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The Impact of Service Privatization: The Case of a Container Terminal at the Port of Limassol

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ABSTRACT

The Cyprus government has signed agreements for the commercialization of the activities of the Port of Limassol, with the aim to increase the financial viability of port operation and sustain competitive advantage. This paper aims to examine effects of and expectation from port privatization based on port stakeholders' perspectives such as port authorities, concessionaire and port customers. Firstly, this study investigates how the port authority intends to verify and control the performance of the concessionaire with regard to the operational and functional domains that directly influence a container terminal's performance and to identify all the possible effects of privatization. Secondly, it explores how the concessionaire intends to improve the performance of the container port. Thirdly, it examines port users' expectations of the services and satisfaction with port services after privatization. A mixed methodology is employed involving interviews and a questionnaire survey with practitioners at the Port of Limassol. The impact of its privatization is provided in the discussion and conclusion section.

Keywords: Container port, Service privatization, Cyprus port, Limassol, EU

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1. Introduction

The maritime industry is moving into a new era wherein 90% of traded goods are transported by sea (ICS, 2015). The rapid acceleration of globalization is a result of tremendous technological and innovative progress, dismantling of national barriers, and increasing standardization and uniformity (Lloyd's, 2010). This has resulted in integrating ports with the global economy as they serve as crucial gateways to international trade. Accordingly, a seaport is regarded as a major driver of local economic development (Seo and Park, 2018; 2016). It is widely believed that ports along the European Union (EU) coastline are successful pioneers in integrating several means of transport, as over 1,200 seaports operate in Europe and handle approximately 3.7 billion tonnes of goods, corresponding to 60,000 port calls of merchant ships (European Council, 2013). However, the global financial crisis has evoked various financial obstacles for European governments. Their decreasing financing capacity has resulted in their inadequate support to the maritime industry and their inability to meet the demands of the rapidly changing environment in which it operates (Song et al., 2019). Behind the entire spectrum of the financial crisis that imposes considerable implications on the European maritime industry, the EU aims to encourage best practices and a more innovative spirit in its ports. The overall aim is to create a framework guaranteeing healthy competition and clear legislations that will assure high port service quality and efficiency while ensuring environmental management performance (European Council, 2013). This would improve global competitiveness by maximizing the effectiveness of the supply chain via adequate pricing, quality, and efficiency (PWC, 2013).

Cyprus is at the crossroad of three continents (Europe, Asia, and Africa) and Port of Limassol is the first port beyond the Suez Canal. Cyprus has the third largest open registry or a flag of convenience in the EU and 11th worldwide owing to its flexible tax regime and simplified management (Pallas, 2014). The Port of Limassol is the main port in Cyprus operated as a multipurpose port since 1974. It is the largest and busiest port in Cyprus providing a variety of services such as loading and unloading cargo services, timber, iron, ro-ro, dry bulk, liquid bulk, handling passenger traffic, ferry passenger facilities and facilitating the needs of every vessel. Cyprus is implementing the economic adjustment program as a consequence of the financial crisis (CNA, 2016). The Ministry of Internal Affairs has agreed on different consortiums. Following intense negotiations of due diligence and consultations with the interested port operators, the German Eurogate International, the DP World and its partner-based transport and logistics group, GAP Vassilopoulos, have secured potential concession opportunities to operate Limassol's container terminal, its marine services, and its multipurpose terminal (Ministry of Internal Affairs, 2016). Notwithstanding the Port of Limassol's importance in EU maritime corridors, few studies have reviewed its

status, development, and effects of privatization. Therefore, this research aims to examine effects of and expectation from port privatization based on port stakeholders' perspectives such as port authorities, concessionaire and port customers. Firstly, this study investigates how the port authority intends to verify and control the performance of the concessionaire with regard to the operational and functional domains that directly influence a container terminal's performance and to identify all the possible effects of privatization. Secondly, it explores how the concessionaire intends to improve the performance of the container port. Thirdly, it examines port users' expectations of the services and satisfaction with port services after privatization.

2. Literature Review

2.1 Port Operations Efficiency and Quality

Efficiency and quality of operations are crucial factors for seaports to be vital nodes in supply chains (Seo et al., 2016, 2015). The perception of efficiency in ports is ambiguous, and it is difficult to indicate the overall performance of a port, as many researchers define efficiency in different ways. Chin and Tongzon (1998) defined container terminal efficiency as the extent to which terminals use inputs to generate output levels and employ relevant technologies efficiently. UNCTAD (2006) determines efficiency based on the reliability and speed of a port's operations because on-time delivery is one of the critical factors that affect users' choice of a reliable port. Nyema (2014) found that freight rates and the cargo dwelling time were critical factors determining efficiency, along with terminal efficiency regarding operational strategies and customer-oriented strategies. These strategies include increasing asset utilization rates, labor and capital productivity, lowering costs, minimizing delays, increasing quality of inland transport services, and reducing a vessel's waiting time (Nyema, 2014). Additional factors such as a port infrastructure, quality of services, customs requirements, and a high regulatory burden should be also considered for port efficiency (Clark et al., 2004).

2.1.1 Quality in Ports

The port industry faces many challenges owing to the globalization of consumption and production, trade relationships, and the progress of technology. Therefore, ports play a vital link in the global supply chain and are forced to provide and promote high-quality services. Stakeholders were concerned with

quality for years, as both the International Association of Ports and port users are directly affected. International bodies make concerted efforts to be more productive and cost effective by improving their quality of services, and port consumers consider quality as an important element in choosing a port (Ha, 2003).

The overall aim of business is to generate a customer (Drucker, 2006). Thus, companies should intensively concentrate on their customers, as the quality of services is very important to achieve customer satisfaction. Various ports are unable to render the standard or right mix of services because of deficiencies in their infrastructure such as poor equipment, inadequate water depth, the absence of quay and storage spaces, and poor interaction arrangement regarding inland transport. Such deficiencies may evoke many complaints from shipping lines and other port users. In this regard, port authorities must reinvent their strategies and respond to clients' requirements, which can be achieved through customer-oriented strategies.

2.1.2 Key Performance Indicators

There are many opportunities for a port to increase its operational efficiency owing to significant developments in international sea traffic and massive technological progress (Merk and Dang, 2012). Key performance indicators (KPI) are among the most significant elements for a port to obtain useful information and identify its potential, thereby allowing it to develop sustainably and improve its operational efficiency. Port productivity is mainly based on factors such as the speed at which cargo is handled, the turnaround time of vessels, and cargo volume handling (ICS, 2011).

Table 1 presents the performance indicators to measure port or terminal performance, which help in taking correct decisions, formulating investment strategies, planning, and forecasting. An efficient port manager must quickly and clearly manage various operations that take place in the port to achieve the highest service levels. Moreover, through accurate forecasting and planning, the

Table 1 Operational Indicators Summary

Indicators	Unit Calculation
Berth occupancy	The length of time a berth is utilized for / the total available time
Truck turnaround time	Hours / ship
Turnaround time	Total hours / the number of calling ships
Quay length	Total number of container moves loaded and unloaded in the quay transfer operation / a ship's total working time
Crane rate	Total number of containers / a ship's total working hours

Source: UNCTAD (1998)

manager must be prepared for future operations. The establishment of performance indicators allows unbiased analyses and comparison. Reliable data and an in-depth description of the meaning behind each indicator is crucial for the good performance of indicators (ICS, 2011).

The quality management system, ISO 9001 is also used as one of the indicators to measure the quality of services. This standard mainly relies on some quality management principles comprising strong customer orientation, motivation, and influence of top management. The seven principles of quality management are customer focus, leadership, engagement of people, process approach, improvement, evidence-based decision making, and relationship management. These principles are significantly interrelated and can bring about guaranteed benefits when firms apply the standards appropriately. This is beneficial to every stakeholder as ports, with the overall aim of sustainable success, can find new business opportunities and expand into new markets.

ISO 18001 comprises health and safety management systems for guiding ports to set the necessary procedures, policies, and controls to perform operations effectively; to achieve solutions; and to provide a better workplace for customers and employees. This standard has a positive influence on improving performance, which in turn leads to greater productivity and greater opportunities to attract investment. Therefore, ports can gain a competitive advantage and expand their business, and earn an international reputation (Bsigroup, 2016).

2.2 Environment

While globalization has integrated ports with the global economy, there is an increasing concern about their potential impact on the environment (Dinwoodie et al., 2012). Atmospheric emissions released by ships during operations such as loading and discharging maneuvers, are among the main negative fallouts. Water pollution as a result of oil spills and ballast water is also another critical environmental impact (Table 2).

In this respect, the European Sea Ports Organisation introduced an Environmental Code of Practice in 1994, which was updated and replaced by the ESPO Green Guide (ESPO, 2016), while carrying out periodic environmental surveys on port performance. In collaboration with the port sector and research organizations, ESPO facilitates systematic environmental management and provides a framework via methodologies and tools to expand its EcoPorts network.

The EU Eco-Management and Audit Scheme (EMAS) and ISO 14001 are also accepted by the stakeholders apart from the EcoPorts tools. The EMAS has been made available since 2001 and was revised in 2009 to assist shipping companies in assessing, reporting, and improving their environmental performance. ISO 14001 is an optional application for a wide range of companies and its overall aim is to develop policies encompassing legal and environmental requirements in implementing, preserving, and improving management systems in compliance

Table 2 Evolution of Top Environmental Priorities (1996–2016)

Rank	1996	2004	2009	2013	2016
1	Port development (water)	Garbage/port waste	Noise	Air quality	Air quality
2	Water quality	Dredging operations	Air quality	Garbage/port warehouse	Energy consumption
3	Dredging disposal	Dredging disposal	Garbage/port waste	Energy consumption	Noise
4	Dredging operations	Dust	Dredging operations	Noise	Relationship with local community
5	Dust	Noise	Dredging disposal	Ship waste	Garbage/port waste
6	Port development (land)	Air quality	Relationship with local community	Relationship with local community	Ship waste
7	Contaminated land	Hazardous cargo	Energy consumption	Dredging operations	Port development (land related)

Source: ESPO (2016)

with the standard (ESPO, 2012). It is regarded as a useful and essential ratification for firms by self-declaration and determination and relied upon the nature, products, policies, conditions and location where they operate.

Furthermore, the ESPO has established a two-year project aiming to measure performance based on the achievements of European ports to maintain the competitive edge of the European economy (ESPO, 2013). Moreover, the EC co-funded the Portopia project to improve those indicators and aims to change the culture of European ports entirely and entice more ports by obtaining important information through current trends, advancements, and activities. Therefore, since many countries are fully integrated to the global economy, ports should be able to provide a wide range of services to satisfy customers' demands, while maintaining environmental sustainability.

ISO 50001, the energy management system, helps ports use energy efficiently and achieve immediate benefits by improving energy management Apart from cost reduction, resource conservation and global warming reduction are possible through improved energy management and efficiency. A combination of ISO 50001 and ISO 14001 could be a useful tool in amending objectives and goals, and enabling the measurement and review of results, along with continued improvement in environmental management. Understanding the concept of this indicator can lend credibility and improve the environmental sustainability of ports (ISO, 2016).

2.3 Privatization

One of the most widely accepted factors for a port to gain a competitive advantage is port privatization. To achieve this, port authorities must improve their operational efficiency by increasing private sector participation (Tongzon and Heng, 2005). UNCTAD (1998) defines privatization as the transfer of ownership of assets from the public to the private sector or the application of private capital to fund investments in port facilities, equipment and systems. Privatization constitutes one of the most obvious trends owing to the lack of managerial capability and resource management leaving customers dissatisfied (Notteboom, 2006). Through the various governance structures and the adjustment of new roles and objectives, stakeholders could gain higher productivity, greater competition, and consequently, lower costs (Notteboom, 2006).

2.3.1 Port Governance

Cullinane and Song (2003) noted that private ownership has a significant impact in developing and improving port efficiency. Tongzon and Heng (2005) argued that partial privatization is preferred over full privatization as it produces better results and considerably improves competitiveness. However, other studies pointed out that ownership structure is not directly associated with port efficiency and consequently, competitiveness. Notteboom et al. (2000) investigated the ownership structure of container ports in the world and concluded that private enterprises show a negative correlation with improved efficiency and performance.

2.3.2 Concessions

The concessions resulted from the globalization of trade, which in turn, created the need for port reforms. Over the last few decades new public management philosophies and innovative technologies have been included both in the port and maritime industry leading to a change in port governance. Concession agreements are being granted to private operators in the range of 25 to 40 years as a result of the expansion of strategies such as the vertical or horizontal procedures, portfolio diversification process from investors with the main specifications of concession being that the ownership and the control of the organization remain with the port authorities. However, the private sector undertakes commercial services and exploits rare resources such as land (Notteboom, 2011).

By applying these accelerating type of contracts, port authorities can gain significant benefits with respect to port activities, as they comprise all the ingredients of a modern seaport for better trade development, which in turn contributes to the economic and social advancement of the region and associated investments (Branch, 2007). Governments are aware that ports are the key elements of trade and a major multiplier of a nation's prosperity, and that there is

a compelling need to provide lower distribution costs, better cost control, and lower inventories (Park and Seo, 2016; Seo and Park, 2018). Additionally, through competition and new market opportunities, higher berth productivity and improved multimodal port infrastructure are guaranteed.

2.3.3 The Landlord Port Model

The landlord model is one of the most dominant port governance models. According to the EU (2013), there are four possible reasons that drive ports to act as landlords. First, the modernization of the existing public administration without any legal or policy modifications. Second, the commercialization of port activities including commercial practices and principles. Third, the liberalization of port activities or corporatization of terminals. Last, the public-private partnership concession could be a reason to apply this policy tool.

Under the landlord model, the duties of the port authorities are to administer, regulate, and exploit the port domain, while private companies manage and perform port activities. Moreover, the surveillance and supervision of this function is done with the overall aim of monitoring and promoting port performance (UNCTAD, 1998). Ports acting as landlords are responsible for developing, managing, and maintaining the port estate and should be able to render basic infrastructure and facilities as well as implement and apply relevant strategies and policies. The facilities that the basic infrastructure encompasses are berths, fair-ways, access to tunnels and roads, channels, breakwaters, turning basins, and locks (UNCTAD, 1998).

The prime priority of long-term concessions in a port acting as a landlord is to increase the operational performance level of the existing facilities and of those that need to be constructed. Port authorities perceive true privatization as an alternative means of funding port investments in novel facilities, systems, and equipment not only to diminish the burden of the national treasury but with the right measures that need to be taken (UNCTAD, 1998). Tongzon (1995) studied that ports acting as landlords can improve port performance and operational efficiency, with geographical location, economic activity, and frequency of vessel calls serving as crucial influencing factors.

3. Methodology

The Port of Limassol in Cyprus is the focus of this research because it has been recently privatized and will serve to provide an understanding of the effects of and expectations from port privatization. Often, the effects of privatization are captured by three port stakeholder groups: the port authorities, the concessionaire,

and customers. Given these stakeholders, this research aims to address the following three interconnected research objectives:

Objective 1 (Port Authorities): To investigate how the port authority intends to verify and control the performance of the concessionaire with regard to the operational and functional domains that directly influence a container terminal's performance and to identify all the possible effects of privatization;

Objective 2 (Concessionaire): To investigate how the concessionaire intends to improve the performance of the container port, particularly relating to economic and environmental sustainability;

Objective 3 (Customers): To investigate port users' expectations of the services that are offered after the granting of concessions, and to evaluate main criteria for customer satisfaction with port services after privatization.

As these objectives need the perspectives of three different groups in a port, a multistage data collection was required. For this purpose, telephone interviews were first carried out with the port authorities and the concessionaire. The Deputy Manager and Privatization Manager of the Limassol port authority and representatives of Eurogates (concessionaire) took part in these interviews.

Second, a questionnaire survey was conducted with port customers, namely, shipping companies that accommodate their ships in Cyprus and shipping agents who work as mediators for shipping companies to deal with cargo shipment and handling. Hinnis (2015) carried out a survey with users of Limassol Port before the port was privatized. His research categorized port activities into loading/unloading, piloting/hauling, cargo handling and transshipment trade, and then measured service levels for each activity. Interestingly, this research assumed that there were two types of customers: shipping companies and shipping agents. Shipping companies were defined as firms operating vessels and responsible for transport from/to Port of Limassol, whilst shipping agents were deemed to be local agents who handle cargoes at the port side in lieu of shipping companies. In general, shipping companies are asset-based large firms whose business spans across different countries and regions. Shipping agents, on the other hand, are non-asset-based small companies which connect shipping companies and shippers/consignees with strong local knowledge. The survey by Hinnis (2015) showed that shipping agents viewed the privatization more positively that shipping companies. In particular, shipping companies perceived that the performance was bad in loading/unloading and transshipment trade. This difference stemmed from the different business focuses of two parties. Shipping companies will require efficient port operations due to transit time and vessel turnaround time. However, shipping agents want safety dispatch and arrival of cargoes for their customers (cargo owner). The results can imply that the Port of Limassol had a serious problem with port efficiencies represented by turnaround time.

Our research adopted the same survey structure of Hinnis (2015) to compare customers' perceptions before and after the privatization. The questionnaire consisted of both qualitative and quantitative questions. The qualitative questions were about the terminal's operational performance after privatization and the quality of basic infrastructure. The quantitative questions evaluated customer satisfaction and expectations using 5-point Likert scales to evaluate services. Hinnis (2015) has analyzed customer perceptions on port services using 5-point Likert scales of (1) Really bad, (2) Bad, (3) Good, (4) Very good, and (5) Excellent. The questionnaire in this research adopted the same questions and scales in Hinnis (2015) for direct comparisons. In total, 35 questionnaires were sent to 10 shipping companies and 25 shipping agents, and 24 usable responses (9 shipping companies and 15 shipping agents) were received for analysis.

4. Findings

4.1. The Port of Limassol

Cyprus is at the crossroad of the continents, Europe, Asia and Africa, and the first port after crossing the Suez Canal. Owing to its geographical location, it is a significant hub facilitating trade among the major trade routes in Western Europe, Africa, and the Far East (CSPC, 2008). Additionally, Cyprus traditionally constitutes one of the most attractive locations for foreign companies with respect to bank and financial services. Shipping companies can easily be enticed to Cyprus, as the flag represents the nation under whose jurisdiction a vessel is registered and is one of the reasons why every ship-owner considers all fiscal advantages before choosing the relevant flag. The contribution of the maritime industry to the gross domestic product exceeds 7%, which equals 1 billion euros annually and provides jobs to 4,500 people. The Port of Limassol is the main port in Cyprus and plays a crucial role in the region's economy, not only because it is the largest port in the region but also because of its geographical location (Financial Mirror, 2015). However, it predominantly relies on the operational efficiency of its performance to be successfully sustainable. The port gives the country the capability to gain a competitive advantage and thus become an attractive destination to secure traffic flows and diversion from nearby ports (Nyema, 2014). A competitive advantage relies on process innovation, quality of hinterland access, and the information technology to leverage international opportunities (Notteboom, 2011; Kwak et al., 2018). The infrastructure of the Port of Limassol (Table 3) has been under development over the last few years.

The Cyprus Port Authority (CPA) is aware of the environmental issues that exist within ports and has begun a study on the application of an environmental management program. The program consists of research and development and is financed by the EU with the objective to enable each port to face and confront these issues in a financially viable manner. The CPA aims to create an environmental plan to cover its own needs and has begun to apply its environmental policy code gradually, laying down the environmental management fundamental principles (CPA, 2016).

Table 3 The Port of Limassol

Infrastructure Details	
• Number of quays	5
• Total length of quays (m)	2110 m
• Port sea depth (m)	Varies from 11 m to 17 m
• Turning circle & approach channel depth (m)	600m / 17 m
• East quay length / depth (m)	480 / 11 m
• North quay length / depth (m)	430 / 11 m
• West quay length / depth (m)	450 / 11–16 m
• South quay length / depth (m)	290 / 16 m
• Ro–Ro ramp length (m) / depth	50 / 16 m
• Ro–Ro ramp length (m) / depth	50 / 16 m
• Expanse of water (ha)	– 105 ha
Technical Details	
• Port opening hour	24
• Maximum ship dimensions for berth	
– Length	No limit
– Width	No limit
– Draught	10–13 m
• Anchorage	
– Available	Yes
– Compulsory	No
– Pilotage compulsory	Yes
– Tugs available	Yes
– Tidal movement / range	Yes
• Clearance	
– Clearance time	10 min.
– Clearance procedures	Routine control
Services	
• Ship repair	Yes
• Bunkering	Yes
• Waste and garbage disposal	Yes
• Water supply	Yes
• Provisions	Yes
• Banking	Yes
• Electricity supply	No
• VTS Services	Yes

Source: CPA (2016)

4.2. Government's Perspective

Port authority officers maintained a long list of expectations from concessions, such as attracting private investment funds and initiatives, improving port efficiency and productivity, improving the quality of port services, attracting new businesses, increasing the volume of twenty-foot equivalent unit (TEUs) to meet the port's current capacity, increasing state revenues, introducing new technologies, and enhancing port infrastructure and superstructure. Branch (2007) also stated that port authorities can gain significant benefits of a modern seaport for the better development of trade, which in turn would contribute toward the economic and social advancement of the region and associated investments.

Furthermore, a concession fee has been paid to the government, for which a down payment has already been made. The concession fee will be calculated based on the operator's income. However, there is a minimum amount that has to be paid per year, even if the income is less than expected. It is expected that Cyprus will gain an estimated 1.9 billion euros, which exceeds the government's initial expectations (Interorient, 2016).

It is believed that although provisions have been made for the assets to be returned to the government, the infrastructure should be in good condition during the concession commencement period as well as during the actual concession period. The machinery and equipment and any other movables assets will be under the control of the investor and it is up to him/her to decide what to keep, improve, and invest in provided that they are returned to the government in good condition within at least five years. Decisions regarding improving operations and purchasing new equipment such as cranes, straddle carriers for stacking and moving containers, new equipment to move containers horizontally, and innovative technology are left to the investor. This reveals that performing excellent shipping transactions in an appropriate environment constitutes a vital part of the development of the container terminal in providing high-quality services and becoming efficient.

It appears that some of the key performance indicators provided by the concessionaire will be applied. However, it is also stated that there will be regular surveys to gauge whether various commitments stated in the concession agreement have been adhered to. Certain KPIs that were set at the beginning of the discussions were finally removed because they were difficult to apply and monitor. Instead, ISO9001, ISO14001, and ISO18001 were applied. The government will be watching what is happening and what the concessionaire is presenting for putting constraints for positive impact to achieve the goals. They stressed that they are committed to the concession fee, maintaining the facilities, and applying all KPIs set and that there are contract provisions to comply with, otherwise the contract can be cancelled. If a standard performance failure occurs, then deficiency points will be assigned and a rectification plan for performance standard

failure set in motion. If a specific number of deficiency points are awarded, then a performance standards failure fee would be added to the next concession fee payment. The government is well aware of the introduction of such clauses influencing port performance and environmental sustainability. The launching of a comprehensive concession agreement that includes the duties and obligations would be an effective tool in helping and managing a perfect relationship between the two parties.

The new tariff list is more simplified and flexible regarding charges imposed on customers, with the only restriction being a ceiling charge that is applied for every service provided. It is a must of for both parties to respect the contract agreement and to avoid information asymmetries. There is a committee to monitor relevant activities and the port authorities will play the role of regulator. Apart from the conventional scope of the concession (concession fees, operations, and maintenance), the other aspects will remain the same to avoid information asymmetries. All public services (customs, police, etc.) will remain intact to have the control of the port and reduce corruption.

4.3. Concessionaire's Perspective

Concessionaires responded to the strategies planned by the Port of Limassol to attract customers and to the procedures for improving environmental sustainability. A proper container terminal must be equipped with state-of-the-art container gantries and straddle carriers, permitting smooth and rapid handling. The Port of Limassol, as one of South East Europe's transport hubs, can offer excellent feeder connections to the economic centers of Europe and the Middle East. High productivity levels and optimally coordinated workflows must characterize the container handling operations. In this respect, interviewees stressed that the new management of the port should be committed to ensuring that the Limassol container terminal complies with the latest technical standards and therefore remains competitive for the future by channeling substantial capital investments into its coffers. This also aligns with Notteboom's (2006) study that the transfer of a port's ownership to the private sector would improve operational efficiency and flexibility without leaving its customers dissatisfied. Moreover, stakeholders would achieve higher productivity, greater competition, and consequently, lower costs. It can be assumed that the concessionaire is planning on replacing equipment and using the latest technology to improve performance.

Regarding environmental sustainability, protecting the environment is a high priority for the new management (Oh et al., 2018; Kim and Seo, 2019). The interviewees are conscious of their responsibility toward the environment, employees, customers, and the community, and view effective environment protection as an integrated and company-wide strategy. This strategy is based on the three pillars, namely, maximum efficiency, minimum emissions, and

maximum safety and precaution.

Apparently, the new management of the Port of Limassol has clear goals for the future. With the introduction of an energy management system in compliance with DIN EN 50001, they expect to rationalize the specific energy utilization at the container terminals steadily. They have set themselves a clear target of 2020 to utilize 20% less energy per container and to reduce carbon dioxide emissions by 25% compared to 2008. If this is successful, it will fully comply with the requirements of the ESPO Green Guide and Energy Management System 50001, and consist of key drivers for sustainable development.

4.4. Customer Perspective

Customers expected that the operational mentality would change immediately through privatization. One necessary change they expected was the upgrade of equipment and machinery by technological advancements and automation. Deploying more experienced personnel training the existing personnel was also greatly required. Moreover, customers expected incentives for their cargoes, such as reasonable and controllable tariffs as well as flexible and reliable services.

Customers' satisfaction with port service levels can be found from the results of quantitative survey questions, which are demonstrated in Table 4. As this research aims to compare the customers' perceptions before and after the port privatization, the results from Hinnis (2015) are shown in the left columns of each user group and the current results are shown in the right columns in the table.

The results show that, before the privatization, shipping companies and shipping agents had mixed feelings about port service levels; shipping agents appeared to be optimistic with all aspects, but shipping companies rated loading/unloading and transshipment trade rather negatively. After the privatization, the satisfaction of shipping companies has been dramatically changed. Now 100% shipping companies thought that port performance are positive in four port activities. Even the level of satisfaction in each activity has been increased. Shipping agents remained their optimistic view on privatization except only one negative answer in piloting/hauling.

This finding is in line with the emphasis of KPIs by the port authority. In particular, the port infrastructure and operations deemed to be more favorable to shipping companies after privatization. Loading/unloading is an important issue for shipping companies because it can affect vessel turnaround time and transit time reliability. Modern container ports therefore emphasize short turnaround time within a port by optimal operations, an increasing number of gentry cranes, efficiencies of cranes, automated cranes to name a few. Also, efficient operations within a port can increase the possibility of transshipment trade by linking cargoes from trunk vessels and feeder vessels.

Table 4. Service comparison between "before privatization" and "after privatization"

Services	Shipping Companies		Shipping Agents	
	Before privatization (Hinnis, 2015)	After privatization (Author)	Before privatization (Hinnis, 2015)	After privatization (Author)
Loading / unloading	25% Good 50% Bad 25% Really bad	11% Excellent 89% Very good	20% Excellent 20% Very good 60% Good	20% Excellent 47% Very good 33% Good
Piloting, hauling	50% Very good 50% Good	11% Excellent 78% Very good 11% Good	30% Excellent 30% Very good 40% Good	60% Very good 33% Good 7% Bad
Handling of cargo	50% Very good 50% Good	11% Excellent 89% Very good	40% Excellent 40% Very good 20% Good	13% Excellent 53% Very good 33% Good
Transhipment trade	50% Good 50% Bad	11% Excellent 67% Very good 22% Good	40% Excellent 20% Very good 40% Good	13% Excellent 33% Very good 53% Good

5. Conclusion

Analysis of the quantitative data from customers revealed an optimistic group of customers –shipping companies – who gave bad ratings in prior research (Hinnis, 2015) now expect that privatization will solve existing issues. The second group of customers – shipping agents – had different expectations. While in prior research, their ratings were high, they did not appear to believe that privatization will solve any issues and appeared to be quite pessimistic about it.

Qualitative research of interview data coming from those responsible for the privatization, the PA Officer, the MCW (Ministry of Transport Communications and Works) Limassol port privatization project manager, and Eurogate's representative, revealed interesting facts. The PA officer who, according to Hinnis (2015), was aware of the outstanding issues of the container port and believed that privatization would miraculously solve all its problems, continues to show the same attitude, as he expects that all domains of operations will improve. On the other hand, the MCW manager mainly spoke of income that the government would receive such as concession fees, deficiency points, and failure fee, and most importantly, regarding customer satisfaction, the answer was if they do not implement what they intend to do, they will have no customers.

In this respect, the researcher distinguishes that there is no proper structure for the implementation of concessions, and no spirit of cooperation in substance, although on the surface there appears to be one. The PA expects that

everything will be solved miraculously. The MCW manager plays the role of a judge in the sense that, if they do not do succeed they will pay a fine, and would have no clients, without taking into consideration that if the concessionaire has no customers, the consequences will not just affect them but the country on the whole.

Notwithstanding the imbalanced expectation between the PA and MCW, other stakeholders showed optimistic expectations. For example, a representative of Eurogate (Concessionaire) pointed out that via privatization, Limassol may be plays a vital role in linking Europe and Middle East as a hub port based on state-of-the-art container gantries and straddle carriers. He argued that the concession of the port may allow the port to comply the latest technical standards and to remain competitive for the future by channeling substantial capital investments into its development. He noted that all such aspects can be possible due to the port privatization. The privatization might reinforce the Limassol port's sustainability by improving efficiency, reducing CO2 emission, and maximizing safety/security. Other two stakeholders such as the shipping companies and shipping agents also revealed anticipated advantages of port privatization in overall.

In response to the last question, the interviewees specify that both the PA and the Government understand the new role of landlord that is being assumed, and are committed to implementing all the relevant policies. They do so because of the concession agreement for the provision of a better public environment aiming to limit institutional risks and generate transparency, with the ultimate objective to make the Port of Limassol an international hub for world trade. However, the authors retain their optimism despite the fact that the application of theory in practice is not simple but requires vigilance and continuous cooperation from all parties involved to avoid the mistakes made by other ports as Kim et al. (2018) pointed out.

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