<b>High</b>

From Table (4.2) the "Quality" had "High" level importance with a mean of (4.5402) and standard deviation of (.30799), all its items had a "High" level of importance, the highest mean of its items was (4.6964) with standard deviation (.53422) to " Credibility in the contracts implementation helps to increase the quality of service provided. "it was in the first rank when compared with others items , the smallest mean (4.3571) belong to statement" Providing the adequate physical facilities plays an important role in the complex market to gain access to the market requirements " with standard deviation of (.70847) and in the ( 9<sup>th</sup> ) rank.

## 2. Cost

Factor quality was measured by (10) items .The descriptive statistics of "Cost" items is shown in Table (4-3).

**Table (4.3):** Descriptive statistics of Cost

Item	Statement	Mean	S.D	Rank	Level of Importance
11	Buyer prefers to pay for the service costs and direct labor and direct service-related	4.1607	.80038	7	High
12	Choosing the best shipping companies is done through comparing the low operating costs related to shipments among the competitors	4.1250	.90170	9	High
13	Work to reduce freight helps to create a competitive advantage and choose the shipping companies	4.3304	.73996	3	High
14	Working to reduce operating costs helps to attract customers to buy the company's services.	4.1696	.86876	6	High
15	An increase in unjustified expenses and fees negatively affect the Organization's services selection.	4.3393	.72972	2	High
16	The customer is not in favor of paying additional wages, especially if he thinks that these wages are for additional services he does not used.	4.4107	.60855	1	High
17	Comparing prices between competitors is often influenced by the consumer in the evaluating and selecting of the appropriate company for services.	4.2589	.76812	5	High
18	Although the price is considered as one of the most important factors in the decision to buy the service but it is now no longer the only important factor in the decision to purchase the service	4.3036	.81472	4	High
19	Reducing the cost of insurance by working to provide the necessities helps to create a competitive advantage.	3.9911	.95385	10	High
20	Reduce the cost handling (loading and unloading) helps to create a competitive advantage.	4.1518	.74989	8	High
<b>Grand Mean &amp; Standard Deviation of Cost</b>		<b>4.2241</b>	<b>.46056</b>		<b>High</b>

### 3. Time

Factor time was measured by (10) items. The descriptive statistics of "Time" items in Table (4-4).

**Table (4.4):** Descriptive statistics of Time

Item	Statement	Mean	S.D	Rank	Level of Importance
21	The organization works to reduce the time period for the delivery of the goods which can be achieved by reducing the time of the logistics process.	4.3304	.76392	6	High
22	The organization works to reduce the period of time in providing service and that is by eliminating activities that do not lead to added value.	4.1964	.66900	8	High
23	Reducing the time is achieved through a greater understanding of the activities of the logistics group activities.	4.3929	.63469	4	High
24	Service responding should have a standard to show the availability of the Service at any time.	4.3036	.64150	7	High
25	The lack of service for short periods of time for maintenance or any other activities does not affect the service delivery on time.	3.8750	1.0749	9	High
26	Organization providing a system in response to effective service helps reduce the time required to provide the service.	4.3750	.61695	5	High
27	Reducing the shipping line for the time period between flights helps to increase the competitive advantage.	4.5000	.64375	2	High
28	Reducing the amount of time to deliver the cargo helps to increase the competitive advantage of the line navigation.	4.4911	.60023	3	High
29	The competition of organizations in providing services on the basis of time is one of the important factors leading to the growth of the time sensitivity in providing them.	4.4911	.56942	3	High
30	The shipping and delivering of the goods by the organization helps to increase the competitive advantage.	4.6696	.50917	1	High
<b>Grand Mean &amp; Standard Deviation of Time</b>		<b>4.3625</b>	<b>.35946</b>		<b>High</b>

From Table (4-4) the "Time" had "High" level importance with mean (4.3625) and standard deviation (.35946), all its items had a "High" level of importance, the highest mean of its items was (4.6696) with standard deviation (.50917) to "The shipping and delivering of the goods by the organization helps to increase the competitive advantage." this made it take the first rank when compared with others items, the smallest mean (3.8750) belong to the statement "The lack of service for short periods of time for maintenance or any other activities does not affect the service delivery on time." with standard deviation(1.0749) which was highest when comparing it with other "Time" items standard divisions and in the (9<sup>th</sup>) rank.

#### 4. Information Technology (IT)

Factor IT was measured by (11) items. The descriptive statistics of "IT" items in Table (4.5).

**Table (4.5):** Descriptive statistics of IT

Item	Statement	Mean	S.D	Rank	Level of Importance
31	Providing advanced technological communication channels by the organization provides more convenient service to the customers.	4.6250	.53902	1	High
32	Every element of the widely spread logistics services makes use of the available services through the use of modern communication technology.	4.4911	.55338	6	High
33	Providing service electronic system demands by the organization enables the customer to get their needs fast.	4.5536	.62730	2	High
34	Providing a system of supplying services able to perform its tasks under unusual circumstances by the organization leads to the customer reliability.	4.4196	.67967	9	High
35	Using integrated logistic information systems, such as information technology (IT) and others, helps to speed decision - making.	4.4643	.56836	8	High
36	The use of an integrated information system by the organization helps to increase the competitive advantage	4.3125	.77146	11	High

	over those who do not use the system in the maritime transport sector.				
37	Providing clients with accurate information on the goods through electronic communication by the organization helps to increase customer satisfaction.	4.5089	.67110	3	High
38	The information system of the organization helps the sales staff to know customers better.	4.4821	.62934	7	High
39	The use of computerized information systems reduces the chances of human errors.	4.3393	.72972	10	High
40	The information system of the organization helps the sales staff in providing high quality services.	4.5000	.61512	4	High
41	The use of computerized operating systems by the organization helps to speed services delivery.	4.4911	.56942	5	High
<b>Grand Mean &amp; Standard Deviation of I.T</b>		<b>4.4716</b>	<b>.35546</b>		<b>High</b>

From Table (4-5) the "IT" had "High" level importance with a mean (4.4911) and standard deviation (.35546), all its items had a "High" level of importance , the highest mean of its items was (4.6250) with standard deviation (.53902) to " Providing advanced technological communication channels by the organization provides more convenient service to the customers." this made it in the first rank when compared with others items , the smallest mean (4.3125) belong to statement " The use of an integrated information system by the organization helps to increase the competitive advantage over those who do not use the system in the maritime transport sector." with standard deviation(.77146) and in the ( 11<sup>th</sup> ) rank.

The following Table (4-6) summarizes the construct descriptive results.

**Table (4.6):** Descriptive statistics of OCF and its characteristics

Characteristics	Mean	Standard Deviation	Rank	Level of Importance
Quality	4.5402	.30799	1	High
I.T	4.4716	.35546	2	High
Time	4.3625	.35946	3	High
Cost	4.2241	.46056	4	High
<b>Grand Mean &amp; Standard Deviation of Organization Critical Factor</b>	<b>4.4014</b>	<b>.29029</b>		<b>High</b>

The results illustrate that the variable "Organization Critical Factors" had a "High" level of importance with a mean of (4.4014) and standard deviation (.29029), therefore the ranking of OCF characteristics will be as follows ; Quality , IT , Time , Cost.

### **Second: Strategic Competitive Advantage**

A main dimension Strategic Competitive Advantage (SCA) was measured through (9) items. The descriptive statistics of "SCA" items in are shown Table (4-7)

**Table (4.7):** Descriptive statistics of SCA

Item	Statement	Mean	S.D	Rank	Level of Importance
42	The work of the organization to be unique in its services makes it preferable to customers.	4.5179	.56921	2	High
43	Work of the organization that is unique in its services makes it preferred by customers	4.4643	.68351	5	High
44	The organization works to provide the same services that its competitors have, but at a lower cost.	4.2768	.76181	7	High
45	The organization works to provide financial resources to	4.2589	.74429	8	High



	fund more projects.				
46	The organization works to provide the appropriate technological resources such as systems of communication and information systems.	4.5179	.56921	2	High
47	The organization works to stand out among its competitors through the provision of services at any time.	4.5625	.54988	1	High
48	The organization works to provide services in less time than its competitors.	4.4375	.62646	6	High
49	The existence of an effective senior management helps to create a competitive advantage for the organization.	4.5089	.60023	3	High
50	The organization performance in the execution of contracts helps to increase its competitive advantage.	4.4821	.68421	4	High
<b>Grand Mean &amp; Standard Deviation of SCA</b>		<b>4.4474</b>	<b>.39614</b>		<b>High</b>

Table (4-7) show the "SCA" had a "High" level importance with a mean of (4.4474) and standard deviation (.39614), all its items had a "High" level of importance, the highest mean of its items was (4.5625) with a standard deviation (.54988) to "The organization works to stand out among its competitors through the provision of services at any time". This was ranked first when compared with others items, the lowest mean (4.2589) belongs to statement "The organization works to provide financial resources to fund more projects" with standard a deviation of (.74429) and was ranked eighth.

### 4.3 Result of Study Hypotheses Testing

#### Study Hypotheses

The researcher in this part studied and tested the main hypotheses using Statistical Package for Social Sciences (SPSS). Through Multiple Regression analysis, F – test for estimated equations significance , t – test for effect significance of independent variable (ID) on dependent variable ( DV ) and coefficient of determination ( $R^2$  ) to know how the ID explain the variation in DV.

Multiple Regressions was used to test if there is a significant impact of four Organizational Critical Factors on Strategic Competitive Advantage (SCA). See Table (4-8) for the results.

**Table (4.8):** Multiple Regressions - Effect of Organizational Critical Factors on Strategic Competitive Advantage

DV	R <sup>2</sup>	F	D.F	Sig*	Regression Coefficient				Sig*
					ID	β	SE	t	
SCA	.494	26.118	(4,107)	.000	Constant	.671	.447	1.501	.136
					Quality	.011	.108	.105	.917
					Cost	-.038	.071	-.536	.593
					Time	.219	.099	2.220	.029
					IT	.656	.103	6.393	.000

\*significant if sig ≤ 0.05

Multiple regression is good fit to the relationship between Organizational Critical Factors and Strategic Competitive Advantage , the regression equation is significant since F test ( 26.118) with ( sig =0.000) less than 0.05 , ( 49.4% ) of the differences in SCA values

interpret the four Organizational Critical Factors, found that only IT and Time factors have a significant impact according to t-test for each of them, the variance influence factor as a measure to test multicollinearity between four Organizational Critical Factors equals (1.792) which is less than 5 as an indicator that no higher correlation between the Organizational Critical Factors.

Our conclusion here there is significant impact of OCF (IT and Time Factors only) on the SCA; therefore we can test each of the main research hypotheses.

### **First Hypotheses**

**H<sub>01</sub>:** "There is no statistically significant impact of Cost in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

Multiple regression uses to test this hypotheses, results in Table (4 – 8).

We observed that there is no significant impact of Cost factor on SCA, and regression equation is not significant since t test (.105). Therefore there is no significant impact of Cost on SCA.

All these evidences imply to accept the first hypotheses H<sub>01</sub>, so:

There is no statistically significant impact of Cost in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

### **Second Hypotheses**

**H<sub>02</sub>:** "There is no statistically significant impact of Quality in the maritime transport sector in Jordan on strategic competitive advantage ( $\alpha = 0.05$ )."

Multiple Regressions was used to test this hypotheses, results are shown in Table (4–8).

We observed that there is no significant impact of Cost factor on SCA, and regression equation is not significant since t-test (-.536). Therefore there is no significant impact of Cost on SCA.

All these evidences imply to accept the second hypotheses  $H_{02}$ , so:

"There is no statistically significant impact of Quality in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

### **Third Hypotheses**

**$H_{03}$ :**"There is no statistically significant impact of Time in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

Multiple Regression was used to test this hypotheses, results are shown in Table (4 –8).

Multiple regression is good fit to the relationship between time factor and SCA , the regression equation is significant since F test ( 26.118) with ( sig < 0.000) , Time factor explains (21.9 %) of the differences in SAC values ,and increasing one value in it will increase SCA value by (.029) , this is a significant impact according to t-test (2.220).

All these evidences seem to reject the second hypotheses  $H_{03}$ , so:

"There is a statistically significant impact of Time in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

#### **Fourth Hypotheses**

**H<sub>04</sub>:** "There is a statistically significant impact of Information Technology (IT) in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

Multiple regressions was used to test this hypotheses, results are shown in Table (4 – 8).

Multiple regression is good fit to the relationship between IT factor and SCA , the regression equation is significant since F test ( 26.118) with ( sig < 0.000) , IT factor explains (65.6 %) of the differences in SAC values ,and increasing one value in it will increase SCA value by (.000) , this is a significant impact according to t-test (6.393).

"All these evidences imply to Reject the second hypotheses H<sub>04</sub>, so :

"There is a statistically significant impact of Information Technology in the maritime transport sector in Jordan on strategic competitive advantage at ( $\alpha = 0.05$ )."

In rejection of the third and fourth hypotheses, this means that there is a significant impact on each of Organizational Critical Factors (IT and Time) on Strategic Competitive Advantage, organizational critical factors (IT and Time) has a good explanation on the differences in SCA values.

Multiple regression is a good fit for the relation between only two factors of Organizational Critical ( IT and Time ) on Strategic Competitive Advantage , since ( F = 26.118) with its sig =.000 less than .05, because these two strong impacts in the data of this study , the IT and Time removed Cost and Quality from multiple regression model , and it does not mean that the removing variables have no impact, but focus only on independent variables which make a better explanation when they enter in model and have a significant impact.

## **Chapter Five**

### **Results, Conclusions, Discussions and Recommendations**

(5.1): Results

(5.2): Conclusions and Discussions

(5.3): Recommendations

## 5.1 Results

The current study posed a set of questions, placing the hypotheses and their relation to the impact within the study variables. The study arrived at many results that contributed to solve the study problem described in chapters (1-2), answering the questions and hypotheses of the study. The main results were:

1. There was a statistically significant impact of Information Technology (IT) on strategic competitive advantage in the maritime transport sector in Jordan at ( $\alpha \leq 0.05$ ).
2. There was a statistically significant impact of Time on strategic competitive advantage in the maritime transport sector in Jordan at ( $\alpha \leq 0.05$ ).

## 5.2 Conclusions and Discussions

On the basis of the study results, the researcher concludes the following:

The IT, and Time occupy a significant attention level in maritime transport sector companies in Jordan. And that supports (Kannan, et, al., 2011) who found that IT and communication has a positive effect on an organization's strategic competitive advantage.

The "Time" had "High "level importance with a mean of (4.3625) and a standard deviation of (.35946), all its items had a "High" level of importance , the highest mean of all its items was (4.6696) with a standard deviation (.50917) to " The shipping and delivering of the goods by the organization helps to increase the competitive advantage."

The (IT) had a "High "level importance with a mean of (4.4911) and a standard deviation (.35546), all its items were "High" level of importance ,and the highest mean of its items was (4.6250) with standard deviation (.53902) to " Providing advanced technological communication channels by the organization provides more convenient service to the customers.

The maritime sector organizations in Jordan select critical factors and they assign different weights to each of them in achieving strategic competitive advantage. "IT" is the first ranked criterion and "Time" is the second ranked one. These are the only two factors that are adjudged by Jordan maritime sector organizations. Giving utmost importance to rate reflects high level of competitiveness.

Under IT factor it was found that, providing advanced technological communication channels by the organization offers more convenient service to the customers." this was ranked when compared with others criteria. And, under TIME, it was found that the shipping and delivering of the goods by the organization helps to increase the competitive advantage. This made it in the first rank when compared with others criteria.

Later, say after 2-3 years, another study may also be conducted to find out the importance of these factors and whether they will change and new criteria emerge during this period. In the maritime transportation sector, there are other forms of shipments like break bulk, tankers, etc. Researchers may try to replicate this study to find out the selection criteria of these modes and their relative importance as perceived by the users of these services.



Identifying selection criteria and their importance of other modes like road, rail and air transport, need to be studied in the future. It is worthwhile to note that all these studies have already been attempted in various economies, but not yet in Jordan.

Hence, the present paper is thought to be a light post to various new areas of maritime transportation research in Jordan.

### **5.3 Recommendations**

On the basis of study results and conclusions, the researcher suggests the following recommendations to meet the study objectives.

1. The Organization in maritime transport sector needs to clarify the factors that got a high impact level on its strategic competitive advantage.
2. The organization needs to work hard to stand out among its competitors through the provision of services at any time
3. The organization should know that, providing advanced technological communication channels by the organization provides more convenient service to the customers.
4. Providing an integrated information system by the organization helps to increase its competitive advantage over those who do not use the system in the maritime transport sector.
5. Organization should be aware that minimizing the period for shipping and delivering goods, helps to increase its competitive advantage.
6. To reduce the time period for the delivery of the goods can be achieved by reducing the time of the logistics process.

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## Appendices

### Appendix 1

#### The Academic Reviewers from Jordanian Universities

No.	Reviewer	University
1.	ا.د محمد عبدالعال النعيمي	جامعة الشرق الاوسط
2.	د.راتب جليل صويص	الجامعة الاردنية
3.	د.مروان النسور	جامعة البلقاء التطبيقية
4.	د.ظاهر القرشي	جامعة عمان العربية
5.	د.انور العزام	جامعة عمان العربية
6.	د.رولا الضامن	جامعة عمان العربية
7.	د.احمد السكر	جامعة عمان العربية

## **Appendix 2**

Research Questionnaire

Organizational Critical Factors and Their Effect in Achieving  
Strategic Competitive Advantage

السيد المدير الفاضل

تحية طيبة وبعد،،،

يقوم الباحث حالياً بدراسة بعنوان " عوامل المنظمة الحرجة وتأثيرها في تحقيق ميزة تنافسية استراتيجية , دراسة ميدانية على قطاع النقل البحري في الاردن "

من أجل الحصول على درجة الماجستير من جامعة الشرق الاوسط - عمان، ومن أجل تحقيق هدف هذه الدراسة تم اختيار الشركات الاردنية العاملة في مجال النقل البحري.

ونظراً لسمعتكم الطيبة وخبراتكم المرموقة فانه يسرني ان اضع بين ايديكم الاستبيان المرفق للاطلاع عليه وبيان تعليقاتكم القيمة.

وان الباحث ليؤكد لكم بان المعلومات التي تتضمنها الاستبانة وتعليقاتكم ستعامل بغاية السرية ومن أجل البحث العلمي فقط.

شاكراً لكم حسن تعاونكم وسرعة الاجابة.

وتفضلوا بقبول فائق الاحترام والامتنان

الباحث/ عيسى عوض محمود حسن

## Research Questionnaire

### Questionnaire 2012

#### عوامل المنظمة الحرجة وتأثيرها في تحقيق ميزة تنافسية استراتيجية استبانة 2012

#### القسم الأول: معلومات عامة

توجد ميزة تنافسية عندما تكون الشركة قادرة على تقديم نفس مزايا المنافسين ولكن بتكلفة أقل (ميزة التكلفة)، أو بفوائد تفوق تلك المنتجات المتنافسة (ميزة التمايز). وهكذا، تمكن الميزة التنافسية للشركة لإنشاء قيمة أعلى لزيائنها وأرباحا عالية لنفسها.

ملاحظة: يرجى وضع علامة (√) أمام الفقرة التي تقتنع بها

#### أولاً : الخصائص الديموغرافية:

- |                          |                   |                          |                 |                    |
|--------------------------|-------------------|--------------------------|-----------------|--------------------|
| <input type="checkbox"/> | 2- أنثى           | <input type="checkbox"/> | 1- ذكر          | 1- الجنس :         |
| <input type="checkbox"/> | 2- دبلوم          | <input type="checkbox"/> | 1- ثانوية عامة  | 2- الثقافة:        |
| <input type="checkbox"/> | 4- ماجستير        | <input type="checkbox"/> | 3- بكالوريوس    |                    |
|                          |                   | <input type="checkbox"/> | 5- دكتوراه      |                    |
| <input type="checkbox"/> | 2- مساعد مدير عام | <input type="checkbox"/> | 1- مدير عام     | 3- المركز الوظيفي: |
| <input type="checkbox"/> | 4- رئيس قسم       | <input type="checkbox"/> | 3- رئيس دائرة   |                    |
|                          |                   | <input type="checkbox"/> | 5- رئيس ( أخرى) |                    |
| <input type="checkbox"/> | من 6-10           | <input type="checkbox"/> | من 1 - 5        | 4- سنوات الخبرة :  |
| <input type="checkbox"/> | أكثر من 15        | <input type="checkbox"/> | من 11-15        |                    |
| <input type="checkbox"/> | من 26-30          | <input type="checkbox"/> | من 20-25        | 5- العمر:          |
| <input type="checkbox"/> | من 36-40          | <input type="checkbox"/> | من 31-35        |                    |
|                          |                   | <input type="checkbox"/> | من 41 سنة فأكثر |                    |



## ثانياً: معلومات عامة عن الشركة

1- إلى أي من القطاعات التالية يمكن أن تصنف شركتكم؟  
الرجاء وضع إشارة (√) في مربع واحد

- |                          |                       |    |                          |                   |    |
|--------------------------|-----------------------|----|--------------------------|-------------------|----|
| <input type="checkbox"/> | ملاك (Owners)         | -2 | <input type="checkbox"/> | تشغيل (Operation) | -1 |
| <input type="checkbox"/> | وسيط (Broker)         | -4 | <input type="checkbox"/> | وكالات (Agency)   | -3 |
| <input type="checkbox"/> | اخرى (الرجاء التحديد) | -6 | <input type="checkbox"/> | وسائط (Logistics) | -5 |

2- عدد العاملين في الشركة في الوقت الراهن

3- قطاع الملكية التي تنتمي لها الشركة :  
الرجاء وضع إشارة (√) في مربع واحد

- |                          |               |    |                          |                       |    |
|--------------------------|---------------|----|--------------------------|-----------------------|----|
| <input type="checkbox"/> | مساهمة محدودة | -2 | <input type="checkbox"/> | مساهمة عامة           | -1 |
|                          |               |    | <input type="checkbox"/> | اخرى (الرجاء التحديد) | -3 |

-----

## القسم الثاني : يمثل اربعة عناصر من عوامل المنظمة الحرجة

يرجى الإشارة ، وذلك باستخدام المقياس الخماسي في الأسفل إلى أي مدى العبارات التالية تصف العوامل الحرجة للمنظمة في ميزتها التنافسية الاستراتيجية.

يرجى وضع إشارة (√) على الرقم المناسب في المقياس المقدم.

1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة
--	----------------------------	-----------------------	---------------------	-----------------------------------

### 1- العامل الأول: الجودة ( Quality )

ينصب تركيز المستهلكين على نوعية ومواصفات المنتج أو الخدمة، ويقومون بعمل مقارنة للمنافسين في السوق. الجودة المطابقة والمقدمة من الشركة يمكن قبولها من المستهلك. الدرجة التي يصل المنتج إليها تنتج بشكل صحيح، فإنه يعني نقل السلع يمكن أن يتم بأمان، وبشكل اقتصادي وبسرعة، و من موقع إلى آخر في السوق.

1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة	الفقرة
					إرضاء المنظمة للعميل من أهم العوامل التي تؤثر على جودة الخدمة المقدمة للعملاء.
					تلبية المنظمة لحاجات العملاء المتنوعة تعتبر أمراً حيوياً للحصول على ولاء العملاء.
					تعامل المنظمة الدقيق مع أنشطة النقل والإمداد في المركز اللوجستي أو المستودعات يعني جودة عالية على الخدمات المقدمة.
					تنفيذ الشحنات بدقة عالية يؤدي للحصول على قيمة عالية لدى العملاء.
					جميع الأنشطة المشتركة التي تجعل الوظائف تعمل بشكل جيد بحاجة إلى موارد بشرية مؤهلة .
					توفير المنظمة للموظفين الذين يتمتعون بالمعرفة والمهارة سيجعل عمليات النقل والإمداد آمنة.
					توفير المرافق المادية الكافية يلعب دوراً هاماً في السوق المعقدة للوصول إلى متطلبات السوق.
					ان المصدقية في تنفيذ العقود يساعد على زيادة جودة الخدمة المقدمة.

1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة	الفقرة
					ان التزام المنظمة بمعايير السلامة يعني مخاطر قليلة على البضاعة والمنظمة.
					ان والاداء المتميز في تنفيذ العقود يساعد على زيادة الميزة التنافسية للمنظمة.

## 2- العامل الثاني : الكلفة ( Cost )

محاسبياً : التكاليف هي القيمة النقدية لنفقات اللوازم والخدمات، العمال، والمنتجات، والمعدات وأشياء أخرى اشترتها الشركة للاستخدام اقتصادياً، التكاليف تعني تكلفة الفرصة البديلة. مهما يكن المجال، اتفق ان تقليل التكلفة عادة يجعل الشركة تعرض السلع والخدمات بسعر أرخص. ومن ثم، يمكن أن يؤدي التقليل من التكاليف الإجمالية على اللوجستيات بزيادة القيمة والفوائد للعملاء.

توفير السعر المعقول: عادة، يشمل السعر قيمة أعلى للربحية فوق تكلفة الخدمات، ومقارنة الأسعار بين المنافسين غالباً ما تتأثر بالعمل من حيث تقييم اختيار الشركة. وكان السعر حتى الاونة الاخيرة الأكثر تأثيراً على قرار الشراء؛ أما الآن لم يعد السعر يشكل المتغير الأهم في اتخاذ القرار.

1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة	الفقرة
					المشترى للخدمة يفضل دفع الكلف والأجور المباشرة والمتصلة بالخدمة مباشرة .
					يتم اختيار افضل شركات الشحن من خلال مقارنة مدى انخفاض تكاليف التشغيل ذات الصلة بالشحنات بين المنافسين.
					العمل على تقليل اجور الشحن يساعد على خلق ميزة تنافسية و اختيار شركات الشحن.
					العمل على تخفيض تكاليف التشغيل يساعد على جذب الزبائن لشراء خدمات الشركة.
					زيادة المصاريف الاضافية والرسوم الغير مبرره تؤثر سلبيا على اختيار خدمات المنظمة.
					لايحبذ العميل دفع الأجور الاضافية وخاصة اذا ما كان يعتقد ان هذه الأجور لخدمات اضافية لا يستخدمها.
					مقارنة الاسعار بين المنافسين غالباً ما تتأثر بالمستهلك في تقييم واختيار الشركة الملائمة للحصول على الخدمات.
					رغم ان السعر يعتبر من اهم العوامل في قرار شراء الخدمة الا انه الان لم يعد العامل المهم الوحيد في قرار شراء الخدمة.
					تقليل كلف التأمين من خلال العمل على تأمين الضروريات يساعد على خلق ميزة تنافسية.
					تقليل كلف المناولة (التحميل والتفريغ) يساعد على خلق ميزة تنافسية.

## 3- العامل الثالث: الوقت ( Time )

'الوقت هو المال' في ظل بيئة تنافسية وخاصة في هذه الأيام في ظل بيئة تنافسية عالمية. والمستهلكين في هذا المجال لديهم حساسية متزايدة لجانب الوقت، بينما يعتبر الوقت أو السرعة كمصدر لتمييز الشركات. 'تكلفة الوقت' مؤشر ذو تأثير كبير في اختيار السلع أو الخدمات المنظمة حيث ان التوقيت له اهمية قبل كل شيء. والمنافسة على أساس الوقت أصبحت الوسيلة الرئيسية في سوق نامي من اللوجستيات ذو حساسية عالية من الزمن.

1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة	الفقرة
					تعمل المنظمة على تقليل الفترة الزمنية لتوصيل البضاعة والذي يمكن أن يتحقق بتقليص وقت عملية النقل والإمداد.
					تعمل المنظمة على تقليل الفترة الزمنية في تقديم الخدمة والذي يتم من خلال القضاء على الأنشطة التي لا تؤدي إلى القيمة المضافة.
					تقليل الوقت يتحقق من خلال فهم أكبر لأنشطة مجموعة العمليات اللوجستية.
					استجابة الخدمة يجب أن يكون لها معياراً لإظهار توفر الخدمة في أي وقت.
					عدم توفر الخدمة لفترات زمنية قصيرة وذلك للصيانة أو لأي نشاطات أخرى لا يؤثر على تقديم الخدمة في الوقت المحدد.
					توفير المنظمة نظام استجابة للخدمة فعال يساعد في تقليل الوقت اللازم لتقديم الخدمة.
					تقليل الخط الملاحي للفترة الزمنية مابين الرحلات يساعد على زيادة الميزة التنافسية.
					تقليل المدة الزمنية لايصال الشحنات يساعد على زيادة الميزة التنافسية للخط الملاحي.
					تنافس المنظمات في تقديم الخدمات على أساس الوقت من العوامل المهمة وتؤدي إلى نمو حساسية الوقت في تقديم الخدمات.
					ان قيام المنظمة بشحن وتسليم البضاعة في المواعيد المحددة يساعد على زيادة الميزة التنافسية.

## 4- العامل الرابع: تكنولوجيا المعلومات ( IT )

بتقديم خدمة أفضل من خلال توفير أنظمة تكنولوجيا المعلومات يؤدي حصول المنظمة على المزيد من الهامش وحصصة أكبر من السوق. وتبين التجربة ان الخدمة المتفوقة هي التي تصل الى رضا العملاء العالي.					
1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة	الفقرة
					قيام المنظمة بتوفير قنوات اتصال تكنولوجية متقدمة توفر خدمة أكثر ملاءمة للعملاء.
					يستفيد كل عنصر من عناصر الخدمات اللوجستية الواسعة الانتشار من اعتماد الخدمات المتوفرة من خلال استخدام تكنولوجيا الاتصالات الحديثة .
					توفير المنظمة لنظام الطلبات الالكتروني للخدمات يمكن العملاء من الحصول على احتياجاتهم بسرعة.
					توفير المنظمة نظام تزويد الخدمة القادر على أداء مهمته في الظروف الغير عادية يؤدي للوصول إلى الموثوقية من قبل العملاء.
					استخدام المنظمة لانظمة المعلومات اللوجستية المتكاملة مثل تكنولوجيا المعلومات (IT) وغيرها يساعد على سرعة اتخاذ القرارات.
					استخدام المنظمة نظام المعلومات متكامل يساعد على زيادة الميزة التنافسية على الذين لا يستخدمون النظام في قطاع النقل البحري.
					قيام المنظمة بتزويد العملاء بالمعلومات الدقيقة عن البضائع من خلال الاتصال الالكتروني يساعد على زيادة رضا العملاء.
					ان نظام المعلومات في المنظمة يساعد موظفي المبيعات لمعرفة العملاء بشكل أفضل .
					استخدام أنظمة معلومات محوسبة يقلل من فرص الأخطاء البشرية .
					ان نظام المعلومات في المنظمة يساعد موظفي المبيعات في تقديم خدمات عالية الجودة.
					استخدام المنظمة لانظمة تشغيل محوسبة يساعد على سرعة تقديم الخدمات.

### القسم الثالث : يمثل الميزة التنافسية الاستراتيجية للمنظمة

يرجى الإشارة ، وذلك باستخدام المقياس الخماسي في الأسفل إلى أي مدى العبارات التالية تصف الميزة التنافسية الاستراتيجية للمنظمة.

يرجى وضع إشارة (√) على الرقم المناسب في المقياس المقدم.

إن تحقيق الميزة التنافسية في إطار قطاع الأعمال يتطلب من المنظمة وضع الاستراتيجيات المولودة التي يمكن أن تكسبها في التطبيق العملي دوام التفوق والتميز على أقرانها في تخفيض أكلافها وتحسين مستوى وجودة منتجاتها وبعبارة أخرى يوجد نوعين من هذه الإستراتيجيات التي تستهدف عادة وهي :					
1 Strongly disagree غير موافق بشدة	2 Disagree غير موافق	3 Neutral محايد	4 Agree موافق	5 Strongly agree موافق بشدة	الفقرة
					تعمل المنظمة على تحسين ادارة الجودة الشاملة في الموارد البشرية.
					عمل المنظمة على ان تكون فريدة في خدماتها تجعلها مفضلة لدى العملاء .
					تعمل المنظمة على تقديم الخدمات نفسها التي لدى منافسيها ولكن بتكلفة أقل.
					تعمل المنظمة على توفير الموارد المالية لتمويل مشاريع اكثر.
					تعمل المنظمة على توفير الموارد التكنولوجية الملائمة مثل انظمة الاتصال وانظمة المعلومات.
					تعمل المنظمة على التميز عن منافسيها من خلال توفير الخدمات في اي وقت.
					تعمل المنظمة على تقديم خدماتها في وقت اقل من منافسيها .
					وجود ادارة عليا فاعلة يساعد على خلق ميزة تنافسية للمنظمة.
					الأداء المتميز للمنظمة في تنفيذ العقود يساعد على زيادة الميزة التنافسية للمنظمة.

END