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Transforming Dubai Logistics Corridor into a Global Logistics Hub

Balan Sundarakani

Abstract

The case discusses the various factors that bolstered positioning Dubai as the ideal location for a logistics hub, located at the crossroads of international trade and commerce between the Eastern and Western worlds. Dubai is also regarded as the gateway to the world's most progressive markets which include Greater Africa, Indian subcontinent and the East European countries. The case illustrates some of the critical challenges faced by the city in particular and the country as a whole, in the past decade, thereby evaluating the issues and risks that can hinder its strategic logistics developmental roadmap.

The case can be taken up for subjects like Logistics and Supply Chain Management, Operations Management, Global Logistics Systems, Warehouse Management and Strategic Management, and to enrich concepts related but not limited to Facility Location Strategy, Logistics Network Expansion Strategy, Country Analysis, Distribution Hub Location Strategy etc.

Keywords

Global Logistics hub, Facility location strategy, Dubai Logistics Corridor, Logistics sustainability, Multi-modal logistics platform

Introduction

In May 2008, when H H Mohsen Ahmed Al-Awadhi took over as the Vice President, Logistics of Dubai World Central, it was perceived as a major milestone in the transition of Dubai as the Global Logistic Corridor envisaging a multi-modal logistics platform catering to growth and development of the entire for the entire Gulf region. The enlightened rulers and economic planners responsible on the growth and development of Dubai have been working on the repositioning of Dubai as a logistics city of global capabilities over a period of time. H H Mohsen Ahmed Al-Awadhi, being deeply involved in this initiative was fully aware of the potential of Dubai and the prospects it could bring it for global commerce.

This case was written by Dr. Balan Sundarakani, Associate Professor and Program Director, MSc Logistics at University of Wollongong in Dubai. It was prepared using company information, interviews and its intention was to solely provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The author may have disguised certain names and other identifying information to protect confidentiality

Historical Evolution

Dubai, a part of United Arab Emirate (UAE), has been a member of World Trade Organization (WTO) and has always supported open trade and stable trade relations with countries throughout the world. Taking advantage of its open economy, attractive business environment and continued economic growth, the UAE has emerged as a key international trade hub between the Indian subcontinent countries and Western economies.

Some of the major chronological and historical milestones of the UAE in general and DLC in particular are:

1971 - Formation of UAE consequent upon British withdrawal of involvement in the erstwhile sheikhdoms which were also known as the Trucial states

1972 - Completion of the construction of Port Rashid. This was the first deep water port built in the region named after H.H. Sheikh Rashid

1978 - Commencement of the construction of Jebel Ali Port and creation of Port Authority of Jebel Ali to oversee its operations

1979 - Completion of the construction of Jebel Ali Port, which is the world's largest man-made harbour and the biggest port in the Middle East

1985 - Constitution of Jebel Ali Free Zone (JAFZA) as the country realized its importance as UAE has always been the hub connecting both east and west

1991- Merger of Port Rashid and Jebel Ali Port under Dubai Port Authority to oversee the operation of both ports. Port authority PAJA (Port of Jebel Ali) and PRA (Port of Rashid) were merged together to form Dubai Port Authority (DPA)

1997- As the country grew extensively, Dubai Port Authority ranked among the top ten busiest ports around the world. The Jebel Ali container traffic scaled new heights by having more than 50 percent of the total world's container traffic

2007- UAE's major ports became capable of handling 10 million TEU, the highest TEU handled by any country in a single year. The increased level of infrastructure and advanced use of technology made most of the logistics operation in the country easier to handle and Dubai Logistics City was proposed

2011- Jebel Ali upgraded its TEU capacity to 14 million, becoming a multi-modal integrated hub offering sea, air and land connection backed up by the excellent logistics facilities of the port of Jebel Ali. The port was equipped to store and refrigerate goods that required cold storage

2013 – DWC airport become functional and around 36 free zones for various businesses were established under the country's expansion plan

2014 – Dubai selected for hosting the world EXPO 2020 paving the way for launching of the Dubai logistics corridor project - an integrated multi-modal corridor as a restructured business model

Over the years Dubai has grown as a leading logistics hub providing unprecedented logistics facility and extending numerous opportunities to any foreign investor for setting up business with 100% ownership holding and tax-free income.

Location of Dubai

Geographically, the United Arab Emirates (UAE) is located in the Middle East between Oman and Saudi Arabia on the southeastern shores of the Arabian Gulf, the western shores of the Gulf of Oman, and is on the southeast of the Arabian Peninsula (see Exhibit 1). The UAE is one of the six countries that form the Gulf Cooperation Council (GCC) in the Middle East. The UAE is a federation formed by seven different emirates namely: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah and Fujairah. The UAE has a federal structure composed of a Federal Supreme Council, encompassing the rulers of the Seven Emirates, a Cabinet of Ministers, and the Federal National Council, which is a parliamentary body. The capital of UAE is Abu Dhabi and it celebrates its national day on the 2nd of December of every year.

The most important natural resources of the country are oil and natural gas, which are primarily concentrated in Abu Dhabi (91% of the total natural resources); while the other emirates account for the rest. The population of UAE is approximately 9.446 million as per the 2014 census (National Bureau of Statistics, 2015). Although the official language is Arabic, English is widely spoken among the people and English is also the second language for all official communications. Statistics point out that in 2014, the average life expectancy in UAE was 77 years while the literacy rate was as high as 93%. As per the World Bank study in the year 2015, the Gross Domestic Product of the UAE is approximately \$401.6 billion (see Exhibit 2 for emirate-wise contribution). The country has consistently been ranked among the top quartile of the 182 countries studied by UN Human Development and Logistics Performance Indices.

A closer look at the industrial sector of the UAE listed according to the highest categorical weight, reveals that oil and gas, petrochemicals, aluminum, cement, ceramics, ship repair, pharmaceuticals, tourism, transport, real estate and financial services are the major industries. Dubai alone accounted for non-oil related export value of \$126 billion in the total product value during 2013. The total trade among all emirates accounted for \$1065 billion in 2013 which increased to \$1072 billion in 2014 as indicated in Exhibit 3.

UAE is considered to be the top exporter of limestone and the fourth largest exporter of crude oil. At the time when oil exports had reached 2.3 million barrels per day in 2010, the gas production reached around 7 billion standard cubic feet per day for the same year (MIT Media Lab, 2015 and the UAE Embassy, 2015). The natural gas reserves reach is estimated to be 227.1 trillion cubic feet, making UAE the 7th largest in the world. In 2008, the contribution of the non-oil sector to the nominal GDP was approximately 63.2% (National Bureau of Statistics, UAE, 2015).

In this context, HE Sultan Ahmed Bin Sulayem, Chairman of Ports, Customs, Free Zone Corporation and DP World had this to say: "A sustainable and diversified economy is built upon an integrated approach and involves cooperation and coordination across all sectors" 03 June 2015, Majlis Jafza, Dubai Trade - 2015.

UAE's main export commodities are crude oil, natural gas, re-export products, dried fish, dates, pearls, precious and semi-precious stones, gold, pulp and waste paper, sulphur and unroasted iron pyrites, metalliferous ore, metal scrap, organic and inorganic chemicals. (Embassy of the UAE, Washington,

2015). The main import commodities have been sorted by the same source as machinery, instruments and transport equipments, chemicals, food, cotton, accessories, gems and jewellery, man-made yarn, fabrics, base metals, cotton yarn, marine products, plastic and linoleum products and tea (Exhibit 4).

Growth of Dubai

From a historical dunes village to a modern cosmopolitan city, Dubai has made steady and rapid strides. With its multicultural inhabitants, Dubai is considered to be the Switzerland of the Arabian countries. While each emirate contributes to the development of the economy, Abu Dhabi focuses on the investments of aerospace, nuclear power, defence, information technology and petrochemical industries; whereas Dubai has heavily made investments for the development of tourism, logistics, exhibitions, trade, banking and a port for manufacturing and service industries. In addition to crude oil production, the UAE is tagged with non-oil sectors and relies on import of goods and services relating to food, material for building construction, logistics and health care from the Indian subcontinent. Ever since the formation of the country of UAE, Dubai serves as the biggest re-exporting centre within the Middle East.

Emerging Logistics Trends

Most of the logistics activity in the country takes place through the utilization of ports and free zone areas. Having increased the number of warehouses and developed infrastructure and freight facilities, the city's excellence in logistics service sector has been a major factor for most of the development in the country. Dubai which is one of the country's main cities has been attracting a lot of FDI due to strategic geographical location and has been a vital element of the competitive global freight network. Dubai is ranked among the top five locations for trade, logistics, tourism, and finance (Al Jourani, 2015).

Freight forwarding contributes the largest share (63%) along with transportation which is the second largest contributor with about 18% of total logistics revenues, owing to significant distribution activity (see Exhibit 6). The logistics market of UAE accounted for \$ 23.4 billion, which includes the revenues from logistics activities like domestic manufacturing, import and export trading, agricultural and service sectors. Two other significant factors contributing to the growth of UAE logistics market include warehousing which is 14.2% and Value Added Logistics Services (VALS) such as package and crossdocking which contributed about 4.1% (*arabiansupplychain.com, 2015*). The transportation sector would expect a major change with the implementation of upcoming infrastructure development which mainly includes the GCC wide railway network with dedicated freight lines. The road network across emirates is another factor that could improve efficiency in logistics activities as they are expected to be transformed into freight line. The surge in import and export businesses is expected to boost the positive growth of the Dubai logistics market by \$27 billion.

DUBAI AS A LOGISTICAL HUB

Strategically and safely positioned as one of the major logistical hubs in the Middle East region, Dubai is often compared to Hong Kong and Singapore. However, Mr. Mohsen Ahmad's vision and expectation to transform the logistics city into a major global logistics hub needs upgrading strategic, tactical and operational capabilities.

The Master Plan

The original Master Plan of Dubai logistics city revealed in 2006, was limited to the geographical boundary of Dubai World Central, and was hence revamped in 2014 by a revised master plan to combine the greater Jafza and DP World into the Dubai Logistics Corridor (see Exhibit-7). The Dubai Logistics Corridor now connects the Al Maktoum International Airport (AMIA) at Dubai World Central and the Jebel Ali Port (DP World) and the Free Zone (Jafza) into a much bigger, vibrant, robust business model connected by three important modes of transportation together. This idea was envisaged by H.H. Highness Sheikh Mohammed Bin Rashid Al Maktoum, Ruler of Dubai, Vice President and Prime Minister of the United Arab Emirates.

On April 30, 2015, H.H. Sheikh Mohammed issued a law establishing Dubai World Central Corporation and stated:

“DWC aims to attracting and retaining aviation’s training, educational and research companies in addition to intermodal transport companies, logistic services companies and support services companies. (Source: sheikhmohammed.ae - August 18, 2015)

Successful implementation of such a remarkable roadmap is a major task for Dubai as it is a cosmopolitan city hosting more than 65% of expatriate population exposed to extreme weather conditions. Dubai has relied on a number of factors to bolster this and these are examined in detail in the following section.

The Favourable factors

The top ten factors favouring Dubai as a city aspiring to be a sustainable logistics hub are discussed below:

Strategic geographical location

One of the most important factors that make Dubai a logistical hub is its strategic geographical location (Exhibit 8), as it is at the crossroads of important shipping routes. It is located midway between Asia and Europe, linking the Pacific, Atlantic and Indian Oceans. This strategic location coupled with other logistical advantages gives Dubai tremendous opportunities to be one of the leading logistical hubs worldwide. Dubai connections with Red Sea, the Indian sub continent and East Africa increase the success in the free zone of Jebel Ali. The goods manufactured in the Asian countries are distributed through Dubai to various parts of the world including Africa, the Middle East, Russian Commonwealth and to the eastern Europe within two weeks of transit time. The arm length of the city provides key advantage as compared with any other likely city in the Middle East enjoying similar geographic and infrastructural advantages (see Exhibit 8)

Multi-Modal Connectivity

Jebel Ali Port also known as DP World, is considered to excel in connectivity having the best

infrastructure across sea freight ports. It provides more than 90 weekly services to 115 ports globally. Its unrivalled network provides multiple sailings to most ports across the region. Further it enjoys road connectivity making it possible to transit across the Arabian Gulf (DP World 2015) within a period of 2-3 days. DP World is located in Jafza just a few minutes away from 8th busiest cargo airport in the world. Another great advantage is its co-location alongside Dubai International Airport which is equipped to handle 2.7 million metric tons as well as Al Maktoum International Airport, which when completed will presumably be the busiest airport in the world. The road network exceeds 168000 km. in the Arabian region and is supported by a span of 75 km. Metro line network.

The much anticipated Etihad Railway, is a new initiative designed to connect the UAE, west of Saudi Arabia and East of Oman. With a 1200 km network it is expected to carry approximately 50 million tonnes per annum of goods (Jebel Ali Free Zone 2015). This GCC- wide railway will further strengthen UAE's importance and claim to remain the major logistics hub in the years to come (*arabiansupplychain.com, 2015*). The use of multimodal transportation (sea, air and road modes) ensures a smooth and efficient stream of the logistical flows positioning DLC as a tri-modal option presently and a quadra-modal system in the future.

The city infrastructure (Physical, IT and financial infrastructure)

In addition to the geographical location, the infrastructure of the city constitutes a major pillar enabling logistical development. While considering the logistics infrastructure of the city, seaports constitute the most efficient way to transport a very significant quantum of freight over long distances next to road and air. DP World is considered to be one of the largest man made ports worldwide, ranking 9th as the largest container port in the world and the largest port in the Middle East. Having 26 berths, 87 cranes and a surface area of 134.68 square kilometers, Jebel Ali port is capable of accommodating ships of any size (DP world, 2015). By the end of 2015, the port capacity is predicted to reach 19 TEU. This port offers a market for more than 2 billion people. Some of the significant factors that increase the competitiveness and attractiveness of Jebel Ali port are the wide-ranging logistical facilities and services such as maritime legal expertise and maritime insurance.

Apart from physical infrastructure, Information Systems/Technology comprises one of the three major components of the logistics sector. Technology with its myriad features equips companies to enhance their speed of operation, communication, document processing and transparency in logistics operation. Prior to 2009, this technology which is very essential to provide value-added services was not ready available within the UAE, whereas it is highly available and affordable in the current scenario.

In the words of Mr. Mohsen Ahmad, in March 2015, "the Logistics District became the first free zone in Dubai to invest in an electronic system that regulates the process of issuing entry permits. Implemented with Dubai Customs, the system is in line with DWC's commitment to applying smart solutions across all of its districts, corresponding to the Dubai government's strategy to transform the Emirate into a smart city"

The stability of the logistics eco-system of Dubai is ensured by the sound financial infrastructure

due to the presence of global, regional and local financial institutions and insurance companies.

Regulatory and Institutional Structure

To derive full advantage of the logistical infrastructure and services of the city of Dubai, the regulatory and administrative system needs to ensure seamless and efficient flow. In this regard, Dubai faces some challenges that need to be overcome. For instance, all the administrative procedures need to be made available round the clock, 24 x 7. Another aspect that requires to be addressed, concerns the simplification and integration of various steps of the administrative procedures into one or two single steps. This integration is felt necessary as it will decrease the lead times needed to clear the merchandise making the logistical system more efficient and thereby, more competitive. However, it has to be conceded that among the Arab regional countries, Dubai is very much advanced and has implemented several industry standards and codes for easing the business.

Political Environment

Stability or instability in the political environment has an important role to play in attracting the foreign investors, since foreign investors are always cautious and concerned about the political environment of the country where they intend investing their capital. It has also been seen that many investors had to face several problems in countries where there was no stability of the political environment. For free zones to be successful, political as well as economic stability is of prime importance, as foreign investors need consistency in the host country when political environment is concerned. From this perspective, UAE as a whole and Dubai in particular enjoy a very stable political system. The country has also been instrumental in bringing peace among the Arab Spring regions.

Attractive Free Economy

The free zone business model was set up with the intention of streamlining trade and logistics activities across the countries. This model has been instrumental in boosting the country's economic growth by extending various tax exemptions such as corporate tax exemptions, 100% foreign ownership, 100% tax exemptions on imports and exports etc. Each free zone is governed by its own Free Zone Authority (FZA) and mandated business policies of the federal government. As of now, the UAE government has managed to establish a total of 38 free zones across the country (see Exhibit 9) in various formats and the number is likely to swell. Some of the strategic advantages for logistics companies operating in Dubai Free Zones are:

- 100% ownership
- Tax exemption for corporate
- Purpose-built office or warehouse facilities
- Liberal VISA policies
- No Import or Export custom duties
- Abundant availability of space and energy

After the fuel price regulation in August 2015, the country is gearing up for phased introduction of taxes in some cases. The International Monetary Fund (IMF) and other bodies have recommended several options to the GCC countries including introduction of taxation in order that the government may raise more funds and strengthen the revenue base in the near future.

Synergy among the various free zone pockets

Currently there are around 36 operational free zones and more than 5 free zones are in the process of being established (see Exhibit 9). The Government of Dubai has diversified its investment among various sectors to shift the economy away from dependence on oil. The Government's visionary forward thinking policy has been responsible for creating a business friendly environment by entertaining a free market. Technically, the location of the free zone, its co-location and the inter-linkage between free zones act as a catalyst for business growth. Not many countries worldwide have these many free zones geographically based within a radius of 150 kms. Logically this synergy effect helps sustainability in the longer run on the road map towards a global logistics hub.

"It is not based solely on the individual efforts of institutions. The concept of teamwork has been one of the most influential factors for the success of Dubai and the UAE throughout the nation's history. Teamwork is the cornerstone of progress that supports the building of a sustainable knowledge-based economy. We are on the right track towards becoming a leader thanks to the vision of our leadership and their quest for economic diversification and sustainable development" - HE Sultan Ahmed

Availability of labour - the bottom line

The major factor contributing to Dubai's success is that it already handles 60% of middle- east imports catering to more than 2 billion customers in South-east Europe, CIS, MENA region and with the Indian sub-continent. Foreign investors are very much concerned about the lowering of the cost of production, transportation and other overhead costs affecting the logistics. In this perspective, availability of blue collar labour at a competitive cost is considered to be one of the most important factors for logistics in attracting foreign investors. For instance in Dubai, labour from different parts of the world such as Sri Lanka, Bangladesh, Pakistan, Nepal, Ethiopia and Philippines are available at a very competitive salary for the prosperity of the sector.

Competitive cost of doing business

Although in Dubai, cost of facility setup, operation and overheads are higher, this is comparable to other similar logistics hubs worldwide for some top indicators (see Exhibit 10). Apart from the airport landing charge, which is competitive than Singapore and Hong Kong, Dubai has been providing comparable competitive advantage for logistics friendly environment when the goods are to be transited towards west through Middle East corridor.

According to the study report of the European Commission, the location of the logistics clusters is a key element in enhancing the efficiency of urban freight transport systems and initializing relative supply chain activities. Therefore, the location of an intermodal freight logistics centre should be selected

carefully; for otherwise it may cause irreversible consequences in the city planning and may also create bottlenecks that lead to rapid increase in cost in providing transport solutions (Europlatforms EEIG, 2004). All influencing factors for the determination of a location need to be analysed cautiously.

Critical mass of logistics companies

Since the recovery of Dubai financial crisis in 2012, the establishment of companies in UAE has been growing significantly. In fact, the cluster of logistics companies and its various types have been instrumental in uplifting the Jafza's growth.

According to Jafza Vice President, Mr. Mohammed, *"If we take into consideration of the world 50 powerful logistics companies, top 30 of them have presence in Jafza in their business offering. This shows the strength logistics businesses here and creating the competitive advantage of any new comers to locate and co-locate to each other"*.

There has been a tremendous increase in the amount of imports and exports as well as in the number of organizations that are setting up their business within the UAE from 2010. Major international logistics players are preparing for this extensive investment in the logistics operations by increasing their capacity of their shipment and warehousing capabilities along with other value added services.

Organizations based in Hong Kong have chosen Dubai as their hub and gateway to the Middle East and North African Region. Commodities such as pearls, precious materials and metals are the major goods that are imported from Hong Kong to Dubai. Further, Dammam, one of the major manufacturing cities in Saudi Arabia, is closely located to Dubai. It chooses Dubai over Jeddah to export its products to the outside world. Petroleum from Dammam is also being transported via pipelines through Dubai due to the strained relations between Saudi Arabia and Yemen.

Other favourable Factors

Technically, cities with greater logistics capabilities tend to attract more foreign direct investment. Dubai is on the move, providing an extraordinary opportunity for property investors to jump on board and enjoy the ride. As a result of the global financial crisis and also as an aftermath of Dubai financial crisis, property prices in Dubai touched rock bottom in the last quarter of 2010. It peaked again in the first quarter of 2014 and has been stable since then. Yet, in most areas around the logistics corridor, the prices for commercial and residential properties are 20% lower than the peak of 2009 and marginally cheaper than other comparable logistics hubs, which means Dubai real estate now represents extraordinary value for money for investors. While Al-Maktoum International Airport is not yet fully operational, it is expected to function optimally in the near future, which in turn, will drive up the demand for commercial real estate close by and inevitably push up prices. Savvy investors know that in a few years when prices rise, they will reap an excellent return on their initial investment.

Mr. Niall McLoughlin, Senior Vice President of DAMAC Properties, one of the leading property developers based in Dubai, said in an interview, *"The timing of buying a property can be just as*

important as the timing of selling. Buying at the lowest possible price can often be more lucrative in terms of capital gain than picking the exact right time to sell at the top of the market”

Apart from that, other factors causing both positive and negative outcomes are; i) increasing buying power among the MENA customers and strong growth of trade between Europe and Asia; ii) steady growth of the manufacturing and other value added activities in the UAE, Saudi Arabia, Oman, Jordan and Egypt; and iii) expansion of the Suez Canal and its favourable impact on the growth of Middle East North African (MENA) market radius.

The Business Process Mechanism

In the context of logistics management, when any consignment moves from one free zone to another it has to undergo various procedures of customs and legal compliance, which is not only time consuming but also cost incurring. However, with the formation of Dubai Logistics Corridor (DLC), the products travelling within DP world, JAFZA and DWC i.e., the sea-road-air cargo route, will have to go through the customs only once at the first point of entry (see Exhibit 11). After that travel within the corridor will be relaxed as the shipment has complied with the stipulated regulation. This globally unique system has made it possible to process transports more quickly and in a cost-effective manner than ever before.

Operational Benefits

When the DLC business model is complete, probably Dubai’s existing Logistics Performance Index (LPI, 2014) could be improved further. Its innovative policy initiatives spell out that building a business in Dubai is consistently straightforward and constantly monitored with the advice and guidance of the ruler. Therefore, beyond room for any doubt, the synergistic effect is bound to give a new impetus to the sector.

Response Time

Further, the time taken to unload shipment at DP World, clear the containers and transport them to the Al Maktoum International Airport in DWC would just be a matter of a few hours, say approximately four hours. Prior to the formation of the DLC, a lot of documentation and customs work had to be complied with as outlined in Exhibit 12, once the goods left JAFZA for the DWC. Completing all these documentation and compliance of various formalities could stretch over 2-3 days and thus the clearance of the whole shipment from the port to the airport would perhaps take about 4 days. Thus the DLC business model would help the companies to reduce their lead times and be able to enjoy more responsive logistics, while not compromising on maintaining operational efficiency.

Cost of Handling

Generally, in order to enhance the logistics responsiveness, huge expenditure is incurred. However, the implementation of innovative trade solutions by the DLC corridor provides a win-win situation for all the stakeholders - the shipper, the carrier and the consignee. It increases the responsiveness while reducing the costs for the companies. Several documents were needed for customs clearance, which was laborious and time consuming apart from being expensive. Further, at each and every custom point,

financial guarantees needed to be produced for the cargo to go through. In the case of DLC and the single custom based zone, such charges are incurred only once and thereafter the movement in the DLC is custom free which cuts the costs for the companies in particular and logistics overall.

Fragmentation of Ownership

The movement of goods between the free zones faces some problems and barriers. Earlier, companies had to choose free zones suiting their logistics requirements. For instance, companies in frequent requirement of ports and airports would have to open branches both in the JAFZA for the DP world and at the DWC. Now with the DLC, companies need not open branches in both free zones but can easily operate through a single branch with the same level of service and operational easiness. However the message is not fully reached to the worldwide players and awareness of the same needs to be created, as expressed by the Director General.

Dr. Mohammed Al Zarooni, Director General, Dubai Airport Free zone says:

“Free zones play a positive role in the economies of their country, but there is no channel for dialogue to share best practice and provide technical supports”

Consignments, June 2015

The Inhibitors

Over the years, Dubai has undergone tremendous transformation to position itself as one of the most preferred international logistics hub. Some of the key issues that the industry is exposed to relate to Dubai being a small geographical location facing extreme weather conditions. On the flip side, lack of integration among the state companies could possibly escalate furthermore challenges. In addition to this, Dubai continues to face other eco-geo-challenges in an attempt to sustain this position in the long run. Other major challenges affecting the growth are outlined below:

Policies and Regulations

Inevitably, state-of-the-art transportation infrastructure is the backbone of a modern competitive international logistics hub. However, the efficiency and seamless connectivity between the administration and customs are equally important. In addition to this, clearance of goods should be least costly with the fastest possible speed and accuracy. In UAE, it has been observed that the trade facilitation and shipment handling services are not available 24/7 and are highly complex compared to benchmarking cities like Singapore. Transportation of goods by trucks is also restricted during peak hours in order to avoid road blocks; thus increasing the lead times taken by road freight during the wee hours of business. The clearance time without inspection takes almost one day and the numbers of agencies involved can be as high as 3 agencies involved in importing and exporting as opposed to Singapore (0 days and 1 agency). Furthermore, it takes a longer time to import and export goods in UAE (2 days) than in Hong Kong (1 day) and is more expensive than in Singapore and Hong Kong (World Bank, LPI, 2014). However, transparency of the customs clearance and other border agencies along with the

timely and adequate provisioning of information on regulatory changes is lesser compared to Singapore and Hong Kong.

Natural Factors

Extreme temperature (i.e. above 45°C) during summer, high humidity and sandstorms adversely affect the products in the warehouse or while being transported. Extreme temperatures can easily damage perishable goods necessitating the temperature to be controlled while being stored and transmitted. High humidity can damage the packing of consignment and once the packing is damaged exposes the product to further damage. Sandstorms cause sand particles to enter the packing of product thereby spoiling it. These natural factors cause an increase in the costs of warehouse and shipment in general, which is bound to have a negative impact on the shipper's profit.

Appropriate talents, training and retention

According to the Workforce Planning Study, the logistics sector faces a lack of skilled workforce which is of utmost importance for the various projects undertaken to enhance Dubai's position as a logistics hub. This draws light to the fact that there is a gap in the skills required in the logistics industry at the managerial level and what is currently available in the market. Moreover, institutions providing quality training in logistics and other related fields such as architecture, engineering, etc. are very few. Another challenge faced by the UAE logistics and transport sector is the lack of sufficient manpower with critical skill set which is necessary for the execution of most of the logistics activity (*gulfnews.com, 2015*). Dubai is highly dependent on expat workforce and therefore it is extremely difficult to retain existing talents.

Increasing Living Cost

The factors that hinder Dubai from being one of the most preferred logistics hub are the high rents as well as the cost of operation. Increased rents will lead to demand for higher wages by employees. This increases the overall cost of engaging in business across borders. Since the cost of import and export is high, it will also add on to the overall cost. Currently, middle income earning expats find it difficult to cope up with the high rental price in the city. As a result, heavy migration takes place to less expensive cities like Sharjah, Ajman and RAK which are well connected by expressways and are within an hour's drive from the logistics corridor. Other lower rental pockets such as Dubai Investment Park, International city surrounding the logistics corridor are gaining momentum due to the dynamics.

Competition from MENA Region

The sustainability and preference of Dubai as a logistics hub can be influenced by the development of ports and free zones in surrounding regions such as Saudi Arabia, Bahrain, Qatar, Djibouti and Egypt. In the Middle East, U.A.E. was ranked 27th globally in 2014 according to the World Bank LPIs while Qatar occupied the 29th position. However, Dubai loses out to Qatar in some of the dimensions i.e., International Shipment and Logistics Competence, LPI 2014. Other competing corridors in the Middle East are Jeddah Logistics Zone (KSA), Port Said Logistics City (Egypt), Port Salalah (Oman) and Doha

Logistics Park (Qatar) which could create some degree of competition to the Dubai Logistics Corridor. Albeit, considering the other positive externalities between the regional hubs, there can be no doubt of the survival of DLC in the long run (See Exhibit 13).

Processing delay

Potential risks associated with cargo security necessitate more stringent screening of cargo. This poses a major challenge for the officiating bodies to strike a balance between addressing cargo security while allowing international trade to grow. This entails the risk of delay to the consignment as the screening of cargo may take time. Another problem that is prevalent is that since most of the manufacturing players have only trading operations within UAE the logistics sector become more focused on freight forwarding. Since Dubai's logistics sector is not as advanced as Singapore, it lacks the cutting edge innovation and technology that can cut down logistics delays in order to speed up the business process (*khaleejtimes.com, 2015*). This can lead to certain systematic risks as the technology in use is not kept up-to-date which may in turn, lead to systemic errors and cause further delay. Since the supply chain activity relies heavily on coordination between several parties for successful execution, the industry needs to constantly strengthen ties between all players so as to avoid procurement and receivable risks, ensure standardization across the operating bodies, stakeholders and institutions which are very much important to achieve greater efficiency and thus enjoying maximum benefits.

The regional unrest

Continuing Middle East unrest and souring relationship with Iran could create potential problems for UAE's growth. To mitigate such risks, various ports in UAE such as Fujairah, situated entirely along the Gulf of Oman, could play a key role since its strategic location provides easy access to international shipping routes, through which goods can be transported whether for import or export. The winning of Expo 2020 has a great impact on UAE logistics companies which are redesigning their transportation network by investing in four main areas of public transport, transit accommodation, warehouse facilities and a strategic positioned site for high scale supply chain. Furthermore, other GCC countries like Qatar, Kuwait, Saudi Arabia, Bahrain and Oman are intensifying and upgrading their own logistics industry to emerge as alternative regional hubs, pose emerging threats to the UAE's position as the preferred logistics hub in the Middle East.

MANAGERIAL IMPLICATIONS

UAE's logistics is valued 27 billion USD, which accounts for a 15% increase over 2013 figures (*arabiansupplychain.com, 2015*). Dubai has been regularly updating itself with world class logistics infrastructure and with the upcoming railway project Etihad Rail, Dubai will reach the stature of a highly integrated multi-modal logistics hub.

To achieve cost efficiencies and responsiveness in the global supply chain, Dubai's small geographical area must be fully utilized to cater to the international market in conjunction with a high degree of collaboration among the various key entities in the global supply chain. This is bound to draw more and

more organizations to use Dubai as their logistics hub. Another way to achieve cost efficiency is to provide properties and employee accommodation at lower rates in free zone areas as in Dubai Logistics City. The wages provided to the labour can in turn be reduced, thus reducing the cost of operation of organizations.

Goods-in-transit can now be easily transferred between air and sea with no customs clearance within four hours. Similar measures must be implemented by the rest of the free zones and ports to reduce the lead times. The customs and border agencies need to be highly transparent. To fill the gap that exists between the skills available in the market and those needed in the industry, Dubai must encourage more international universities to start up and offer the necessary degrees and programmes in Logistics. Logistics organizations must also engage in training opportunities. Organizations must also invest in research in logistics to attain new heights in logistics platform.

With all the projects undertaken to enhance the logistics infrastructure, emphasis must be towards directing the government policies and regulations to be favourable for businesses to place Dubai as the world class logistic hub (see Exhibit 14). Other possible recommendations that are conceived through the research are:

- Establishment of good rail networks from the sea-port will enhance the strength of Dubai's local connectivity.
- Establishment of International Maritime Centre providing services for ship management, operation and other value added activities will pull liners to Dubai.
- Sea-Air hub connectivity has to be streamlined; enhancing the efficiency of single customs bonded platform through DLC.
- More advanced abilities to provide more value added services at the hubs.
- UAE's inflation rate has to be controlled so that cost of operation of companies does not escalate.
- Skilled logistics professionals and educated workforce will boost the growth of logistics industry in Dubai.
- Awareness for collaboration between supply-chain players has to be created in order to enhance the growth of logistics hub.
- Corporate legal system has to be redefined to accommodate the development of logistics hub.
- Pre-Clearance of cargo should be extended to all logistics companies.

Overall logistics companies can consider Dubai's DLC as the gateway of their entry to the MENA market.

The Road Ahead

As an Oasis in the Middle East, Dubai has been able to attract millions of foreign visitors in the last few years. Great proportions of them have shown interest in investing this city and market. Even though Dubai has positioned successfully as the regional leading logistics hub its international standing, there are many areas where Dubai is lagging behind. The advantage of geographical location and better

infrastructure in the region are some of the facilities which give Dubai an upper hand in the MENA region. Often, Dubai case can be compared with Singapore and Hong Kong in several aspects because of their similarity. Acclaimed as the Switzerland of the Greater Arabic region, the city has been a safe haven for many countries and people.

Current accelerated developments in almost all industrial sectors and promising future projects could possibly strengthen its standing per se. Etihad rail project completion and its fusion along with the DLC through various facilities will help make Dubai a global logistics hub. When DLC becomes fully operational with a single bonded customs platform with the world's biggest airport, it will enjoy competitive advantage due to its multi-modal (Quadra-modal: road+air+sea+rail) platform. How this would impact the global logistics market will depend on the way they operate.

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