LOGISTICS SECTOR DEVELOPMENT INTEGRATION WITH OMAN LOGISTICS VISION 2040: ANALYZING USING PORTER'S VALUE CHAIN THEORY

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ABSTRACT

The logistics industry in Oman seems to have a significant gap between present development andthe national policy known as the Sultanate of Oman Logistics Strategy (SOLS) 2040 which was introduced in 2015. SOLS 2040 aims to develop Oman's logistics sector and position it as a global logistics center. The strategy also seeks to expand logistics employment to 300,000 by 2040, and the logistics sector's contribution to Oman's GDP to 14%. Using Porter's value chain analysis theory, this research intends to evaluate Oman's logistics sector growth in accordance with the SOLS 2040, as well as to identify the key logistical activities that contribute to the development of Oman's logistics sector. A study was performed among 60 logistics service providers in Oman to identify and assess the major logistical operations that provide value to the sector. The findingsindicate that inbound and outbound logistics are the major activities that contribute value to the logistics sector and have a significant influence on markets and trade facilitation. While the majorsupport activities that have a significant influence on the SOLS 2040 goals are human resources and technological development. This study contributes to the analysis of logistics operations that provide value to the Oman economy's logistics sector.

Keywords: Porter's Value Chain, Logistics Business, Sols 2040, Inbound and Outbound Logistics, Business Strategy, Logistics Management

INTRODUCTION

Oman's economy depended massively on the oil sector that contributed 85% to its revenue prior to the oil crisis in 2016 (Al-Wahaibi, 2018). Since the oil crisis, and then the country's economy has faced a huge drop, making the sultanate's government decide to sit a program to enhance economic diversification and return the economy to its previous state. This program is monitored by the Implementation Support and Follow-up Unit (ISFU), and it includes developing three main sectors: logistics, manufacturing, and tourism (ISFU, 2020). What is more, Oman's government has started developing the logistics sector by establishing the ASYAD group that manages and controls many logistics companies and organizations in Oman. ASYAD, with the help of the Ministry of Transport, Communication, Information and Technology (MTIC) and the Implementation Support and Follow-up Unit, set the Sultanate of Oman Logistics Strategy (SOLS) 2040 that matches Oman's vision 2040 to develop the logistics sector to make it one of the top logistics hubs and improve logistics performance index (LPI) as well (Al-Wahaibi, 2018).

Since the development program was introduced, the Ministry of Transport, Communication, Information and Technology (MTIC) and ASYAD in cooperation with different logistics

companies in Oman, improved different areas in Oman's logistics sector such as ports, airports, roads, logistics services, customs, and information flow. The logistics sector increased its contribution to the gross domestic product (GDP) from USD 2,686,100 in 2015 to USD 2,836,600in 2019 (Transport, 2020). However, in the same year, the world bank has shared the logistics performance index where Oman has ranked at 43rd; which is higher than its rank in the previous years at 48 (2016); 59 (2014); 62 (2012) (World bank, 2018).

The Sultanate of Oman Logistics Strategy (SOLS) 2040 aims to improve the logistics sector in Oman and make a global logistics hub. The strategy also ambit to be in the top ten in the logistics performance index (LPI), increasing the employment in the logistics sector to 300,000 by 2040 and increasing this sector's contribution to Oman's GDP by 14%. The strategy aims to integrate different areas in the logistics systems in Oman, which are seaports, airports, public transportation, shipping, and road infrastructure. Also, the strategy has mainly focused on employment and strengthening the competitiveness of the country in the global market. After long studies, the MTIC has come up with four ambitions that are focusing more on achieving the goals which are related to market, trade facilitation, technology, and human capital.

However, there is a huge gap between Oman's target in the LPI and its current position which increased the need to study the logistics market in Oman and to find the main logistics activities in Oman that add a value to the economy, which was covered in this research. Thus, this study intends to analyse Oman's logistics sector's development in line with the SOLS 2040 by using Porter's value chain analysis theory, and to identify the main logistics activities that help to developthe Oman's logistics sector.

REVIEW OF RELATED LITERATURE

There have been numerous studies that cover the logistics sector in Oman, however, most of this research are too old and fail to cover the sector's development since 2015. Al-Wahabi (2018) mentioned in his report about the attractive location of Oman and the location's impact on its economy where it is in the Arabian Gulf, in the east-west trade route. MTIC mentioned in the SOLS 2040 handbook (2015) that Oman's location enables it to be at the crossroad of the Indian ocean connecting trade routes between Asia, Europe, Indian continent, and Africa, which is an excellent chance to Oman to access to the international shipping market. This advantage supportsthe logistics sector and gives it a unique opportunity to participate in Oman's economic diversification and contributed to its GDP with 3.75% in 2018.

Overview of Logistics in Oman

After the massive fall in the oil prices globally, Oman's government, in the 8th five-year development plan (2011-2015), has set a plan to develop the infrastructure to support the non-oil exports such as chemicals, health care, mining, food, and alternative energy. While addressing the logistics sector, many areas need to be mentioned to provide a clear picture of the current situationof the logistics sector in Oman, which are the transportation, warehouses and storage facilities, customs, free zones, and other logistics areas.

Furthermore, the transportation in Oman is one of the main factors that has a huge impact on the logistics' sector development. Many research and reports have covered the development of three types of transportation (sea, land, and air) that are used in Oman as described in Table 1.

Table 1
MODES OF TRANSPORT USED IN OMAN

Sea Transportation	Land Transportation	Air Transportation
Al-Wahabi (2018) and Baxter(2018) mentioned in their research that the sea transportation is the most critical area in the country's logistics where 80% of the imports are coming from the seaports. The World Bank (2014) has stated in their report that Oman ports handles about handled 4.9million TEUs of sea cargo and26.6 million of general cargo in2019 which is 10.7% higher than he cargo that was handled in2018, which were which means that they play a huge role in the movement of the cargo regionally and globally. Moreover, the management of Salalah port has mentioned in their annual report (2019) that the port is a leading transshipment port and one of the biggest multipurpose seaports within the middle east and "the region's leading container shipment port." By 2020 the porthas increased its revenue to reach OMR 64.724 million. In contrast, Sohar Port is an international hub where it can handle 2,032,464TEUs of containers and 74,719RORO vehicles, and 14,603,418tons of bulk in 2020 (Sohar Port,2020). What is more Duqm port is the largest special economic zone development globally, where it supports the Oman dry dock company to repair and build vessels. Moreover, sea transportation supports the tourism sector where Sultan Qaboos port in Muscat and Khasab port in Musandam are the tourism gateways to Oman where both ports have different facilities that serve the cruise ships and the passengers. Two other local ports are managed by the Marafi company. These ports are Suwaiq port and Shinas's port, where both are used for local delivery between ports by using small wooden dhows and flat bottom vessels (Baxter,2018).	MITC also mentioned in their annual report (2019) that Oman has ranked 2nd position in road infrastructure quality and 8th position globally. According to the annual report published by the Ministry of transportation, communication, and technology in 2019, the government was able to build roads around Oman with a length of about 32,924 Km. The report also entioned that the ministry was able to build a 15789 Km Road that serves society and businesses and linking different locations around Oman. One of the projects that finished in 2019 is the Al Batinah expressway with 270 Km length that links between AlBatinah governorate and Muscat. This project has positively reduced traffic congestion between AlBatinah and Muscat Wilayas (transport, 2020). Oman roads connect the Wilayas and link Oman with its neighboring countries, Saudi Arabia, UAE, and Yemen, and helped to improve inland deliveries through the countries' borders. Al-Wahabi, M (2018) has mentioned that 66 million tons of minerals are exported from Oman to UAE and KSA through the road borders.	Oman airports management company OAMC (2018) mentioned in their report that their primary mission is to "manage and develop the gateways to and beyond Oman" to be one of the top 20 airports in the world by 2020. The company has worked in the previous year in developing Salalah and Muscat airports to be international airports. Al-Wahabi, M (2018) mentioned that Muscat airport has grown by 145% since 2010. In 2019 the airport was developed with $1.8 billion in area 580,000 m2. This has enabled the airport to handle 48 million TEU of cargo nd 20 million passengers annually (Baxter, 2018). In 2019, the airport has received 16 million passengers and 240,284 tons of cargo within 117,966 flight movements (WorldBank, 2014). Simultaneously, Salalah airport has developed 65% since 2010, according to OAMC's reports. The airport can handle 1 million TEU of cargo and 2 million passengers annually. In 2019, the airport received 1,358,845 million passengers and 1,394 tons of cargo in 12,056 flight movements (World Bank, 2014). OAMC also had built domestic airports to serve the people to move between different areas in a short time. Sohar and Duqm airports are the main local airports that were built recently (Ithraa, 2018). Both ports started their first local flight in 2017. These ports are built to support the Sohar and Duqm industrial areas' intramodality with a handling capacity of 2,500 TEUs per year. In 2019 these domestic airports received 386,105 passengers within 3,076 flight movements (WorldBank, 2014).

According to the Directorate General of Customs Book about bonded warehouses, Oman's government has applied the bonded warehouses in different regions in Oman. The warehouses aimto store the imported cargo until the customs clear them, and the owner pays the customs duties and

other expenses (Omancustoms, 2019). Many activities are happening in the warehouse, such as store pack package duty-free shop operations attaching ballots and restoring the goods. These bonded warehouses, except all the imported cargo from Gulf Cooperation Council (GCC) countries, are liable to customs duties. Also, these warehouses receive cargo from an unknown destination (MTIC, 2015). Many warehouses and storage facilities are mostly located inside the ports to support the port users or in the free zones to store the inventory before delivering it to thenext destination.

Moreover, Customs authority in Oman is working to ensure that all the cargo exported and imported is inspected in the shorter time possible. To achieve that, they have introduced the bayan system. According to the customs authority (2018), it is an "integrated electronic custom system" that allows the traders to have access to all the customs procedures and processes and finish all their transactions online without visiting the customs office to do the paperwork. Once the customs authority started using the Bayan system, they could reduce customs clearance time from 49 hoursto six hours for sea freight and four hours for air freight (Baawain & Daud, 2016). By applying the bayan system, the customs authority became able to increase the number of imported, exported, and re-exported cargo. Figure 1 shows the volume of imported, exported, and trans-shipped cargo inspected in Oman ports in the last three years.

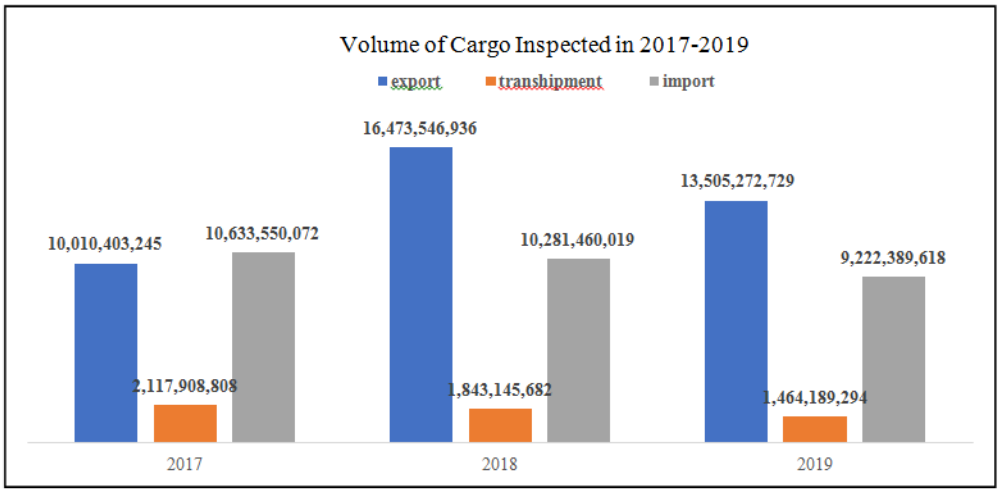

FIGURE 1
VOLUME OF CARGO INSPECTED IN 2017-2019SOURCE: OMANCUSTOMS, 2018
Source: Omancustoms, 2018

Ithraa (2015) mentioned that there are many free zones in Oman located in Sohar, Duqm, Salalahports, & Mazyounah. The first three zones are located close to the seaports in the same area, while Mazyounah free zone is located close to Yemen borders. These three zones have a large land with industries in different specialties, for example, plastic, iron, and food processing. Oman's government has paid great attention to these free zones by supplying them with necessary infrastructures such as roads, telecommunication, electricity, Internet, and other necessary utilities and services, so it can help to develop the logistics sector in Oman. Supporting these areas from the government would help to encourage the investors to start their businesses there and to attract foreign investments. Linking the hinterland free zones with the seaports and airports will significantly impact many businesses in Oman and the logistics sector, where there will be a smooth movement of raw material to the free zones and then from the free zones to the hinterlandor seaports located in the same area.

While mentioning the connectivity and logistics sector, Oman's government plans to provide a logistics area that supports the free zones and ports, which is Khazaen. Khazaen economic city

(KEC) is an integrated economic city located in Barka. According to an Oman news agency report,the economic city includes extensive facilities that will integrate the logistics sector to higher levels. There are several activities are expected in the KEC such as an inland port, intermodal rainterminal, warehouses and distribution facilities, light industry, cold storage facilities, open storage yards, and truck parking. This economic city will help increase the investments in many areas, not only the logistic sector but also its reflection on improving its GDP.

Theoretical Framework

The research will be constructed based on the Michael Porter's value chain analysis theory. It wasintroduced by Michael Porter in 1985 in his book "Competitive Advantage". The main goal of Michael Porter's value chain is to analyze "the internal activities" of any business or company to identify the activities that add value to the business and "understand the cost" that follow each activity. This will help to increase the profit and efficiency of the businesses (Eby, 2017). Michael Porter had classified the organization's activities into two groups: primary activities and support activities (Sutarmin & Jatmiko, 2016). The primary activities are activities that directly impact creating the product or service, while support activities are the activities that support the primary activities, which are explained in Table 2.

Table 2
PORTER VALUE CHAIN ACTIVITIES

Primary Activities		**Support Activities**	
Inbound logistics	It is about the activities involved with receiving raw materials to be used in manufacturing processes. To identify the activities that create value, the company will calculate the real-time inbound inventory and raw materials delivery. The company also measures the performance of storage of the raw material and other inbound inventory.	Firm infrastructure	It is related to the company as a whole and the activities related to the organization structure and the departments in the company. To identify the activities that create value, the company will evaluate the performance of the management, finance, legal, and planning department in the organization
Operations	It refers to all activities involved in converting the raw materials or semifinished goods to a ready-finished product. To identify the activities that create value, the company will define the standardized models they follow to do the company's operations. They will also calculate the real estimated time to reach the inventory or apply the services.	Human Resource Management	It involves all the activities related to the employees. To identify the activities that create value, the management will evaluate what the company provides for its employees, like professional department training programs, competitive wages, and recruiting
Outbound logistics	It refers to all the activities involved in storing and delivering the finished goods to the final customers. To identify the activities that create value, the company will evaluate the order processing procedures, costs, and time. They will also measure how many times they have relived a full truck delivery	Technology development	It is related to all the technologies and researches used to improve the quality of the activities in the company. To identify the activities that create value, the company will evaluate its technologies to integrate its supply chain. It is also calculating the real-time sales that will significantly

			impact the value created in the company
Marketing and sales	It refers to implementing strategies to market for the company, the services, and products that it provides to reach the target customers. To identify the activities that create value, the company measures the pricing of products and services that they provide where they look for low prices of products. They will also measure their communication and promotion performance, which are the main factors that affect the company's revenue and its relationship with other partners and customers in the supply chain	Procurement	It involves all the activities related to ordering and purchasing the company's needs. To identify the activities that create value, the company will be elaborating its relationship with the suppliers, purchasing products and services from the suppliers, and measuring the real-time inventory
Service	It is related to the services provided to the customers before and after the sale. To identify the activities that create value, the company evaluates the services that they provide besides the products they provide, like delivery, repair, customer service, service follow-up, refund, and product return.		

Both primary and support activities are complementary to each other. For example, a company cannot receive an inbound order without placing an order by the procurement department. Kumar&Rajeev (2016) had elaborated in their research that the value chain depends on the pricing strategyand cost structure. The value chain will help companies to understand their capabilities to improvetheir competitive strategy. It will help the company to rethink about pricing their products or services in a way that keep its competitive advantage high and cover all the production costs and expenses. According to Michael Porter (1985), there are three steps that companies should followto conduct a porter value chain analysis. First, the company must analyze the main activities involved in producing a product or providing a service. The company must then assess each product's value and check whether it provides a cost advantage or differentiation to the company. Lastly, the company must determine strategies that can be used to double the competitive advantage and support the weak areas in their supply chain.

METHODOLOGY

This research is built up on a descriptive research design where quantitative methods were used todescribe the current situation of the logistics activities in Oman by referring to the Michael portervalue chain framework as an analytical tool. It also describes the performance of the logistics companies in Oman and their readiness to achieve the SOLS 2040.

The survey questions aimed to identify the main logistics activities that create value for companiesand Oman's economy. While creating the survey questions, Michael porter's value chain activitiesare used to clearly define the main logistics activities, the value that they create, and the performance of the companies in each activity. The logistics services providers in Oman were considered as the target population. This step was achieved by contacting the Chamber of Commerce, Oman to obtain a list of the logistics services providers around Oman. There are 1382

logistics providers in Oman and out of that, 1050 logistics services providers are located at the main cities Muscat, Suhar & Salalah due to the logistics business diversifications, e.g.: airports, seaports, and free zones.

The second step was to map the location of the logistics service providers to know where they areheavily located, which are listed in Table 3. There are 100 logistics services providers have been conducted via both email and telephone, however only 76 were responded to the survey questions.Out of 76, 16 respondents' companies were providing several incomplete information and they were filtered out for this study to avoid any bias in the analysis process. Finally, only 60 respondents' feedback were used as final data. This helped to identify the sampling technique that was employed to conduct the research, which is purposive sampling.

Next to define the synchronization between the logistics companies and the governmental authorities to develop the logistics sector in Oman and to track the readiness of the logistics sectorto achieve the SOLS 2040 plan from the industry perspective, the research has used the secondarydata. The secondary data is extremely useful to be used in a descriptive research where the data is collected and analyzed from reliable sources. The study aimed to analyze the correlation betweenthe SOLS 2040 ambitions and the current situation of the logistics sector.

Table 3
DISTRIBUTION OF LOGISTICS SERVICE PROVIDERS AROUND OMAN

	Warehousing	Custom Clearance	Sea Transportation	Air Transport	Vessels Hiring	Loading/ Unloading	Total
Muscat	40	258	271	20	8	128	725
Suhar	11	141	35	0	0	19	206
Salalah	4	75	31	3	2	14	129
Ibri	1	10	26	0	0	7	44
Al Rustaq	2	15	54	0	0	9	80
Al Buraimi	1	27	5	0	0	1	34
Sur	2	6	17	0	1	10	36
Nizwa	1	9	23	0	0	2	35
Kasab	1	12	7	0	2	8	30
Haima	3	2	6	0	1	3	15
Ibra	0	5	46	0	0	7	58

(Source: Chamber of Commerce, 2021)

FINDINGS

The analysis is based on 60 responses of logistics services providers in Sohar, Muscat and Salalah. The respondents were asked to select the top three main logistics activities in Oman. The seaports activity has the highest rate where 50.8% of the respondents (49 votes) has selected it. While airports activity has the second-highest rate with 31.1% (29 votes). 4.9% of the respondents havevoted for road and land transport (35 votes) as the main logistics activity in Oman, while 8.2% ofthe participant voted for warehouses and storage facilities (27 votes). Finally, Customs activity 26 votes with 3.3% of the total participation, and other activities are presented in Figure 2.

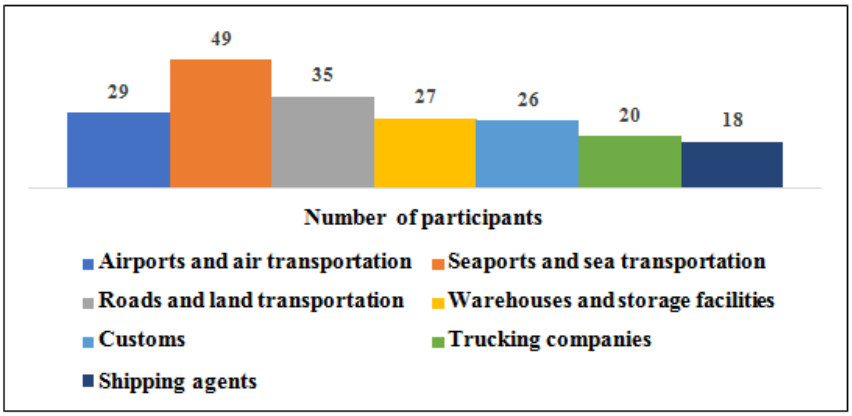

FIGURE 2
THE MAIN LOGISTICS ACTIVITIES IN OMAN

Table 4 shows that the correlation between the main activities and the activities that add value to the economy is 0.575. This number means that there is a strong positive correlation between beingthe main logistic activity and creating more value.

Table 4
CORRELATION BETWEEN THE MAIN LOGISTICS ACTIVITIES AND THE LOGISTICS ACTIVITIES THAT CREATES A VALUE TO THE BUSINESS

Main logistics activities			Logistics activities that create more value
Main logisticsactivities	Pearson Correlation	1	0.575
	Sig. (2-tailed)		<0.001
	N	60	60
Logistics activitiesthat create more value	Pearson Correlation	0.575	1
	Sig. (2-tailed)	<0.001	
	N	60	60

Next, the following analysis will identify which activities most companies used and measure their performance in each activity. The Porter value chain activities are divided into two main activities,which are Primary and Support activities, as discussed in Section 2. The respondents were asked to select the main primary and support activities to which their businesses focus on. For primary activity, Inbound and outbound activities are the most voted activities with 33.94% and 32.12% consecutively, while the service activity was the lowest one (10.09%) compared than others (Figure 3).

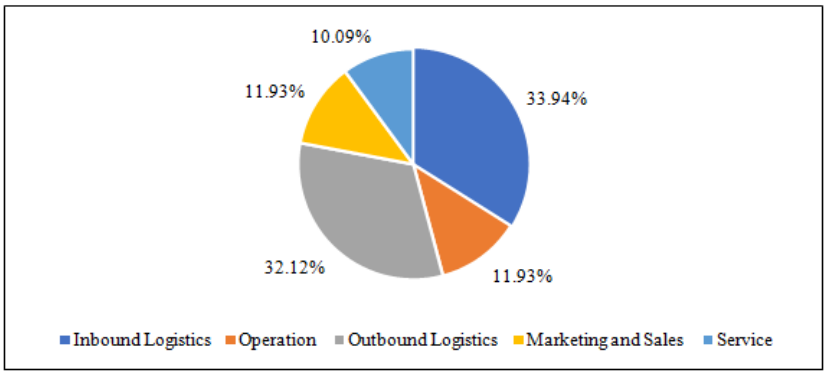

FIGURE 3
THE MAIN PRIMARY ACTIVITIES

Figure 4 shows the support activities that the respondents focus on more in their businesses wherethe votes of all the activities are very close; however, the procurement has the highest votes (27.17%), while the human resource activity has obtained the lowest vote (21.74%) compared than other activities. Overall, it summarizes that all the 60 logistics services providers are applied all the support activities in their business since there is not much different in the percentages of each support activity.

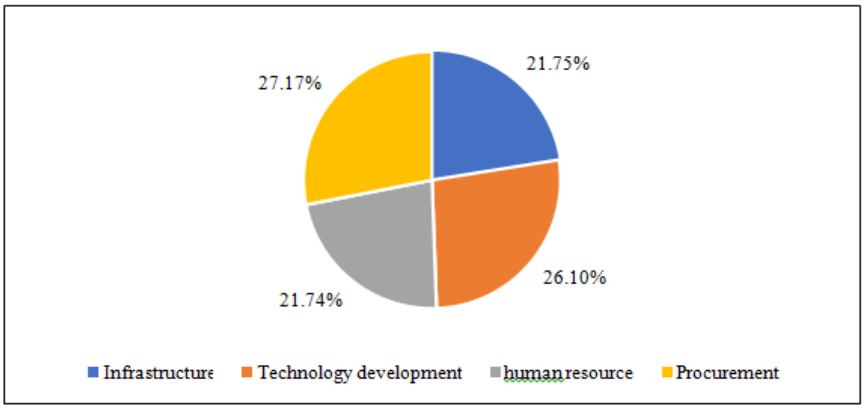

FIGURE 4
THE MAIN SUPPORT ACTIVITIES

Support Activities - Porter Value Chain

Detailed survey was conducted to obtain more information about the performance of the logisticsservices providers for each activity which will be discussed below.

Firm Infrastructure

The respondents were asked to choose the most effective functions that add value to their company's productivity. Table 5 shows the results where 62.2% of the respondents selected Planning and Quality Management (19 respondents for each function).

Table 5
THE MOST EFFECTIVE FUNCTIONS THAT ADD VALUE TO THEIR COMPANY'S PRODUCTIVITY

	General Management	Planning	Finance	Accounting	Quality Management
Number of respondents	15	19	4	3	19

Human Resource Management Performance

The respondents were asked about their opinion about some statements related to the human resource management in their company. Table 6 shows the statements and their responses. It summarizes that in total more than 60% respondents are strongly agree and agree with the human resource performance at their workplaces.

Table 6
THE PERFORMANCE OF THE HUMAN RESOURCE MANAGEMENT IN THEIR COMPANY

Statement	Strongly agree	Agree	Disagree	Strongly disagree
The human resource department in the company improves the work environment	38.3%	40 %	16.6 %	5%
The human resource department in the company improves the employees' skills	28.3%	36.6 %	18.3 %	16.6 %
The human resource management of the company involves the employees in dictions made in the company and provide them with any updates in the company's policies, rules, and regulations	23.3%	53.3 %	16.6 %	6.66

Technology Development

Technology development is about studying the services provided by their business to look for any improvements. To measure the application and development of the technology in logistics companies, the respondents were asked about how regularly their company upgrades its services.

There is 46.7% of the respondents said that their company is always upgrading the technology services that they provide and 45% of the respondents that their company is sometimes upgrading the technology services. While the remaining 8.32% said that their company is rarely upgrading.

On top of that, 31.7% of respondents mentioned that their companies have used a latest and updated software and technologies to upgrade the work, for instance System Applications and Product System (SAP), Sertica, Warehouse Management Software (WMS), Enterprise Resource Planning(ERP), and the Bayan system. However, 68.3% of respondents said that there are using the old version of technology (back to 10 to 15 years) in their daily logistics business operation. Table 7 describes the software used by the logistics companies in Oman.

Table 7
SOFTWARE USED BY THE LOGISTICS SERVICES PROVIDERS IN OMAN

Enterprise Resources Planning (ERP): It is used in transportation and logistics companies to manage the distribution processes and staff (1ci, 2020).	Halliburton Management System (HMS): It is used in freight shipping and trucking company to manage the deliveries (hms-services, 2020)	Bayan System: It is a Electronic Single Window System that is used in custom entities to manage the exports and imports (Customs, 2019).
Very Narrow Aisle System (VNA): It is a software used in warehouses for stacking and picking the inventory (Bob Trebilcock. B, 2019).	System Applications and Products System (SAP): It is used to procees the data and manage the information flow in the organization (Stefanini, 2019).	Radio-Frequency Identification (RFID): It is mostly used in warehouses and trucking companies to track the location of parcels and inventory (Zhang. X, 2019).
Sertica: It is used in procurement department to manage all the procurement processes and communicating with different parties (logimatic, 2019).	Crew Inspector: It is mainly used in shipping agencys to contact with the ship owners and the ship crew (crewinspector, 2018).	Warehouse Management Software (WMS): It is used in warehouses to help managing the day-to-day operations (IQMS, 2016)

To enhance the logistics business operation, the respondents were asked if they apply any of the Industry 4.0 technologies (e.g: Big Data, Blockchain, etc) in their company. There is 30% of respondents said that they use automation technology in their business operations, and 18.3% of respondents said that they use the Internet of Things. While 11.7% of respondents mentioned that they are using Blockchain technology, and 5% of them are using Robotic systems. However, 35%

respondents said none latest technology related to Industry 4.0 has been used in their logistics companies.

Table 8
INDUSTRY 4.0 TECHNOLOGIES USED IN THE LOGISTICS COMPANY

	Automation	Internet of Things	Blockchain	Robotics systems	None
Number of respondents	30%	18.3%	11.7%	5%	35%

Procurement

Procurement is an important activity that is useful to support other primary activities where the procurement department in the company manages the orders of products and services and purchases them from the suppliers. The respondents were asked about their relationship with the suppliers that they obtain their supplies from where 52.5% of the respondents said that they deal with the regular suppliers and sometimes they refer to new suppliers. While 27.9% of them said that they deal with the same suppliers every time. On the other hand, 18% of the respondents said that they deal with a different supplier for each order.

Primary Activities - Porter Value Chain

Primary activities are related to the direct activities of the company. The survey questions were created to conduct more information about the performance of the logistics services providers in the primary activities, which will be discussed below.

Inbound logistics

Firstly, the respondents were asked to select the inbound logistics sub-activities that their company is mainly focusing on. Figure 5 shows the results where 50% of the respondents selected material handling as the main sub-activity. The second highest sub-activity is warehousing, where 26.7% of the respondents selected it. While 10% of the respondents selected vehicle scheduling, 11.7% of the respondents selected inventory control, and only 1.7% of the respondents selected reverse logistics.

One of the ways that the companies can do to create a value to the activities in a company is applying lean strategies to reduce the costs and time. The respondents were asked if their company uses leans strategies where almost all the respondents said yes, their company is using lean logistics while only 4 respondents said that their company is not using any lean strategy. They were also asked about their opinion if these strategies are beneficial or not, 74.3% of the respondents said yes, it is beneficial, while 5.7% of the respondents said No, and the rest 20% of them said maybe.

Part of the inbound logistics is inventory control, where the company needs to control over the inventory, they have to save time and money. The respondents were asked about how they deal with the inventory to create more value for the company. There is 43.3% of the respondents said that they are keeping a high inventory, while 36.7% of the respondents said that they order a specific amount of inventory that will be used immediately, which means they order when they need it. The other 20% of the respondents selected none of the above choices, which means that they might use another way to deal with the inventory or they are providing other services that are not related to having any inventory.

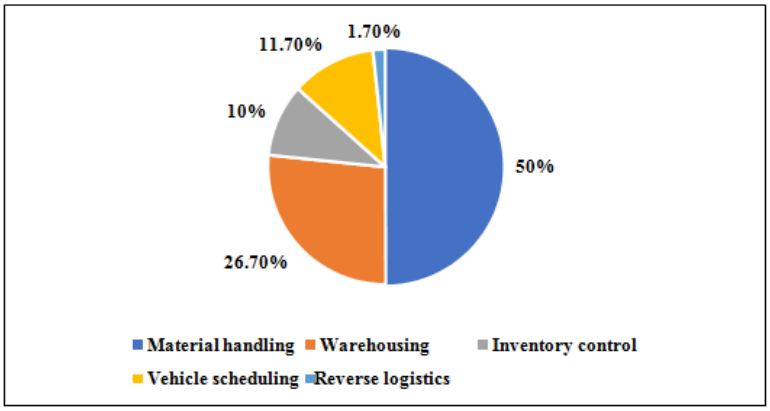

FIGURE 5
THE INBOUND LOGISTICS SUB-ACTIVITIES

Operations

Operations in the value chain refer to all the procedures for converting the raw materials to finished or semi-finished goods, including labelling and packaging. The respondents were asked to choose what is their position in the logistics industry where 53.5% of the respondents said they are part of a long supply chain while 46.5% said they are outsourcing companies. Moreover, the respondents were asked to select the main sub-activity that the company does to creates more value, and figure 11 shows the results. 44.3% of the respondents selected machining, 24.6% of them selected packaging, and 16.4% selected equipment maintenance. While 8.1% of the respondents selected Assembly and 6.6% of the respondents selected printing and facility operations.

Outbound Logistics

Outbound logistics is part of the value chain's primary activities. The respondents were asked to select the sub-activity that they mainly use in their company. Figure 6 shows the results where 45.9% of the respondents selected distribution, 18% of them selected storing finished and semi- finished goods, and 9.8% of them selected material handling. While 14.8% of the respondents selected delivery, 3.3% of them selected vehicle scheduling, and the remaining 8.2% selected order processing.

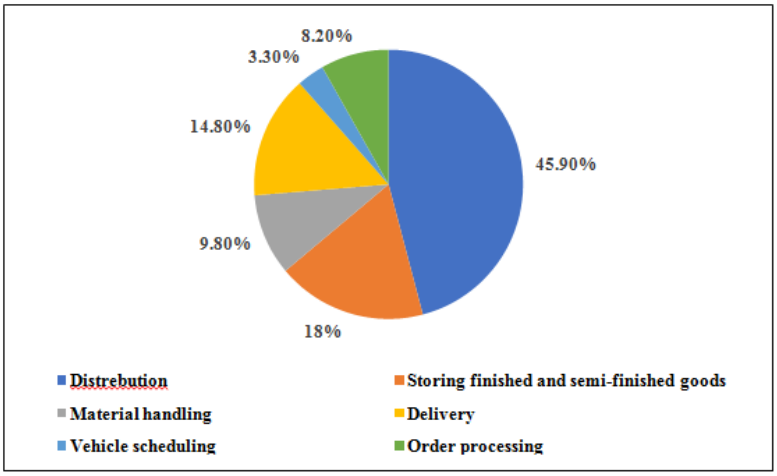

FIGURE 6
THE OUTBOUND LOGISTICS SUB-ACTIVITIES THAT ADDS A VALUE TO THE COMPANY

Since delivery plays a huge role in the logistics sector, the respondents were asked if they are scheduling their deliveries. 81.6% of the respondents said that they schedule for the deliveries while 18.3% of them said that they do not schedule for the deliveries; whenever they receive an order, they immediately deliver it. Moreover, the respondents were asked about the vehicles that the company uses for distribution and delivery. 58.3% of the respondents said that they use their own vehicles, 28.3% of the respondents said that they rent the vehicles that they use, and 13.3% of them said that they refer to an outsourced trucking company to deliver their shipments. On thesame topic, the researcher asked the respondents about their opinion about which delivery function between company owned the vehicles or outsourcing is more costly. There is 56.6% of the respondents selected company owned the vehicles is more costly rather than outsourcing the delivery function to the third parties.

Preparing the shipment to be delivered is called the order process. The respondents were asked about the time they spend to process and order from the time they receive it till delivering the shipment to the customer. 22% of the respondents said that they spend a few minutes to process an order, 59.4% of the respondents said that they spend less than 5 hours to process an order. However, 18.6% of respondents mentioned that they spend more than five hours to process the order.

Marketing and Sales

Marketing is one of the important activities to any business where it helps to promote for the products and services that the company provides. The marketing department in any company and

marketing companies is responsible for promoting the business and making it known in the marketby helping to make the business attractive to attract more customers. The respondents were asked if they have a marketing team or refer to a marketing company to promote their business. 56.6% of the participated companies have their own marketing team while 43.4% of the participated companies refer to a marketing company to promote for their business. The respondents were also asked to identify how do they market for their business. 50% of the respondents said that they use social media for marketing, 18.4% of the respondents said that they use online sales system, and the remaining 31.6% of them said that they use direct marketing.

Having good communication with the client is particularly important to win their loyalty to the business. For that, the companies need to find the best way to communicate with the client. The respondents were asked about the way of communicating with the clients. 66.6% of the respondents are contacting with the clients via emails, 11.6% of the respondents are contacting with the clients via phone calls, 10.2% of the respondents are using social media, and 11.6% of the respondents does site visits to the clients.

Lastly, the respondents were asked if they think that marketing helps to create value for the business where 90 % of the respondents said yes, it adds value to the business. While 5% of the respondents said no, it does not add value to the business, and another 5% of the respondents saidit might be adding a value.

Service

Service refers to activities that maintain the product or service to let the customer get a better experience, including customer service, maintenance, repair, refund, exchange, warranty, and replacement. The respondents were asked to choose which of the service sub-activities is mostly used in their company. The results found that where 60% of the respondents selected customer service as a sub-activity, 21.6% of the respondents selected follow-up, 8.4 % of the respondents selected Maintenance as a sub-activity. While 5 % of the respondents selected product return and

refund as a sub-activity.

Since all the previous sub-activities are provided after selling the product or service, the respondents were asked to agree that providing a service after sale creates value to their company. 70% of the respondents agreed with the statement, 15% of the respondents disagreed, and the remaining 15% of respondents were neutral. Since, most of the respondents selected customer service as a sub-activity, so they were asked if they have any special customer service procedures. 75% of the respondents said yes, they have, while 25 % said no they do not have. Then the respondents were asked if using the customer service procedure help to upgrade their company's services. 53.3% of the respondents strongly agree with the statement, 33.3% of the respondents agreed, and 13.4% of the respondents disagreed.

Combining Porter Value Chain Activities and the SOLS 2040 Ambitions

The best way to analyze the development of the logistics sector by using the Porter value chain analysis theory is to combine both SOLS 2040 ambitions and the Porter value chain activities.

Market

To improve the market of any country people, need to look at the accessibility of foreign and domestic market. Also, to implement advertising, promotion, and marketing for what the countryhas to encourage foreigners and local people to start up their business in the country. The improvement in the market can be measured by "direct physical measures" such as the number of containers, tonnes of sea freight, rail cargo, air cargo, and market changes. In Oman's case, the SOLS 2040 marketing team are working to improve the country's market by:

- Analyze opportunities for Oman to use its location as an attractive factor to improve.
- Understanding the changes of technology, trade flow, and business trends to find any opportunity to apply them in Oman's market.
- Design a brand for Oman's logistics to be known in the region and the world by creating afull marketing plan.
- Creating programs to assist the connecting of the logistics strategy within Oman.

There are many activities in the value chain that matches what was mentioned previously. First, Marketing is the most important factor that attracts local and foreign investors to start their businesses in Oman. According to the survey conducted randomly with many logistics companies, most companies follow the trends of marketing by using social media to market their products and services. They have sufficient awareness of the importance of marketing in creating value for the business. Procurement is also one of the activities that can help in achieving the market ambition. When companies want to order for their needs and purchases, they can refer to local businesses to help them expand and produce more. This will help in introducing more local businesses, and instead of order from overseas, international companies can build up their branches in Oman. A big supporter of the markets is the logistics, whether it was inbound or outbound logistics. Having logistics facilities and logistics services providers will help to make the transition from raw material to finished and semi-finished goods smoother, which is another factor that will attract more customers to invest in Oman's markets.

There are many industries that can be attracted to establish their businesses in Oman, as Table 9 shows the industries and the logistics services that it requires.

Table 9 NEW INDUSTRIES TO SUPPORT THE LOGISTICS SERVICES IN OMAN	
Industrial sector	**Logistics activity**
Chemicals	Liquid logistics
Automotive	Transshipment Sun assembly Spares and parts manufacture and distribution
Oil and Gas	Equipment parts and servicing Rig constructions, storage, and repair
Maritime hub	Shipbuilding and ship repairSpares distribution Registration and related activities Fuel supply
Healthcare	Pharmaceuticals Medical consumables Medical equipment
Construction and mining	Sub-assembly Spare's distribution/manufacture
Railway	Maintenance Manufacture rolling stockServices & consultancy
e-commerce	Warehousing and distribution
UN and humanitarian	Aid Repacking and redistribution, warehousing
Aerospace	Aircraft sub-assemblyMaintenance Parts redistributionCatering Space tourism Satellite support and launching
Retail and FMCG	WarehousingProcessing Packaging Distribution
Food	Storage ProcessingPackaging Re-distribution
Alternative energy	Hydrogen economy (automotive)Wind/wave turbines Solar technology

Source: SOLS2040 handbook

By providing high quality logistics services that serve these industries, Oman will become an industrial country. With the Ministry of Transport, communication, and technology's endeavour to connect all the ministries, logistics institutes, and companies in Oman in one platform, it is very important to encourage the companies to start utilizing technology that will help to ease and smooth the processes that they do. It will also help to make the business known to others. For example, a logistics service provider can register in the System Applications and Products system (SAP) so other clients can see his company and what it provides.

Trade Facilitation

The main aspect of facilitating the trade is by improving the customs services and procedures in away that smooths the movement of the cargo in seaports, airports, and land borders. The main goalof trade facilitation is the free movement of goods and improving security. This can be achieved by applying electronic transfer of data and advanced notification of cargo with track and trace. Having such a platform that involves different trade parties, including ship lines, importers, exporters, freight forwarders, customs, and ports will smooth the custom procedures in seaports, airports, and land borders. It will also ease the procedures of cargo handling, and the movement of the cargo from the borders to the warehouse to the customer's premises will help easily clear the cargo in the gates and track their locations. An important point that helps to keep the

improvementgoing is by training the custom officers about the new procedures and hiring educated and trained employees. In Oman's case, the SOLS 2040 trade facilitation team are working to improve the country's trade by:

- Improve the flow of transactions and documents across the supply chain and ensure to havea lean supply chain by removing any process or procedure that leads to delay the movementof cargo or documents.
- Speeding up the processes and procedures of establishing, registering, and licensing any local or foreign business.
- Improve the way of monitoring the procedures related to facilitating the trade.

There are many activities in the value chain that matches what was mentioned previously. First, since the trade facilitation is mainly focused on the customs and improving the movement of the cargo and information, a big supporter for this is the logistics sector, whether it is for inbound or outbound where both are focusing on the movement of the cargo inside the country or through its borders in exports and imports. Soundly. Since the group is aiming to create a platform to facilitatethe trade and improve the movement of the cargo and information, it is very important to improvethe technological side of all the logistics companies in Oman, as was mentioned in section a. As mentioned previously, the procedures are not effective without having skilled staff. Training the staff working in custom offices and custom clearance offices will help to have a well-trained employee who can deal with the new procedures of the customs, which has its effect in doing the procedures accurately with fewer errors.

Technology

In logistics, transferring the data is very important, and it is very important to receive the data anddocuments before receiving the cargo or shipment itself. What is more important than that is transferring the accurate documents and data to the right place at the right time in the right conditions. With the development of technology, there is a need to get rid of paperwork and dependon technology that is easier to access at any time. Appling technology will help to improve the logistics sector. In case of import, through the technology and programs, the documents will be delivered before the cargo, so this will help to clear the cargo faster, and the cargo that does not need inspection will be electronically pre-cleared before arriving so they will be discharged fromthe port immediately once they get unloaded. In Oman's case, the SOLS 2040 technology team are working to improve applying the technology in the country by:

- Designing a platform that gathers the customers with the customs, health, agriculture,ports, airports, land borders, GCC customs, and other parties.
- Apply improvements in material handling.
- Utilize technologies to improve different areas in the logistics sector.
- Establish programs that develop the supply chain in Oman.

The porter value chain and the SOLS 2040 are matching in one point, which is technology, where both are encouraged to apply the technology to improve the work and create value for the business and the country. The value chain is encouraging to do research to find an area of improvement through the chain.

Human Capital

Human capital is the main important factor in the success of any business because any business will not be established without human capital. To meet the global standards in business and

trade,it is particularly important to improve the training and education for logistics. This can happen byproviding training centers, training courses, also, by applying specialized curricula and training programs related to the academic logistics institutes. This will help to have skilled and semi-skilled graduates who are ready to enter the market. With Omanization, there must be a high opportunityto hire all the logistics graduates from different specializations and specifically logistics graduates.It is valuable for companies to hire educated, trained, and experienced employees in their industry in different areas in the logistics sector. In Oman's case, the SOLS 2040 human capital team is working to meet the SOLS 2040 goal to employee 300,000 employees by 2040. The SOLS2040's human capital aims to:

- Ensure that the human capital's skills match the standards and match the forecasted growthof employment in Oman's logistics industry.
- Provide awareness about the importance of logistics by sitting programs within thegovernment, academia, schools, and colleges.
- To motivate the researchers to do applicable research in the logistics management field.

CONCLUSION AND RECOMMENDATION

With the great development that the logistics sector has witnessed since the establishment of the Oman 2040 vision, there is still a great void between the current situation of the logistics sector and the future vision. Therefore, it is necessary to conduct a study on the current situation of the logistic sector and to know the most important activities that add value to the logistic sector. This study adopted a quantitative approach to achieve the research objectives and find answers for the research questions. The study defined the main activities that adds a value to the logistics sector. The data was conducted through a survey where the researcher has randomly selected logistics companies to participate in the survey. The study aimed to combine the current situation of the logistics sector and the SOLS 2040 ambitions by referring to the survey results and the secondary data.

The results illustrate that the main primary activities that adds a value to the logistics sector are the inbound and outbound logistics where material handling, warehousing, distribution, and storing finished and semi-finished goods has a direct impact on adding a value to the business and the logistics sector as whole. These activities can be found in transportation facilities, warehouses, and industrial areas. while the main secondary activities are human resource management and technology development. Human resource management plays a huge role in the workflow inside the company. It is particularly important to provide motivational activities for the staff to encourage them to work harder. Also, providing training courses for any new procedure used willhelp them to work accurately and increase their productivity. Moreover, technology development is one of the main activities that help the business succeed in the market.

By doing research on what is new in the market and studying the opportunity to apply it in the company, there will be a huge chance for the company to grow and increase its competitiveness inthe market. The porter value chain and the SOLS 2040 are matching in many points, which are the human capital, technology development, marketing, and inbound and outbound logistics.

After doing a deep study about the logistics development in Oman, this study came up with the following recommendations for the government, logistics services providers and future researchers:

Government

- Create a platform or a website that contains all the logistics companies with their details,so this can help the

researchers, students, and job seekers to easily reach the companies.

- Force the logistics services providers to update their data in their websites and in theministries of labour, commerce and transportation, communication, and technology.
- Accelerate the work of SOLS 2040 and publish the annual plans for the strategy so thatresearchers can know what has been accomplished and future plans for the current year.

Logistics Service Providers

- Develop other logistics activities like warehouses, shipping agencies to increase their contribution to the GDP and attract more investors and customers.
- Encourage the companies and ministries to support the researchers and provide them with what they need because this research may improve the operations of these activities and help them to create more profit.

Future Research

It is highly recommended for future research to conduct an interview with the department of planning and investment development in the Ministry of Transport, Communication, and Information Technology (MTCIT). This will help them to identify the development of the logistics sector in Oman from the industry side and the government side. Also, they will be able to know more about the SOLS 2040 and where does it reach to predict the development of the logistics sector in the coming years.

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