

PalArch's Journal of Archaeology of Egypt / Egyptology

ONLINE SMES WAREHOUSE MANAGEMENT: CHALLENGES AND OPPORTUNITIES

Duaa Al-Sharif¹, Yosra Hamas²

^{1,2} College of Business, Effat University, Qasr Khuzam St., Kilo. 2, Old Mecca Road P.O.Box
34689, Jeddah 21478, Saudi Arabia,

Email: 1dalsharif@effatuniversity.edu.sa, 2ymhamas@effatuniversity.edu.sa

Duaa Al-Sharif, Yosra Hamas. Online Smes Warehouse Management: Challenges and Opportunities -- Palarch's Journal of Archaeology of Egypt/Egyptology 18(15), 17-26. ISSN 1567-214x

Additional Keywords and Phrases: E-Business; Inventory; Warehouse; Management; Operations

ABSTRACT

E-business faced many challenges to manage their inventory, warehouse operation and maintain their performance efficiency along with continues improvement of their customer satisfaction and experience. These challenges are increased in fruits and vegetables distribution as the difficulties in managing the storage space, maintaining inventory stocks and tracking the logistic process. This study was held to investigate the challenges that SMEs faced in the warehouse management and highlight the importance and impact of warehouse management to E-commerce for customer services and ability to deliver goods efficiently and in timely manner. This study concentrated on understanding the challenges faced by Saudi online SMEs regarded warehousing management. The study was started in Jeddah as pilot project with online small, medium enterprises (SMEs) specialized in fruits and vegetables distribution. The qualitative method was used in this study. The required data had been collected through non-participant observation and interview technique. The main core activities that had an exclusive impact on the success of E-commerce warehouse management were warehouse system, warehouse management and logistic process.

INTRODUCTION

Start-up businesses are similar to any normal business which require solid marketing strategy, business and financial plan, efficient administration and operation management. All functions had to perform well to have a successful business. Start-up companies are new companies that are still finding for a validated business model [1].

Supply chain management has become important via global industry and competition and remains a major element in worldwide competition [2]. Furthermore, the operation management of the supply chain management (SCM) represents an important factor for customer services and ability to deliver goods efficiently and in a timely manner. SCM is responsible for coordination and integration of all activities into one continuous process [3].

SCM is planning, control, arrangement and realization of product flow ranging from design and purchase through production and distribution to final consumer [4]. SCM has become important through global industry and competition and remains a main element in global competition [5]. In addition, SCM includes supply and demand control inside a company and between different companies [6]. SCM is involved in all stages directly and indirectly in fulfilling a customer request and includes manufacturers, suppliers, transporters, warehouses, retailers and customers [7].

Firms can no longer effectively compete in isolation of their suppliers and other entities in the supply chain. Nowadays, the business world is moving toward E-business and E-retailer, and the importance of supply chain management is being more emphasized. Web-based systems enable organizations to form strong customer and supplier integration for inventory management, demand forecasting, customer and supplier relationship management.

SCM offers organizations the means to correlate technology with people in an attempt to align the technology with the capabilities of each organization and among its trading partners, enabling rapid responding to customers' needs [8]. The supply chain activities have a direct impact on a business's cost and profitability. Despite the substantial benefit of SCM, evidence shows that SCM implementation has its costs, hazards and challenges. There are three important demographic variables that impact on SMEs such as gender, previous government employment and recent redundancy.

The rapid development of the internet has resulted in a seismic shift in entrepreneurship, allowing it to thrive wholly or partially in the virtual world [9-11]. Virtual markets refer to settings in which business transactions are conducted through open networks based on fixed and wireless internet infrastructure [13].

In logistics operations, a warehouse is an important component to ensure consistent supply from manufacturers to end customers with goals of high levels of productivity and quality [14]. A warehouse also plays an important role in matching the demanding product with the supplier [15]. The warehouse plays a big role in an organization's profitability, sustainability and performance. Moreover, storage is an important aspect of economic activity [16]. Stock planning decides which products are kept in the storage in what quantities and determines when shipments arrive and intelligent stock planning may reduce warehouse costs [17]. Warehouse management system (WMS) is designed to introduce improvement into every aspect of company warehouse operation and offers an organized approach to manage efficiency [18].

This study concentrated on online SMEs supply chain management. The warehouse management and inventory process is main activity for the SMEs success. The study aimed to understand the challenges faced by Saudi online SMEs regarding the warehouse management. Furthermore, understanding the challenges was helped provide suggestions and solution to improve the warehouse management efficiency, customer services level in terms of delivery speed and satisfaction. This study was aimed to investigate the challenges that SMEs faced in the warehouse management and highlight the importance and impact of warehouse management to E-commerce for customer services and ability to deliver goods efficiently and in timely manner

METHODOLOGY

The qualitative research was conducted use case study. The tools used to collect data is semi-structured interview and non-participant observation on the online SMEs warehouse. The study was conducted cooperate together with successful online business in Jeddah. The implemented research approach is case study approach. The main objective of case study approach to describe in-depth experience of one person, family, group, community or institutions.

In this study, Saudi online SMEs specialized in fruit and vegetables distribution was studied. The chosen SME called Avokado had been selected due to its performance and reputation in Saudi market during last year. Moreover, warehouse management was considered as key success factor for the company since time and temperature factors were very critical elements in fruit and vegetable distribution.

Non-participant observation had been used to collect the data. The site visit is selected to understand the challenges faced by online SMEs in Saudi Arabia. Moreover, better understanding of the warehouse operation management in deliver the information to the audience is done in an appropriate and convenient way.

The second method had been used was semi-structured interviews. There were many techniques for interview, face to face interviews, phone interviews, computer media communication interviews. The conducted interview technique had been implemented to conduct this study was face to face interviews.

The interview with Avokado owner was carried out to find out the challenges faced by online SME related to their inventory process and warehouse management. Moreover, disclosed any potential opportunities for E-business growth and sustainability. The interview questions had been drafted that provided interviewer to participate without limitation. The structured questions regarded technical information of the warehouse design

RESULT AND DISCUSSION

The changes in human lifestyle and habits, people have less time to go and buy their grocery and hence, local demand was growing. The market had fewer companies fulfil these demands in an appropriate and sustainable ways to the customers.

Avokado SME took this initiative to be the first recognized E-business idea for an online store for fruits and vegetable. Avokado was Saudi Arabian's lead on online retail for fresh fruit and vegetables delivered directly to the customers' home. Avokado began their services as the pioneer in the category with the mission to bring fresh fruits and vegetable faster to the people across the country while provide best quality, unique packaging and memorable service. In 2018, Avokado had approximately more than 25,000 customers in Jeddah.

Supply Chain Management Process for Avokado Online Business

The process started with customer order through online application or customer service. Avokado had built their system over the past two years. The development of system provided advantage to connect all process started from receiving the order, delivering and customer service after selling process.

According to the founders, warehouse management and information technology (IT) were core activities and key success factors of their business. Existing warehouse capacity of orders per day were 250 to 300 orders in 100m² space. The warehouse was equipped with temperature control to maintain freshness of fruit and vegetables.

Avokado operation involved receiving supplies from suppliers, customer order, cleaning fruits and vegetables, packing and measuring cleaned fruits and vegetables, pass to sorting section, completed customer orders (fill in the boxes), pass to waiting section and track to be delivered. Avokado supply chain management stages is summarized as in Figure 1.

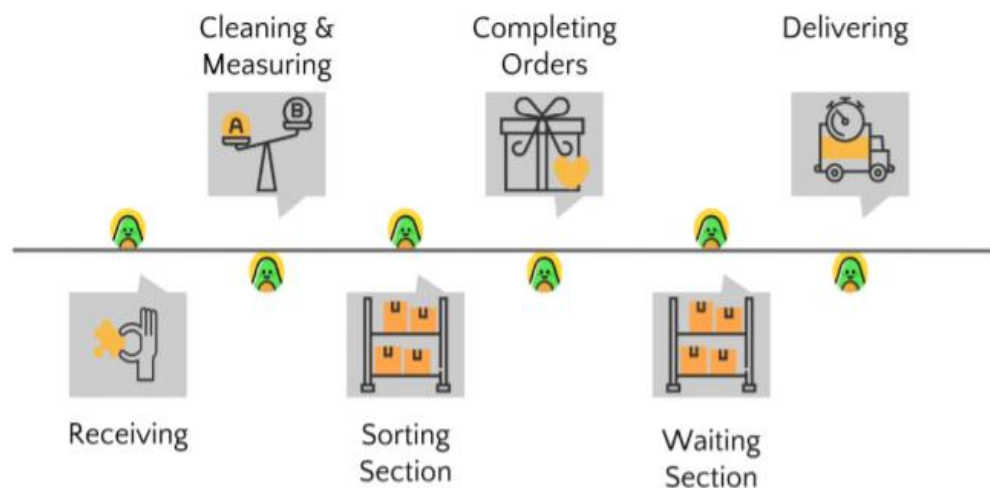


Figure 1: Avokado SCM Stages

In first stage, process is involved receiving fruit and vegetables. Avokado deal with different local suppliers of fruits and vegetables. One of main suppliers was AlShurbatly Company. AlShurbatly company was one of the biggest and well-known supplier of fruit and vegetables in Saudi Arabia. Avokado have purchase team to maintain the same standard and quality of fruit and vegetables supplies and receive the fruit and vegetables on daily basis or twice

a week. The cleaning operation process is done while view the order of the quantities used in monitor screen. The cleaning of fruit and vegetables were done for ordered quantity. This monitor screen was connected directly to their online application and under the supervision of employees (Figure 2 and Figure 3).



Figure 2: Cleaning, Measuring And Packing Process

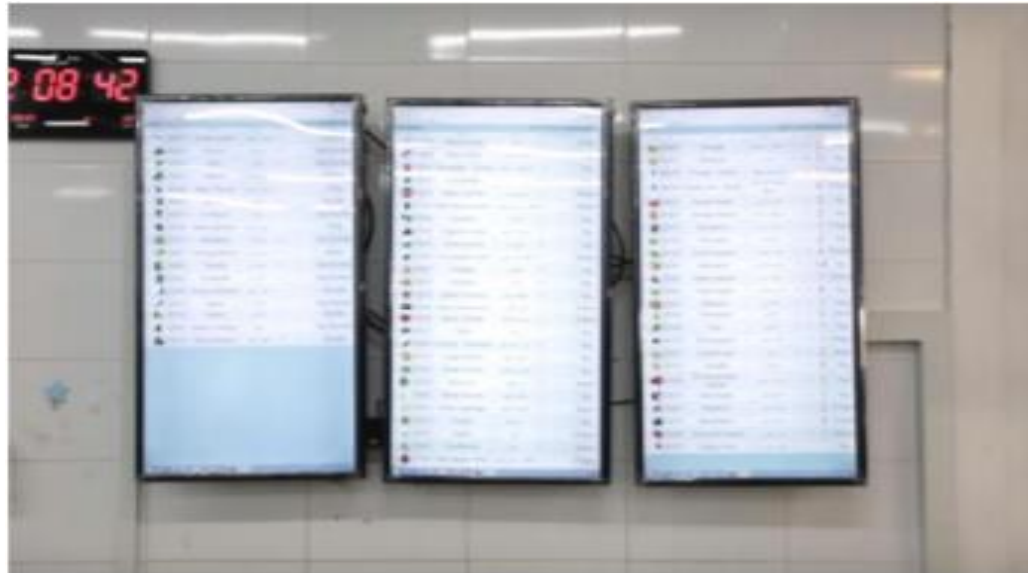


Figure 3: Monitor Screen

In second stage, the cleaned and packed fruit and vegetables are moved to sorting section. The sorting section contained shelves that are used to organize the fruits and vegetables in a particular barcode. The customers' orders (fill the boxes) to have an efficient and accurate operation process in the third stage. Avokado had developed their own system, "PUT TO LIGHT" software system associated with ready-made hardware device. The software system was

developed internally by Avokado IT members. Moreover, the accuracy of this developed system was approximately 98%. In case of received a missing order from a customer, the tracking process on missing order is done by using cameras installed in warehouse area. The filling box process involved scanning the barcode of each fruit and vegetable category item.

Avokado had designed the system with verification process to have accurate operating system. Firstly, one person handling the filling boxes activities and within one hour, the employee would complete 54 orders. Secondly, there were barcodes for opened and closed activity under each box. The order is placed in the box and verified by pressing button on the hardware device.

Avokado had developed all these activities to increase the accuracy and reduce human errors. After box order is completed, the signal was given to scan the closing barcode and placed label that contain the customer's number and necessary detail. The completed boxes is moved to the waiting section. There are shelves in the waiting section for all customers completed orders. The boxes are moved to the trucks to be delivered to the customers. Figure 4 is represented system hardware. Meanwhile, Figure 5 is shown the third stage process.



Figure 4: System Hardware.

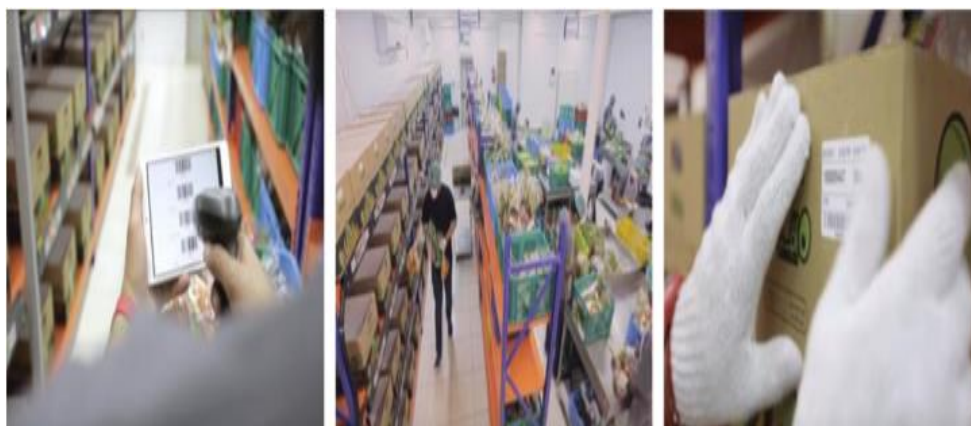


Figure 5: Third Stage Process.

In fourth stage, the customers' orders are moved to refrigerator (cooling) trucks. Avokado store had 6 shifts per day for delivery operation. AVOKADO FLEET SYSTEM, a logistic system that provided logistic service. The boxes label is scanned to identify the order's destination. The delivery destinations orders are being organized based on Jeddah. Besides, Avokado had hired student on part-time basis. These students lived in same districts is delivered the orders to the customers who lived in same districts This process helped Avokado to increase their efficiency, reduce delivery time and create job opportunities. However, Avokado delivered their orders through their cooling trucks for other part city of Jeddah.

Avokado system allowed the customers to track their orders through online application. Avokado E-business had been committed to have continuous improvement for the past four years. Moreover, Avokado had plan to improve the efficiency of their warehouse management operations. The improvement included upgrading their warehouse operations regarded the barcoding system to reduce waste time.

Case Study Analysis

Avokado online store had clear improvement in their warehouse operations. The employees had been working in a continuous way for their business growth and sustainability. Avokado online store had implemented a ready-made warehouse management system (WMS) and outsourcing a third party logistic (3PL). In additions, Avokado had improved their system internally to fit their need and have an efficient and dynamic system that help in utilize their resources, add value to their value chain, improve their performance and increase their customer satisfaction.

Moreover, Avokado online store was worked in overcome their obstacles and challenges to grow, sustain and add value for their E-business. For business opportunity, E-business was franchises in different cities around Saudi Arabia to make utmost benefits of their developed systems, experiences, brand image and relationship. In Avokado case, the challenges faced regard the warehouse operation management primarily offered various type of product with different

quantities, digital and IT challenges, logistic process and operation capacity less than customer demands.

DISCUSSION

The study found core and primary activities that have huge impact for success of E-business in four elements such as digital platform, warehouse management system and operation and logistic process. The priority and importance of these factors has affected the business operations in different percentage for each online business sectors. Ciarniené et al. (2015) found e-business enhances different activities and business process such as production processes, customer-focused processes and internal management processes [18]. The challenges fall on SMEs ability to point out their business priority activities. Musa et al. (2016) found factors that prevent SMEs from expanding or investing were high cost of raw material, initial investment and shortage of skilled labour [19].

The warehouse management plays an important role in the business performance. The warehouse's design has an essential rule for reducing the SMEs renting cost. The warehouse plays significant role of serving the purpose of its institution by holding stocks and releasing when needed to increase value [20]. Moreover, arranging the warehouses' operations, activities and equipment in most effective way that maximize the space utility. Hence, this arrangement resulted to the reduction of required space and performance enhancement.

For Avokado case study, the study found that core activities for online business are warehouse and IT operations. The warehouse management and inventory are core activities to the online SMEs because there is no a physical store which allow the customer visit and product purchasing. Therefore, the operation system needs to be accurate regarding the customer orders and online business need to rely on efficiency of IT tool especially the warehouse management system and online application itself.

An excellent and updated digital system and platform would be key success factors for online SMEs. A business can change entire company performance, profitability and efficiency if the businesses were able to plan design and implement the warehouse management operation in most suitable way. The warehouse management operation plays an important role in a company can add value to their value chain, improve their performance, deliver a competitive value to the customer, increase their market share and growth which altimetry will lead to increment of company profitability.

CONCLUSION

In conclusion, warehouse management plays important role for business growth, sustainability, profitability and customer satisfaction. E-commerce's core and primary activities had huge impact for E-business success which summarized in four elements such as digital platform, warehouse management system, warehouse management operation and logistic process. The warehouse management operation plays an important role in the company which the company can add on the value, improve performance, deliver a

competitive value to the customers, increases market share and growth that help increase the company profitability.

REFERENCES

- Pajares, J., Lopez-Paredes, A. and Hernandez, C. 2016. Technology start-up firms as a portfolio of projects: the case of DIMA 3D. *Procedia Social and Behavioral Sciences*, 226, 2016, 59-66.
- Shakerian, H., Dehnavi, H. D. and Shateri, F. 2016. A framework for the implementation of knowledge management in supply chain management. *Procedia Social and Behavioral Sciences*, 230, 176-183.
- Masteika, I. and Cepinskis, J. 2015. Dynamic capabilities in supply chain management. *Procedia Social and Behavioral Sciences*, 213, 830-835.
- Boiko, A., Shendryk, V. and Boiko, O. 2019. Information systems for supply chain management: uncertainties risks and cyber security. *Procedia Computer Science*, 149, 2019, 65-70.
- Shakerian, H., Dehnavi, H.D. and Shateri, F. 2016. A framework for the implementation of knowledge management in supply chain management. *Procedia Social and Behavioral Sciences*, 230, 2016, 176-183.
- Masteika, I. and Cepinskis, J. 2015. Dynamic capabilities in supply chain management. *Procedia Social and Behavioral Sciences*, 213, 2015, 830-835.
- Ivascu, L., Mocan, M., Draghici, A., Turi, A. and Rus, S. 2015. Modelling the green supply chain in the context of sustainable development. *Procedia Economics and Finance*, 26, 702-708.
- Marinagi, C., Trivellas, P. and Reklitis, P. 2015. Information quality and supply chain performance: the mediating role of information sharing. *Procedia Social and Behavioral Sciences*, 175, 473-479.
- Cormode, G. and Krishnamurthy, B. 2008. Key differences between Web1.0 and Web 2.0. *First Monday: Peer-reviewed Journal on the Internet*, 13,6.
- Davis, M.M., Spohrer, J.C. and Maglio, P.P. 2011. Guest editorial: How technology is changing the design and delivery of service. *Operations Management Research*, 4,1-2, 1-5.
- Kiskis, M. 2011. Entrepreneurship in cyberspace: what do we know? *Social Technologies*, 1,1, 37-48.
- Amit, R. and Zott, C. 2001. Value creation in E-business. *Strategic Management Journal*, 22,493-520.
- Koster, R.B., Johnson, A.L. and Roy D. 2017. Warehouse design and management. *International Journal of Production Research*, 55, 21, 6327-6330.
- Mickleson, G., Thai, V.V. and Halim, Z. 2019. The influence of responsibility shift on warehousing performance: the case of Australia. *The Asia Journal of Shipping and Logistics*, 35,1, 3-12.
- Ashayeri, J. and Gelders, L. 1985. Warehouse design optimization. *European Journal of Operational Research*, 21,3, 285-294.
- Gomes, C.F.S., Ribeiro, P.C.C. and Matos Freire, K.A. 2012. Warehouse management system: a bibliometric study. *XXXVI Encontro Nacional De Engenharia De Podução*, 3,6.

- Nee, A.Y.H. 2009. Warehouse management system and business performance: case study of a regional distribution centre. *In International Conference on Computing and Informatics*.
- Ciarnierné, R. and Stankeviciute, G. 2015. Theoretical framework of E-business competitiveness. *Procedia Social and Behavioral Sciences*, 213, 734-739.
- Musa, H. and Chinniah, M. 2016. Malaysian SMEs development: future and challenges on going green. *Procedia Social and Behavioral Sciences*, 224, 254-262.
- Udeh, D.O. 2015. The impact of supply chain in the warehouse management systems of Turkish. *International Journal of Economics, Commerce and Management*, 3,5.