

Technological Advancements in Import / Export Operations at Transom SATS Cargo

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ABSTRACT

Import and export operations are a part of logistics activities. Where the import considers as receiving the product from abroad while the export is selling the product abroad. In addition, technology plays an important role in completing these operations faster and more easily in logistics. So, many logistics companies are headed to use technology in their activities, including Transom SATS Cargo. This paper discusses the Technological Advancements in Import and Export Operations at Transom SATS Cargo. The main topics that will cover by this paper are information about Transom SATS cargo and logistics activities there, where it includes the role of logistics in Transom, and supply chain practices in it, Import and Export Operations at Transom, technological advancements in import/export operations at Transom, Bayan system and HS Codes, logistics operations before Bayan system, information technology at Transom SATS Cargo, and Risks of Using Technology in Import and Export Operations. The aim of this research paper is to identify and explore the effect of technological advancements in import/export operations and to understand the risks of using technology. previous scientific studies and interviews were used to get information for this project. The result shows that Transom focuses to improve its technology to make work up in import and export go easily and faster without any risk. Furthermore, Import and export help countries acquire products that do not have or are available at a lower price while export helps to save foreign exchange and increase sales.

Introduction

The daily purchasing benefits we make from grocery stores to expensive tools are closely linked to the supply chains spread to connect customers, sellers, and manufacturers through multiple methods. This negates the common misconception that the supply chain as a concept only operates in large industrial or commercial organizations, with supply chains playing a crucial role even in service-dominant economies as well as being embodied in all sectors.

The logistics aspect occupies a prestigious place in the list of foreign investments, centered on the great opportunities offered by Omani ports because of the Sultanate's strategic position overlooking the world's largest navigation network, and opens the way to support related areas such as tourism, fisheries, manufacturing and mining industries. The free zones providing logistical services throughout the Sultanate include:

1. Duqum Free Zone

The Duqum Free Zone is the biggest economic free zone in the Middle East and North Africa. It includes eight service areas which are fishing port and logistics, multifunctional port, tourism area, industrial and educational areas.

2. Salalah Free Zone

The Salalah Free Zone has the unique advantage of access to global markets and raw material exporters, allowing imports and exports to and from all over the world. The port of Salalah is a global and regional hub in the trans-shipment sector.

3. Sohar Free Zone

A multi-production area that attracts investors in light, transformative, and logistical industries, Sahar Port is a commercial intermediary for transporting goods to the region's markets and shipping goods exported to different markets.

Transom SATS Cargo (Oman SATS LLC) is one of the leading companies in the logistics industry in Oman which is a cargo terminal at Muscat international airport. The CEO of the company is Siang Tang Tan. Transom provides shipping services for more than 30 leading airline companies. And it's the only cargo company for a national airline company (Oman Air).

Transom SATS is a venture between SATS from Singapore and Oman Airports. This strategic partnership aims to serve the local aviation industry and the sultanate of Oman, and also, keep promoting Oman as a center of cargo to the GCC. Furthermore, Transom provides handling services for a broad range of cargo, which includes pharmaceutical products, e-commerce, live animals, Dangerous Goods (DG), valuables, perishables, etc. to and from Muscat (Omansats, 2023).

Role of Logistics in Transom SATS Cargo

There are many types of logistics and the type that Transom SATS Cargo works in it is sales logistics which is mean the movement of the products from the producer to the customer. The term logistics is commonly used to refer to sales logistics. This used to be mainly delivered to wholesalers and retailers from delivery centers and logistics warehouses. However, online shopping and e-commerce are now responsible for a large part of this volume as well as direct delivery. Where Transom provides handling services for e-commerce.

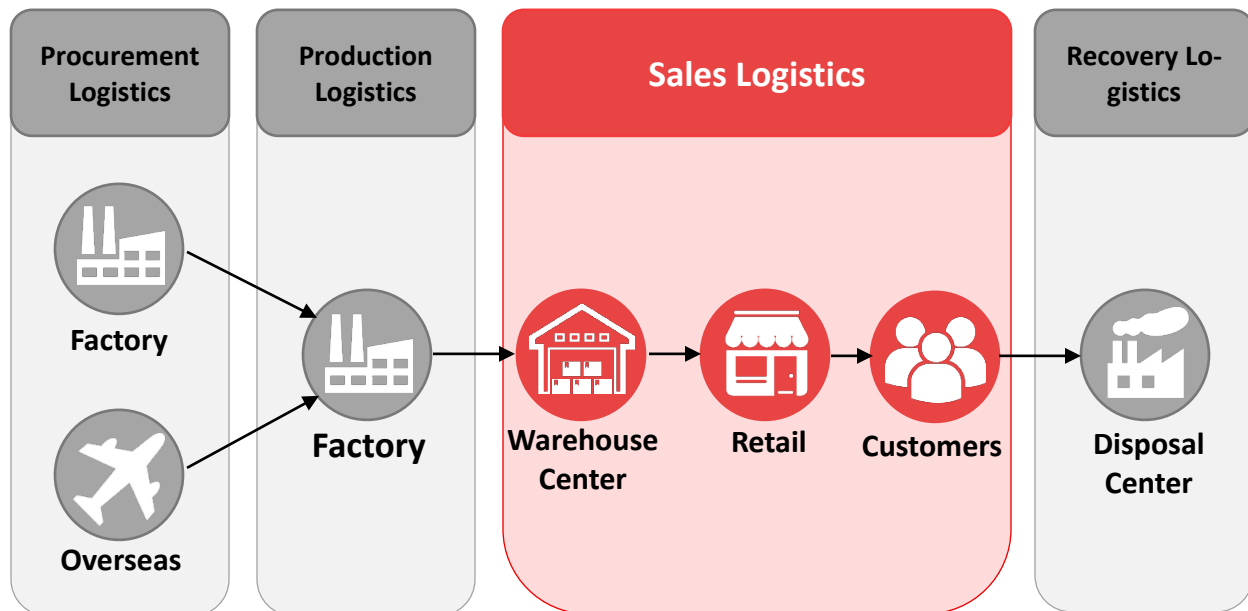


Figure 1. Sales Logistics (Keyence,2023). Sales logistics include three main parts which are warehouse center, retailer, and customer.

Transom SATS Cargo is an international cargo operator, it provides a full range of handling services including both physical handling and documentation like pharmaceutical & medical products, mail, perishables, live animals, express cargo, diplomatic mail and cargo, valuables cargo, dangerous & radioactive goods, and odd-sized cargo

by using Pax aircraft and freighters. The role of Transom was to ensure that food supplies in the country didn't stop during the Covid-19 pandemic due to the closure of airports as it delivered PPE once supplies arrived. The company has also delivered vaccines promptly and in the desired state as soon as possible. In addition, the company assisted in the management of food supply through its communication with government ministries and Oman Air to ensure adequate supply.

Supply Chain Practices

The supply chain involves every step that participates to get a final product or services, sourcing raw materials, moving them to production then transporting them to the distribution hub or retail stores where can be delivered to the customer. Producing, selling, storing, and distributing goods are all parts of the supply chain. Whenever a business receives a customer order, the supply chain begins to operate. In addition to product development, marketing, operations, and distribution networks, customer service is another important aspect of the company. A company's profitability can be boosted when supply chain management is done properly. A broken link can affect the rest of the chain and can be expensive. Transom SATS Cargo use agile supply chain, means the process of distributing products that is concerned with doing things quickly, saving costs, being responsive to market needs, maintaining flexibility, and maintaining productivity. According to Lee (2021), "Agile supply chain is a supply chain capable of responding to changing needs in a way that accelerates delivery of required goods to customers. Through the agile supply chain, sellers are able to respond to shifts in customers' needs with relatively short time". It is important to note that while the agile supply chain is a very attractive feature, trying to be overly flexible can actually damage the business. For this reason, many companies are embarking on policies and procedures designed to prevent situations that may jeopardize the overall process and its relationship to the entire customer base. This sometimes means invoking the minimum order that must be in place in order to qualify for fast shipping, evaluating surcharges for early delivery, or similar inhibitions that prevent customers from constantly expecting service levels beyond what is considered standard.

The requirements of agile supply chain are:

- **Data:** Using real-time data helps increase visibility across the supply chain, making it easier to observe early supply and demand patterns, anticipate the impact of supply chain disruptions and develop the business plan more quickly.
- **Automation and Technology:** Supply chain planning systems process real-time data and complete demand planning. Which reduces human error and guesses that can cause chaos in the bottom line.
- **Collaboration:** Cooperation helps facilitate the agile supply chain, by understanding how fluctuating demand will affect the company overall, teams can decide how best to respond. A key distinguishing characteristic of successful sales and operations planning practices is being able to support the goals and balance the demands of different departments.
- **Efficiency:** Efficiency requires being adaptable to available resources, it will not be able to pivot because a quick response to real-time data will not do much good. also, the agile supply chain plays calibrate stock levels, planning approaches, and service targets to be prepared for shortages down by obsolescence and warehousing costs.

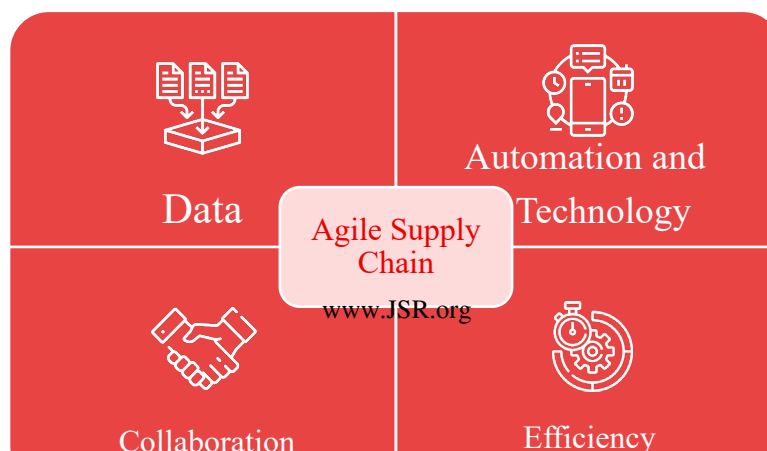


Figure 2. Agile Supply Chain Requirements (created by author)

The notion of materials management is centered on the potential benefits of managing the movement of products and materials from supplier through storage, manufacturing, and distribution. Thus, the following would be included in the overall control:

1. Purchasing
2. Stores
3. Inventory control
4. Production planning and control
5. Physical distribution (restricted to either inbound and outbound transportation facilities or to the broader idea of external storage and customer service)

Transom focus on physical distribution, where without effective distribution, the supply chain is doomed. Physical distribution management is concerned with the flow of goods and accompanying flow of data that starts at the end of the production process and finishes with the consumer. The physical distribution function performs together with and for the benefit of other functions (such as production and sales) in the organization.

In terms of the systems approach, the interaction between different functions is more important than the solo performance of each function (Quayle, 2006). In this way the whole system works to produce a better result than the separate functions could achieve when working alone. The physical distribution management in Transom includes five functions are inventory control, order processing, warehousing, materials handling, and transportation.

The Physical Distribution management is concerned with various aspects related to the transport of goods and the most important aspects is cost of transport. Where there is a relationship between logistics costs, transport costs, and warehousing costs. As shown in the figure 9, when a shipment size or the number of warehouses increases, also warehousing costs go up, but transport costs go down.

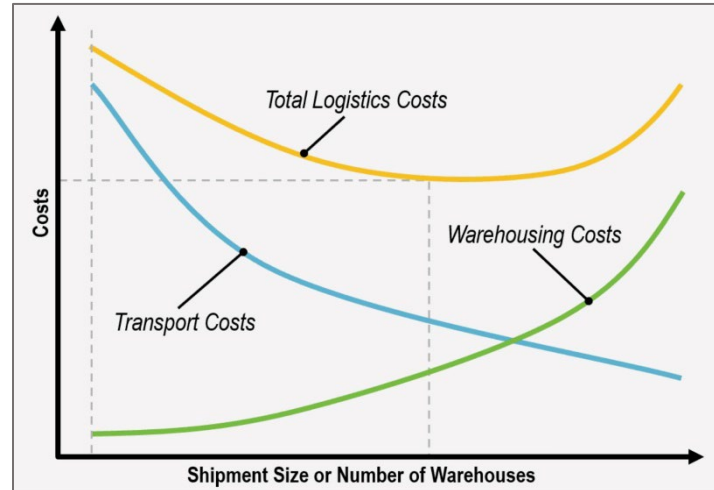


Figure 3. Relationship between logistics cost (waredock, 2023).

Import and Export Operations at Transom

To done the import and export operation have to create a customs declaration by cargo agent, the steps are:

1. Sign in to Bayan system.
2. Generate required customs declaration.
3. Select HS Codes with right description.
4. Attach all documents (air waybill, invoice, packing list, origin certificate, and quality certificate (If it's food)).
5. Submission and payment. The application fees for the companies 15 OR, and for individuals 5 OR.

All goods imported from Arab countries are exempted from customs duties according to the agreement on trade exchange between Arab countries that made in 2005.

Import Operation

Import operation department managing by Hamad Al Maani. The import operations are provided 24/7. Transom uses two modes of transportation, Pax Aircraft which is take 4 hours for general cargo from Actual Time of Arrival (ATA), and 2 hours for special cargo from ATA. And freighters take 6 hours for general cargo, and 2 hours for special cargo from ATA. All customs clearance services for import are done via the Bayan system. The documentation that needs for complete import operation is air waybill, invoice, packing list, origin certificate, and quality certificate (If it's food). The processes that cargo move on to import are:

1. Create custom declaration in Bayan system.
2. Complete the customs procedures with Royal Oman Police (ROP) customs.
3. Use self-service kiosk (SSK) to get cargo location information.
4. Give location information for the delivery stuff who will take cargo to inspection area for joint inspection with ROP custom.
5. Inspection all cargo by ROP customs using X-ray screen.
6. Importer pay taxes and customs duties for ROP customs and handling charges for Transom.
7. Delivering cargo to importer.

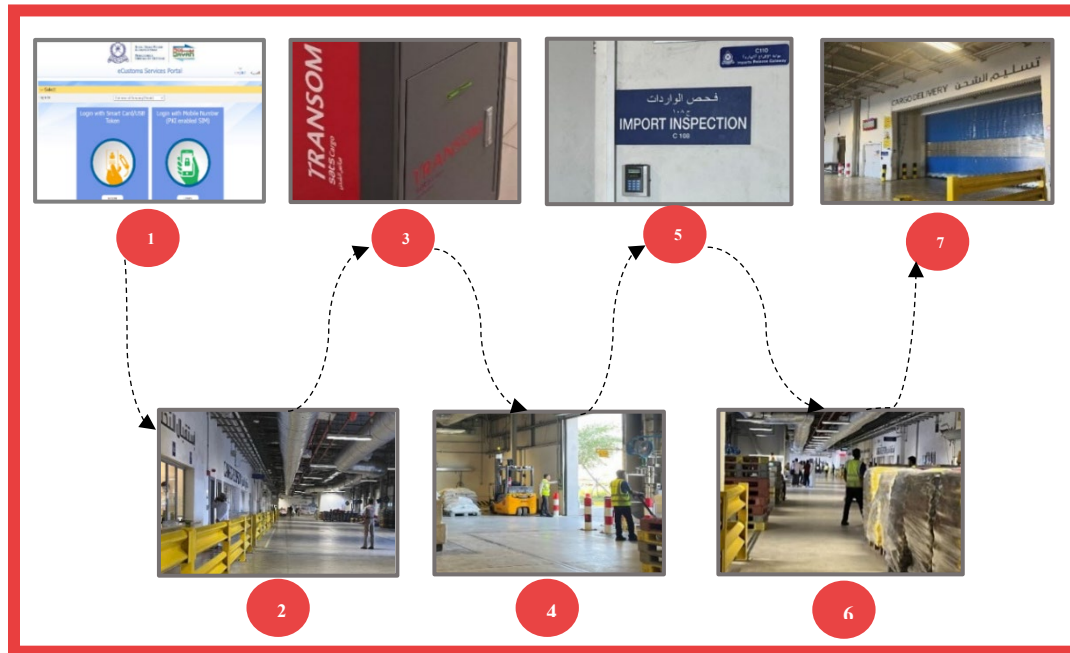


Figure 4. Import Process (created by the author)

Export Operation

The Sultanate of Oman exports a variety of products the most are as follows:

- Mineral fuels including petroleum.
- Organic chemicals
- Iron and steel.
- Fertilizers.
- Plastic and plastic materials.
- Ships and boats.
- Aluminum ores, slags, ash, precious stones and metals
- Salt, sulfur, stone and cement

The export operation department is managing by Ali Al Hashmi. Transom offers export services 24/7. For all types of cargo which are general, perishable, and dangerous cargo. to avoid missing any cargo they scheduled cut-off timing for each type of goods. So, dangerous goods latest 6 hours before flight Standard Time of Departure (STD), general cargo latest by 6 hours before flight STD, and Perishable latest 4 hours before flight STD. The documentation that needs for complete export operation is the export invoice, packing lists, an application letter for the export of used or personal belongings (for non-Omani citizens), form for clearing, and classifying the goods. The processes of export in Transom are:

1. Create custom declaration in Bayan system
2. Loading the cargo that will export in loading docks
3. Take the weight and dimensions of the cargo to calculate the shipment fees.
4. Fill up the form "shipper letter of instruction"
5. Choose the suitable carrier for the cargo then will make the air waybill (AWB) for it.

6. Payment for the freight charges that imposed by carrier and handling charges (Transom) by the exporter.
7. Customs clearance take AWB to ROP to complete customs procedures
8. After customs formalities, cargo will send to inspection using X-ray screening by security.
9. Storage the cargo until sent to desired destination.

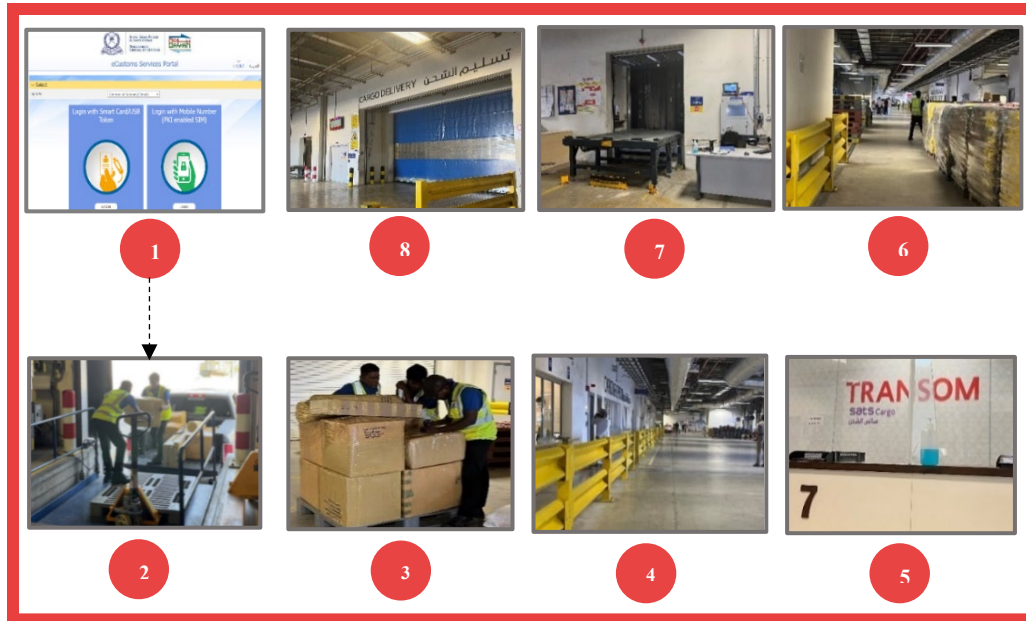


Figure 5. Export Process (created by the author)

Technological Advancements at Transom SATS Cargo

Technology invaded the logistics sector as it invaded all the sectors. Because of this invasion, logistics companies were able to pursue shipping operations. Knowing it's line, what happens to it, what she might be exposed to, everything done remotely This has also helped companies reduce storage space and reduce storage costs and help speed and efficiency of work, Technology and industrial intelligence have provided solutions to complex issues such as the distribution of drivers, vehicles, etc. and also contributed to providing a huge data base for logistics companies and storing vital data for each truck separately, For example, the amount of fuel available in it, the temperature of the container, and other data that helps to control the truck from a central-remote location, The technology also enabled logistics owners to obtain notice of the end of loading of shipments or the end of download and receipt (Kumar, 2022).

Customs is one of the most important national income sources and is considered the first line of defense for the homeland against dangers and threats of all kinds. The Directorate General of Customs in Oman is one of the oldest administrative organizations in Oman. nowadays many modernization and reforms have been conducted and resulted in very significant changes in customs performance. One of the most important changes is Bayan System, through which all customs procedures and processes are now automated, accordingly, shipments are released in a timely manner and in accordance. with a trade facilitation agreement. The main system that Transom used for all import and export operations is the Bayan system.

Bayan System

Bayan System consists of three main applications, the first is the Customs Integrated Management System which covers all customs procedures applied in import, export, and other regimes. The second is the Risk Management System, through which analysis is processed to identify risks of each consignment and target those shipments of high risk (Red Channel) to be physically inspected, or sometimes where there is a need of checking documents go through (Yellow Channel). while allowing those with no risks to go through (Green Channel). The third is the Single Electronic Window where through one single computer window all governmental entities can access the shipment and grant unravels-or exemptions. Land, sea, and air customs ports are being upgraded with an integrated system of advanced devices and technologies to be used in cargo inspections to reduce prohibited smuggling and tax evasion.

HS codes are one of the important things that the Bayan system uses. It's a product identification number used in international trade that is recognized by the vast majority of countries. The World Customs Organization (WCO) manages the HS codes, which are widely used by businesses and customs officials to identify commodities (trade finance global, 2023). The structure of HS codes content chapter, heading, sub-heading, and local classification number are shown in Fig 6.

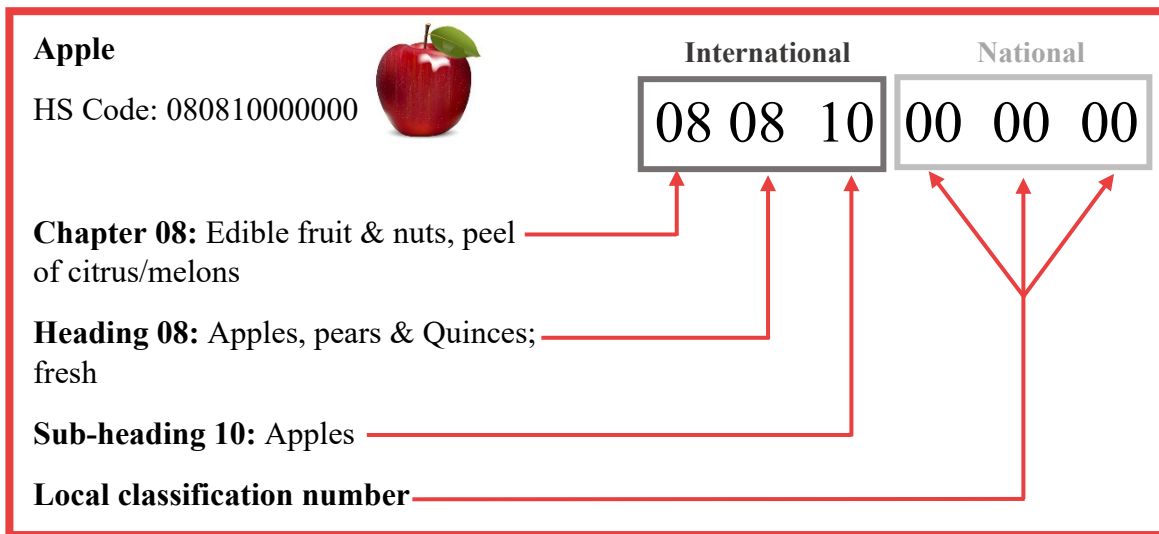


Figure 6. HS Codes structure (Vildava, 2022)

Import and Export Operations Before Bayan System

Before the implementation of the Bayan System in Oman, importers and exporters were required to submit their customs declarations and related documents physically, using a paper-based system. This system involved a lot of paperwork, including the need to submit multiple copies of the same documents, which resulted in delays and increased costs for traders. The clearance process also involved a considerable amount of time for physical inspections and document processing, leading to long processing times and delayed release of goods. The manual system was also prone to errors and inconsistencies due to the high volume of paperwork, further causing delays in the clearance process. However, with the introduction of the Bayan System, the customs clearance process in Oman has undergone significant improvements, as the electronic platform has replaced the traditional manual system, resulting in increased efficiency, accuracy, and transparency in the clearance process.

Information Technology at Transom SATS Cargo

The information technology is one of the important part in any company. That make all supply chain operations going efficiency, easily, and faster. IT department in Transom is managing by Khalil Al Khanbashi. The IT support in Transom divided into two types of technology:

Software

Transom use many application software that consists of a variety of programs that carry out particular tasks for end consumers. Such as:

- **Webtrack+ Website:** it is a new digitization feature for carrying out different transactions anywhere through the website, and it was created to better serve clients. All of the features that are now present in our self-developed self-Service kiosk are included in Web Track Plus. The payment methods would allow customers to transact for import and export shipments from anywhere (Credit card and Pre-Deposit) Clients won't need to physically be present at the reception desk to assist our customers, which will offer convenience for those who utilize our facility. Along with the ease, also there is saving in workforce.

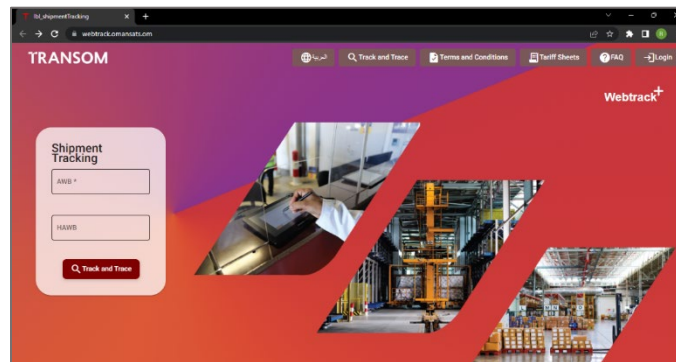


Figure 7. Webtrack+ Website

- **Oman Air SATS Cargo Mobile App:** it helps to save much time and cost, the workflow has become easier and much effort has been kept. where it is sent real-time notifications and information on the documents or cargo awaiting clearance, which makes cargo clearance faster (omansats, 2019). also, it's saving time on waiting for processing transactions, which it can do by the application, and the Transaction for 50 shipments takes 10 seconds only. Furthermore, the application Reduced the cost, especially workforce and stationery (International Finance Business Desk, 2021).

Hardware

Transom has many hardware that facilitates customer and employee experience.

- **Self Service KIOSK (SSK):** It Provides a range of services including completing shipping transactions for more than 30 shipments in less than a 1 minute, provides easy access to all data including shipping status and shipping fees which can be paid through it, also issuing inspection and delivery selection requests (omansats, 2020).



Figure 8. Self Service KIOSK (own photo)

- e-DO (Electronic Delivery Order): Transom carry out electronic delivery order for import shipment. It is for the customer to sign a digital signature board and his digital signed e-DO sent for him via email. Manual files and retrieval process are no longer needed (omansats, 2020).



Figure 9. Electronic Delivery Order (omansats, 2020)

- Cargo Delivery Screen: it shows the cargo that delivered in that time. It's allows customer to monitor his cargo if it's arrived or not. This screen located in loading docks.

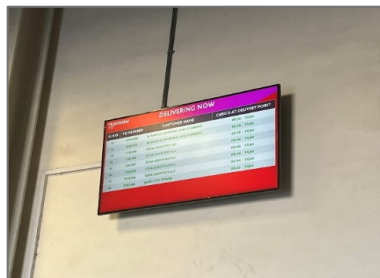


Figure 10. Cargo Delivery Screen (own photo)

Risks of Using Technology in Import and Export Operations

While there are numerous advantages to using technology in import and export processes, there are also certain hazards and difficulties to take into account. To name a few:

Technological malfunctions can lead to disruptions or delays in import and export operations. This can be particularly problematic if it occurs during a critical phase of the process, such as transportation or customs clearance. Moreover, the risk of cyber-attacks and data theft increases as digital systems and communication channels are becoming more prevalent. Unauthorized individuals may attempt to gain access to sensitive information, including customer data, confidential business information, or financial transactions, which can result in substantial financial losses and reputational damage.

Relying heavily on technology can make a system vulnerable if the technology fails or if there aren't enough skilled personnel to operate the system manually. In such circumstances, it can be challenging to switch back to manual processes and maintain effectiveness. Furthermore, the expenses associated with employee training and the implementation of new technologies can be high. Installing new technology can also be time-consuming and costly. Additionally, some employees may be opposed to the adoption of new technology, which could cause internal conflict and resistance in the workplace.

Methods

Technology plays an important part in import and export operations which makes operations going on faster and easier. The research paper aims to understand the role of technology in import and export operations and know the technology that Transom used. The present research adopted a qualitative methods research design as a holistic understanding of the attitudes and perceptions of the employees was required. This design method enables to obtain detailed and nuanced data through interviews, observations, and documents. primary and secondary data were used to collect the data for this research because the objective of this research paper is to understand the importance of technology in specific logistics operations. thematic analysis is used to analyze the information that is gotten.

Results

Import and export operations are a part of logistics activities. Import and export are integrated processes. When a company sells its products in another country, this is called export. The country that received the product is imported. Import and export help countries acquire products that do not have or are available at a lower price while export helps to save foreign exchange and increase sales. Transom SATS cargo is a terminal operator that works in all airports in Oman. Who received and sent all cargo from freight to and from Oman. and almost import and export operations are done there. Furthermore, Transom used the latest technology to complete logistics operations more efficiently, faster, and easier. One of the important systems that Transom used is the Bayan system where almost logistics operations are done there.

Conclusion

In conclusion, this research paper has shed light on the Technological Advancements in Import and Export Operations at Transom SATS Cargo. Through the exploration of various topics such as the role of logistics in Transom, supply chain practices, Bayan system and HS Codes, information technology, and risks of using technology in import and export operations, it has become evident that technology plays a crucial role in completing these operations faster and more efficiently. Transom SATS Cargo has recognized the importance of technology and has implemented various technological advancements to improve its import and export operations. However, it is important to note that the use of technology also comes with risks, and companies must be cautious in their implementation. Overall, this research

paper has provided valuable insights into the impact of technology on import and export operations and has highlighted the importance of continuous technological advancements in logistics activities.

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