



INVENTORY MANAGEMENT SYSTEM FOR DENAKS FROZEN FOODS.

Applied Project

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Bachelor of Science degree in Management Information System.

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DECLARATION

I hereby declare that this Applied Project Report is the result of my own work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that the preparation and presentation of the Applied Project Report were supervised in accordance with the guidelines on supervision of applied projects laid down by Ashesi University College.

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Date: _____

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EXECUTIVE SUMMARY

Denaks Frozen Foods is a start-up in the heart of Jamestown (Accra, Ghana) which seeks to provide its customers (rich, middle-class and poor) with frozen foods. There are a variety of products it serves to the market. These products include fish, gizzard, chicken, and sausages. Dede Nakoh, the owner of the company, started the business to make profit after doing an intense study of the market. Currently, the company has four working staff excluding the owner, two salespeople and two butchers. The company aims at establishing more branches in Accra to become a well-known company in Ghana. However, the company faces a problem which is likely to prevent them from achieving their goals. The needs assessment conducted showed a poor inventory management system as the main problem the company faces. The company is unable to effectively and efficiently track and monitor its stock. Further analysis was done in through literature review to understand the problem better and gain mastery of the possible solutions to address the issue. The literature review highlights the various inventory management strategies which could be used by Small Medium Enterprises (SME) to monitor their inventory to yield maximum performance. These inventory strategies include Economic Order Quantity, ABC Analysis, Just-in-time and Enterprise Resources Planning. From the literature review, Orderly POS, an inventory management software and a Point of sale was the best solution to manage the inventory of the company. The software has relevant inventory management features which allows the user to monitor inventory, count products using a bar code scanner and signals the user when there is low inventory stock.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction to Project

Denaks Frozen Foods is a company aimed at serving the public with varieties of frozen food products including fish, gizzard, beef, and chicken. The company has four departments currently working together to achieve the company's mission and goals. In assessing these departments, it was revealed that the most pressing need the company had was a lack of an active inventory management system to track their stocks. The technology the company uses in tracking their inventory is Microsoft Excel which is prone to human errors. Thus, a wrong input will lead to either overstocking or understocking, hence leading to miscalculations (Ervin, 2017). This project seeks to assess the pressing need of the company and implement software that will monitor their inventory with relatively less human error.

1.2 Project objectives:

- To identify the current stock related challenges in Denaks Frozen Foods
- To analyze the various inventory management frameworks and adapt the most suitable for Denaks Frozen Foods.
- To develop, customize and implement the most appropriate inventory management software to curb the issue at hand.

1.3 Rationale for selection of Denaks Frozen Foods

The long-term goal of Denaks Frozen Foods after maximizing profit is to invest a percentage of their profit into initiatives that will help the underprivileged in the society. Personally, Ashesi education has taught me to give back to society with the best I have. This has been my inspiration from childhood; helping others find their feet. This goal of Denaks falls in line with my core beliefs; hence my reason for selecting the company.

Another reason for selecting Denaks was due to its supply chain system. The flow of information and products between the company and its suppliers relates to concepts taught in class. Moreover, the company operates in a multi-stage supply chain which means that it is affected by several supply chains in the frozen food industry. This helps to fully understand what was taught in class, especially the theory- based concepts in class. The company's operations show the practicality of Inventory management, supply management and transport systems in the supply chain class.

1.4 Company Profile

Denaks Frozen Foods is a start-up in the heart of Jamestown (Accra, Ghana) which seeks to provide its customers (rich, middle-class and poor) with frozen foods. There are varieties of products it serves to the market. These products include fish, gizzard, chicken, and sausages. Dede Nakoh, the owner of the company, started the business to make a profit after doing an intense study of the market. Currently, the company has four working staff excluding the owner, two saleswomen and two butchers. Moreover, it has three well-stocked cold rooms to store frozen products. The company aims to establish a well-trusted

brand in the product it delivers to capture the hearts of its customers. The short-term goal of Denaks Frozen Foods is scaling up within the first five years of operating. This involves creating new branches in key suburbs of Accra and places in Ghana where frozen foods are not heard of.

In the long-run, Denaks Frozen Foods, after maximizing profits, will invest in initiatives that will help people and improve upon the lives of underprivileged Ghanaians.

1.4.1 Denaks' vision

The vision of the company is to “be the best-frozen food company in Africa and the company with the most branches in the industry” (Nakoh, 2018).

1.4.2 Denaks' mission

The mission of the company is “to create the best customer experience and customer satisfaction” (Nakoh, 2018).

1.4 Introduction to the Frozen Food Industry

The frozen food industry in Ghana forms a vital part of the food industry due to its ability to preserve food for extended periods as compared to the fresh products. Moreover, this industry has helped contribute to the Gross Domestic Product (GDP) of Ghana through the increasing growth in sales over the years (Dogbevi, 2018). The frozen food industry is comprised of a variety of products which includes fish, meat, poultry, bakery goods, fruits, vegetables, and juices. From the listed products, the product which is in high demand is frozen chicken even though the other products are attractive to invest in (Dogbevi, 2018).

The consumption of frozen chicken has experienced rapid growth in Ghana such that from 2000 to 2017, Ghana imported 135,000Mt of frozen chicken (Dogbevi, 2018). This consumption has crippled the local chicken producing business in Ghana. The reason is that these local producing farmers cannot afford poultry feeds, inadequate processing and inefficient management (Dogbevi, 2018). However, government intervention in this problem has led to a reduction of imported frozen chicken in the country and high taxing of imported frozen foods. This, however, has not changed the consumption of imported frozen foods in the country (Dogbevi, 2018).

Though the frozen food industry has experienced consistent growth, it is not devoid of problems. There are significant problems the industry faces which deter others from entry and can affect its long-term profitability. First and foremost, the issue of storage is one of the pressing needs of the industry. The lack of adequate refrigerators to store the frozen foods sometimes decreases the value and taste of the product. Moreover, the transportation of frozen foods is another hindrance to the industry. This issue comes in two forms: lack of both the trucks to transport the goods to the market and lack of road networks to certain places to deliver the products. Hence, these problems can affect the smooth running of the industry if they are not given the needed attention.

The industry has middlemen that help in the supply of frozen foods to the consumers. Industrial users can decide to transact directly with the processors or through a broker. The brokers can choose to negotiate directly with the wholesalers or forward integrate into retailing. The wholesaler can also decide to buy directly from the processors or through a broker provided the pricing suits their cost structure. Lastly, the retailers can decide to buy from either the wholesaler and the brokers. The supply chain of the industry

is interconnected since the various actors of the supply chain can choose where to buy from. Competition in the industry is both internal and external. With internal competition, the actors of the supply chain compete among themselves to suit their cost structure. However, the external competitors are canned and fresh goods which also are highly consumed by the public.

1.4.1 The future of the Industry.

Advertising of frozen products will be the new trend to inform consumers of the available products. Moreover, there are facilities under construction that will be put in place to solve the issues of storage problems. Initially, the frozen foods industry captured only high and middle-income groups, but due to its growth rate, it is likely to capture low-income groups as well. This is because poverty levels in the country have drastically reduced from 57% to 24% (Ghana Statistical Service, 2018). This implies many can afford to buy the frozen food products at considerable prices.

1.4.2 External Analysis using PESTLE

The PESTLE analysis is essential in this project since it allows me to understand the macroeconomic factors that affect the industry.

1.4.2.1 Political factors:

In the frozen food industry, the government plays a vital role in promoting smooth industry operations and its long-term profitability through its strict policies. The government has placed a ban on the importation of frozen chicken into the country (Nurah, 2018). This initiative was fueled by the cry of local producing poultry farmers who feel rejected due to low patronage by the citizens of the country (Nurah, 2018).

However, the government has placed a charge on the local poultry producers to develop ways of feeding the country with its products. When they are unable, the government will not hesitate to reverse the ban (Nurah, 2018). This policy is unfavorable to Denaks since most of its imported products is chicken. Thus, the business may collapse if the government does not reverse the policy.

1.4.2.2 Economic factors:

According to the World Bank (2017), Ghana's GDP has experienced progressive growth over the years. The current GDP of Ghana is \$47.33 billion. This amount shows that the income levels in the country are stable. Thus, people can afford to buy frozen foods in the country. Moreover, Ghana Statistical Service has revealed that the country's economy expanded by 8.5% in 2018 through the mining and oil sectors (World Bank, 2018). This shows the economic growth and stability of the country.

However, the current inflation rate has increased from 9.6% in July to 10% in September 2018 (Ghana Statistical Service, 2018). This is reflected in the price changes in the purchase of frozen products in the country. Lastly, the exchange rate in the country has increased tremendously to 4.5 cedis per dollar. The depreciation of the cedi against the US dollar has affected the import of frozen foods. With this, importers will have to pay more than they used to when purchasing frozen foods from the United States. The effect is the increase in retail prices of frozen foods. Customers who are price sensitive will react to these changes and would opt for a different option. The unstable economic performance

will affect price decisions of Denaks Frozen Foods. Hence, unstable prices can make them loose valuable customers.

1.4.2.3 Social Factors:

Eating patterns, exposure to international lifestyle, health consciousness, brand name, and population growth are the key social factors that affect the frozen food industry in Ghana.

First and foremost, the population of Ghana increases rapidly every year. Currently, the population is 29,704,768 which is 2.2% more than in 2016 (Trading Economics, 2017). This increase will result in high demand for frozen foods which will reflect in the high purchase of frozen foods in the country. Hence, Denaks Frozen Foods stands the chance of getting more customers.

Secondly, exposure to international lifestyle has created the need for international products which includes frozen foods. This need has increased the market size for frozen foods. Restaurants in Ghana use frozen foreign products for their various meals. Therefore, Denaks Frozen Foods will benefit from selling more of their imported frozen products.

Health consciousness is another key social factor. Ghanaians are now more health conscious about the kind of foods they consume (Nelson, Lion, Crawford, Curtis, Feunekes & Uauy, 2013). Hence, certain brands of frozen foods are not consumed by the people in the country. Thus, customers are very selective in their choice of frozen foods. When Denaks Frozen Foods sells the right and approved brands of frozen products by the market, they will make more revenue and profits.

Moreover, the brand name is essential in this industry to capture customers in the market. In Ghana, the market is geared towards certain brands which are seen as to have the best quality product. When these brands are out of stock, hardly will the customers buy from other unknown brands.

1.4.2.4 Technology:

In this industry, the government has introduced a new technology called the Cargo Tracking Note (CTN). This technology is to help in taxing imported frozen foods and monitoring until it reaches the buyer (Ibrahim, 2018). This technology will help curb corruption that arises in this industry. In past times, the high corruption rate in the industry made some of the frozen food businesses collapse since various companies could not track and monitor their products (Ibrahim, 2018). Even though there have been several lawsuits against the CTN, it will help minimize theft and corruption in the industry in Ghana.

1.4.2.5 Legal:

In this industry, the authority responsible for checking and monitoring the inflow of frozen products is the Ghana Food and Drugs Board Authority. To ensure that the frozen foods imported are healthy for human consumption, there are several laws in place to check and monitor the imports. Sanctions are applied when the players in this industry are at fault.

1.4.2.6 Environmental:

Current news shows that some companies are injecting chemicals into the chicken to increase the size. This has posed a lot of threats to the frozen food industry. Many people have become conscious of what kind of frozen food brand to consume for health reasons.

Table 2 PESTLE Analysis

Pestle Analysis factors	
Political	<ul style="list-style-type: none"> • Strict Government Policies
Economic	<ul style="list-style-type: none"> • Increase in Dollar-Cedi rate • High-interest rates • Increasing inflation
Social	<ul style="list-style-type: none"> • Increase in population • Purchase of frozen food based on brand name • Health consciousness • Exposure to international lifestyle
Technology	<ul style="list-style-type: none"> • Introduction of Cargo Tracking Note (CTN)
Legal	<ul style="list-style-type: none"> • Food and drug board
Environment	<ul style="list-style-type: none"> • Injecting chemical into Chicken

1.5 Using Porter's Five Forces to analyze the industry.

In this project, the use of Porter's Five Forces will help understand the long-term profitability of the industry and its attractiveness. Moreover, the various factors in Porter's Five Forces will help understand what role each play towards the profitability of the frozen food industry in Ghana.

1.5.1 Threats of New Entrants:

The profitability of the frozen food industry in Ghana motivates many people to enter the industry. However, the current government policies have deterred many from entering the industry. These policies include the increase in tax on every kilogram of the frozen products from \$0.35 to \$ 1.00 (Arthur, 2017). The increase in the cedi-dollar rate has affected the transactions between Ghana and the United States, preventing many without enough capital from entering the business.

Moreover, entering the frozen food industry is very costly due to the expensive machines one must buy to operate. The price of a cold room (\$3000) and freezers (\$1000) are very high which requires high capital to enter the industry. The frozen products are imported in large quantities which requires more cold rooms and freezers to store them. Hence this makes the barrier to entry high and therefore prevents many from entering the industry.

Also, operating in the frozen food industry means buying in bulk from companies outside the country. The players in the industry buy in large amounts and receive discounts from their large purchases. This means that they buy in bulk at a relatively lower price. This gives them an upper hand over new entrant. New entrants would like to start small by buying small quantities which means they will pay a relatively higher price compared to incumbents. From the above explanations, it can be deduced that the barriers to the frozen food industry are very high.

1.5.2 Bargaining Power of Suppliers:

The frozen food industry in Ghana depends solely on external companies to supply it with the products. Due to this, there are many suppliers in the industry. However, brand loyalty in Ghana has narrowed the suppliers only to the United States (US), The European Union, Asia, and South Africa. Many suppliers in the industry imply that there are varieties to choose from if their pricing is favorable. The suppliers do not have much power over the industry since the suppliers are many and can lose customers if there is a low switching cost for the customers. Moreover, since the frozen food products are similar, the vendors can choose any supplier provided their pricing suits the industry's cost structure. Hence, suppliers have a low bargaining power affecting their long-term profitability.

1.5.3 Threats of Substitutes

In Ghana, many substitutes can replace frozen products. Products that are canned and fresh stand as the significant substitutes of frozen foods. The increase in tax by the government has factored a substantial increase in the pricing of frozen foods in Ghana. Hence, customers pay more than they used to pay. However, in Ghana, the substitutes of frozen foods are locally made in the country which has low consumption by the people. Trusted brand loyalty for frozen products enables frozen food companies capture the market segment. This is seen in the high use of frozen products in the country. Hence, the threat of substitutes is very low.

1.5.4 Rivalry amongst Incumbent:

Competition amongst companies in the industry is very unfair since the government has favored some companies by taxing them lower than others (Arthur,2017). According

to Herald News, the government has supported two companies in the industry owned by a member of government: Madam Buah. By taxing other companies very high, it has pushed many importers of frozen foods out of business (Nurah, 2018). Moreover, product differentiation in this industry is very low. This means that the products are similar and hence buyers can buy from any retailer provided the product is cheaper. This makes competition very high in the industry.

1.5.5 Bargaining Power of Buyers:

In this industry, the products are similar which means that they provide the same value to the customers. Moreover, there are many buyers in this industry. Hence any change in the price of the products will make them highly reactive to these price changes. The reaction by the many buyers in this industry will force vendors to lower their prices to capture the customers. If they do not, the buyers are likely to move to the next vendor where pricing is more favorable.

Table 2: Porter's Five Forces.

Porters Five Forces	Their contribution to the profitability of the industry
Threats of new entrants	<ul style="list-style-type: none"> • Government policies • Higher capital requirements
Rivalry amongst incumbent	<ul style="list-style-type: none"> • Unfair competition • Low product differentiation
Bargaining power of buyers	<ul style="list-style-type: none"> • High bargaining power
Threats of substitutes	<ul style="list-style-type: none"> • Low threats

Bargaining power of suppliers	<ul style="list-style-type: none"> • Low bargaining power • Many suppliers in the industry
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1.6 SWOT ANALYSIS

The SWOT analysis is an essential part of an organization's planning. This is because the analysis helps the company to identify and assess their strengths and weaknesses, so they would be able to explore new opportunities available and manage any threats the company will face. The SWOT analysis has four assessment areas which are strengths, weaknesses, threats, and opportunities. The table below shows the highlighted points of the company's SWOT analysis.

1.6.1 Strengths:

Fast moving consumer goods:

The high consumption of frozen products in Ghana makes the products movable. Due to this, there is high demand for the products in the markets. Denaks can sell at least 20 boxes of frozen products a day.

Improved Technology:

Unlike other cold stores which have only freezers to store their product, Denaks has three cold rooms with two freezers for mass storage. Hence, they import large quantities of products from abroad which gives them an upper hand when there is a shortage.

Well-Structured Employee Retention System:

In Denaks Frozen Foods, rewards and incentives are given to workers for a good performance. These incentives include increase in salaries and regularly providing the employees with food. This creates a conducive atmosphere for the workers to do their best work.

1.6.2 Weaknesses:

Lack of experience:

The company is a startup and therefore has a lot to learn about their customers and their market. Moreover, they are not well-known in the community in which its situated.

1.6.3 Threats:

Government policies:

The government has increased the tax on imported frozen products to Ghana. Importers pay more than they should. This has resulted in the increase of the prices of the product. Customers, on the other hand, are reacting to the price changes.

Imitation by other companies:

The fear of Denaks Frozen Food is imitation by other companies. They fear that larger companies will imitate their business strategies and implement it for themselves.

1.6.4 Opportunities:

Increase in consumption of frozen products:

Denaks Frozen Food can venture into other frozen food products such as fruits and vegetables. This brings more varieties in their product line and gives customers more

options to choose from. This will also increase the company's profit margin. In addition, there has been a high demand for storage facilities to store the frozen product in the industry.

Table 3 SWOT ANALYSIS

<p>STRENGTHS</p> <ul style="list-style-type: none"> • High demand for products • Improved technology • Well-structured employee retention strategy • Location • Language advantage • Mentor 	<p>THREATS</p> <ul style="list-style-type: none"> • Imitation by other companies • Increased competition • Government policies
<p>WEAKNESSES</p> <ul style="list-style-type: none"> • New in the Market 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • High demand for cold store facility <ul style="list-style-type: none"> • Increase in consumption of frozen products

Chapter 2

Needs Assessment

Chapter Overview

This chapter discusses the various methods which were used to capture information from the owner and the workers of Denaks Frozen Foods to assess the needs of the organization. The research methods used were observational study and in-depth interviews. The reason for these research methods was to get a holistic understanding of the pressing problem identified.

2.1 Needs Assessment

Needs Assessment, according to McCawley (2009), is a systematic method which involves studying to understand the state of knowledge, ability, and interest of a defined audience of a subject. A well-conducted needs assessment helps to provide credibility to the researcher and ensures that there is no bias in the research conducted. In this project, the needs assessment will help assess the list of problems the company faces and sort out the most pressing problem which affects the smooth running of the company and denies the company from achieving their short-term goals. Thus, in this needs assessment, the main aim was to develop in-depth insights about the pressing problem of the company which will inform the appropriate solution to produce for the company.

2.2 Methodology

Methodology is a process of capturing information and data from the participants in a research study to arrive at an unbiased conclusion. In this research, a qualitative research method was used in retrieving data from the participants. The reason for this method was that it would help the researcher gain a full understanding of the underlying

problems, retrieve key insights from them and generate themes from the responses of the participants. These themes will capture the grievances of the participants towards the problems. Hence, with the small size of the participants, this method will help me interact with each participant to know what was happening on the ground.

Moreover, a holistic understanding of the problems of the company was another reason for choosing this method. This involves observing every part of the participants interactions on the job to note relevant expressions they show towards the problem. This method was better than the quantitative method because, with the quantitative method, historical and secondary data will be used which will not perfectly describe the situation at hand in the company. However, with qualitative research, there is a substantial explanation of the problems by the participants involved.

In gathering information, the first tool used was an in-depth interview with the participants involved.

The type of interview used was a semi-structured interview where I came up with relevant and open-ended questions to enable the participants candidly express their opinions about the problem. With this type of interview, the participants will be relaxed so they could answer the questions asked, making the interview more of a discussion than a straight forward question (Doyle, 2018). This will allow me to probe deep during the interview to obtain key insights. During the interview, the body languages and gestures of the interviewees were observed to prove how pressing the problem was to them since the gestures express the discomfort of the participants towards the problems.

The second tool used was an observational study. Observational study helps to unravel the effects and causes of the problem and understand the causes and effects. Hence, with this tool, the day to day activities and events in the company were observed to see how workers coped with the various problems. This tool was used continuously for six days to fully understand how the business operates daily and the various problems they encountered daily. During the observation, I didn't participate in any of the activities of the company. This was to avoid being biased. The workers were also observed from various points including their attitudes towards work, gestures and body languages when working. Lastly, the various storage rooms for inventory were also observed to see how the company managed its inventory daily and how their products were transported from suppliers to these storage rooms.

2.3 Insights obtained from an in-depth interview of the owner of the company.

From the interview with the owner of the company, she explicitly explained the core values which bind the workers in the company together. These include honesty, integrity, and respect. Also, she passionately expressed her goal to become the biggest frozen food company in Ghana and to invest in initiatives to help the underprivileged in the society. This is the long-term ambition of the company. Thus, the day to day activities is geared towards achieving this goal. The short-term goal of the company is to open branches locally to capture the global market.

The company, in its attempt to achieve this dream, faces problems which deter them from achieving both the long and short-term goals. From the interview, the owner of the company revealed the problems the company was facing currently. These problems

included employee turnover, the language barrier between workers and customers, manual cash payment, poor inventory management and pressure from suppliers. The owner further explained that she had employed a better employee retention strategy to resolve with employee turnover. Due to this, employee turnover was not a problem for the company. Moreover, the language barrier between employees and customers has been resolved by employing an employee who speaks multiple languages.

Manual cash payment and inventory mismanagement were the two pressing issues in the company. However, from further questioning, it proved that inventory mismanagement was the most pressing issue which affected the smooth running of the business. Thus, the company does not have the appropriate technology to track their inventory which poses a threat to their goal of creating branches considering that as they become a bigger company, they would need sophisticated technology to manage their inventory.

2.4 Justification for selection

After an observational study and a semi-structured interview, the response analyzed revealed that poor inventory management was the most pressing problem among all the identified problems. When this problem persists, the company may end up with huge losses which will affect both their long- and short-term goals. There is also the likely hood for the workers to steal the products if the inventory is not well monitored with the appropriate technology. With the other problems, the owner explained that the company can maneuver around them and still make persistent profits.

2.5 Problem Statement

Denaks Frozen Foods is experiencing the high threat of huge losses due to a poor inventory management system. Thus, this affects the smooth business operations preventing them from achieving their future goals of establishing branches in Accra and investing in initiatives to support the underprivileged in the society.

2.6 Research design

Another semi-structured interview was conducted about the company's poor inventory management to probe deep into the causes of the problem. This interview was conducted in the house of the owner due to her convenience and availability. Moreover, an observational study was employed to see the procedures the company uses to manage its inventory.

2.6.1 Data collection instrument:

A convenience method was used in the study. With this method, the participants are selected due to their willingness to participate and can withdraw whenever they feel the need (Farrokhi & Mahmoudi-Hamidabad, 2012).

2.7 Key findings from observational Study and In-depth Interview

The purpose of the second interview and the observational study was to derive relevant insights concerning the current inventory management system and the problem it poses. Also, the body language was taken into consideration to know how the participants expressed themselves about the problem. Below are the responses of the owner during the interview.

- Current inventory management Technology:

From the interview, the owner explained that she used Microsoft Excel to handle the inflow and outflow of inventory in the company. However, she further explained that Microsoft Excel would not be efficient in handling large inventory when they scale up in the future. Products from suppliers are counted manually by staff members and stocked in the cold rooms. After counting the products, there is a manual imputation of data into the excel sheet. This process involves at least three working staff to ensure that the work is done. When a wrong number is imputed into the Microsoft Excel sheet, the stock will be either overstocked or understocked. Thus, this will make the employees use the opportunity to steal the products which are not accounted for.

- Monitoring of inventory:

When asked about how inventory was monitored, the owner explained that products from suppliers are counted and recorded before transported to them. When the products arrive, the workers will re-count the products to check whether what is documented on paper corresponds to the actual number of products. In the case where the products are numerous, the workers have more manual counting which could have been done easily with the right technology. The manual counting done by the workers is sometimes subject to human errors which could result in wrong inputs leading to losses to the company.

- Dealing with stock out:

The owner explained that there had been times when the company had run out of stock. Customers who wanted a certain type of product were disappointed since they did not get what they wanted. This placed the company at a disadvantaged position and made

them unreliable. They did not have the right technology to inform them about which product was in shortage. This poses a threat to the company since they can lose customers.

- Storage of inventory:

According to the owner, the company currently has two storage rooms working to freeze the products until they run out of stock. There is also a bigger cold room to store the products when the company scales up. However, the bigger one is not in use.

- Insights obtained from the in-depth interview of the workers of the company.

After interviewing the owner of the company, the workers were also interviewed to understand how poor inventory management affects the company from their point of view. Surprisingly, the workers expressed the same grievances towards the problem as the owner did. Without the appropriate technology to monitor their inventory, manual counting of the stocks can be hectic when the products are in larger quantities. Moreover, after counting the products from suppliers, the products will be counted again before they are placed in the storage rooms. This back and forth counting of products sometimes delay the workers from closing at the usual times.

One of the workers explained that, due to the lack of appropriate technology to monitor their inventory, they must enter the cold room where the products are stored to re-count the remaining stocks. This informs whether they would need to buy more products from suppliers or not. When this counting is done wrongly, the company is likely to either overstock or under-stock. Thus, resulting in a surplus or shortage respectively.

Lastly, the workers expressed the need for a software that could make their work easier and simple. Even though the workers are not technologically inclined; they demonstrated the need to learn about the software and implement it into the company. When this software is implemented, the company can achieve its short-term goals.

2.8 Conclusion

From the interviews conducted, the key problems identified were a manual cash payment, employee turnover, and poor inventory management. These problems are a possible threat to inhibit the company from achieving their short goals which are increasing revenue and establishing branches in Suburbs in Accra. From the problems identified, the one with the higher threat of preventing the company from achieving their short-term goals is poor inventory management. The owner of the company stated in one of the interviews that the other problems are dealt with and no longer pose a high threat towards achieving their company goals.

However, when inventory is mismanaged, the company will fail in satisfying the demands of its customers due to regular stock-outs. This results in driving customers to other companies which satisfy their demands. Thus, losing valuable clients to their competitors. On the other hand, mismanagement of inventory will lead to an excess of stocks which exceeds demands. This can lead to products getting expired, getting out of season and damaged in the storage rooms (Marx, 2018).

Lastly, poor inventory can result in employees taking the advantage to steal from the company since the products will not be accounted for. Customers on the hand can also steal from the company when proper inventory security measures are not prepared for the

products. Thus, this places inventory management at a higher priority than the other problems. Therefore, poor inventory management in Denaks frozen will inhibit the company from achieving their short-term goals.

Chapter 3

Literature Review

Chapter overview

In this chapter, the aim is to explore the various articles relating to the topic and develop key insights and holistically understand the topic from the various view points of the authors. Thus, this will help inform the right solution to be implemented into Denaks Frozen Foods to help curb their inventory-related problems.

3.1 Introduction

Inventory management System is the combination of the right technology, procedures, and processes to effectively monitor a company's stocked products (Pontius, 2019). Companies with proper inventory management systems can keep track of every item within the control of the organization, making them more competitive in the market (Pontius, 2019). The aim of every company is to achieve persistent higher profits and have a competitive advantage over their competitors. In other to achieve this goal, inventory management is of great value since it determines the profit or losses of the company which reflects the overall performance of the company. When inventory is managed well, the company has a higher chance of making a persistent profit by satisfying the various demands of customers (Marx, 2018). Satisfied customers will always want to make transactions with the company and will bring more customers to the company. This helps to establish and sustain a trustworthy brand name for the company. Hence, winning a greater portion of the market segment.

However, when inventory is mismanaged, the company will fail in satisfying the demands of its customers due to regular stock-outs (Marx, 2018). This results in driving customers to other companies which satisfy their demands. Thus, losing valuable clients to their competitors can result in the loss of sales making the company unfit to achieve their revenue targets (Wei Chan et al., 2017). On the other hand, mismanagement of inventory will lead to an excess of stocks which exceeds demands. This can lead to products getting expired, getting out of season and damaged in the storage rooms (Marx, 2018). This places Denaks Frozen Foods at a disadvantage position where its market segment is concerned.

3.2 Causes of poor inventory management

Different authors have highlighted poor documentation of inventory, unreliable supplier supplies and bad lead times as the main causes poor inventory mismanagement which affects the smooth running of a company.

According to Chan (2017), manual documentation of products takes a longer period to record the products available (Chan, 2017). However, this manual documentation has a higher chance of misplacing figures of the individual products causing discrepancies of the records (Chan, 2017). This affects the accurateness of the stocks available making some products unaccounted for. These unaccounted products can damage, expired and get stolen by workers (Chan, 2017). Thus, the company may end up making huge losses for the unaccounted products.

Secondly, unreliable suppliers contribute to poor inventory management in a company. According to Melanie (2017), suppliers have a huge-on effect on inventory control. This implies, that when your suppliers are unreliable, the company is likely to

perform poorly during stockouts situations. Suppliers may delay the products due to external factors such as car break down and out of stock. When this happens, the company may lose valuable clients to competitors who meet the demands of their clients. The longer suppliers delay in supplying the products, the higher the chance for the company to run out of business.

|Lastly, late lead times contribute to poor inventory management. Melanie (2017) explains lead time as the time it takes an ordered product to arrive. She further explains that lead times vary depending on the product (Melanie, 2017). Thus, when a highly demanded product exceeds its lead time, there will be a shortage of that product. The company affected will have to find new suppliers to meet their lead times. This becomes a problem when the products of the old order and the new order arrives at the same time. This results in excess inventory making the companies physical locked up in the inventory.

Also, Airman (2017), addresses the internal and external causes of poor inventory management. His article proves that external factors such as customer theft can lead to poor inventory management. He claimed that when customers have direct contact with the product without any form of security, it creates an opportunity for customers to shoplift products they want. This unaccounted product loss results in the company losing profits. He further explains the internal factors as the major factors which cause poor inventory management. They include employee theft, the point of sale and policies as the internal causes of the problem.

Comparing the author's key findings of the causes of poor inventory management with the need's assessment conducted, there is no relation. This is because the workers in Denaks Frozen Food are well compensated enough to provide their basic needs. Thus,

employee theft in the company is thoroughly checked. With customer theft, the company only allows customers to have direct contact with their products after they have made payment for the number of products they want. The company does not use a point of sale for its operation and policies are not implemented since the company is a startup. Hence, though Brian Airman addresses the causes of poor inventory management in the frozen food industry, his theory does not apply to Denaks Frozen Foods.

3.3 Effects of Poor Inventory Management

In investigating the effects of poor inventory management, the findings from an author; Samuel Bradshaw aligns with the results of the needs assessment conducted in Denaks Frozen Foods. First and foremost, according to Samuel Bradshaw, inability to forecast demand is prevalent in companies with poor inventory systems. The author further explains that small scale companies are unable to track the sales records to determine which products to buy more to satisfy customer demands. This proves how Denaks Frozen Foods is unable to forecast demand as to which products they should buy more or eliminate from their stocks. Their current technology which is Microsoft Excel though helpful, cannot be used when the company intends to scale up and establish more branches in Accra.

Secondly, according to the findings of three authors in an article concerning a study on the inventory control system, they found out that excess stocks and stockout are evidence of poor inventory management in small and medium enterprises (SME's). This, however, is the result of the inaccuracies that occur between physical stock and recorded

stock (Fashaya et al., 2017). From the observational study conducted during the needs assessment, it proves that Denaks Frozen Foods was facing the same effects from the poor inventory management system. Thus, the uncertainty in the number of stocks to purchase possess a threat of the company losing customers due to stock-outs and products expiring because of excess.

3.4 Inventory Management Strategies

There have been several strategies implemented to manage inventory in SME's. Different authors have expressed their views towards the best inventory strategy to employ to track stocks efficiently. Thus, in the section, the various findings from the authors will be compared to understand the points of view.

In the article by Fashaya et al., the authors highlighted the various inventory strategies that are suitable for SMEs for their inventory management. These strategies include Economic Order Quantity (EOQ), Lean Procurement, Just-In-Time, Enterprise Resource Planning (ERP) System, Material Requirement Planning; Vendor Managed Inventory and the ABC classification of Inventory. They further conducted a study on the implications of these strategies on SMEs and arrived at the following conclusions.

- Firms that used Economic order Quantity and Just-In-Time as their inventory management strategies achieved a higher inventory turnover rate (Fayasha et al., 2017). This means that the firms were able to convert their inventory into cash to obtain high sales. Thus, making more profits from their inventory. Secondly, these strategies also help to provide cost savings and improve profitability for the company implementing it (Fayasha et al.,

2017). The above two inventory strategies are suitable for the company to make huge profits. These two strategies will be useful For Denaks Frozen Foods since its short-term goal is to establish branches in suburb areas in Accra and make more profits. This is possible due to the persistent high profit they will achieve when they implement either of these strategies which will enable them to pay new workers for their new branches.

- The ABC classification of inventory is the widely accepted strategy for inventory control. This strategy involves classifying products into a level of importance. Thus, this helps the firms to know which product is in high demands by the customers to order more of these products (Fayasha et al., 2017). Companies using this strategy can eliminate stocks which are not important to the market and focus more on the more demanding stocks (Fayasha et al., 2017). This Strategy will be useful for Denaks Frozen Food and help them focus more on the needed frozen products to focus on.

3.5 Explaining the individual Inventory strategies

ABC Analysis:

The ABC analysis is an inventory strategy which involves an inventory categorization of stocks based on their level of importance (Fritsch, 2014). This technique provides a mechanism for identifying stocks that have a high impact on the overall inventory stock (Fritsch, 2014). Thus, different stocked items that are not all equal in value are managed using this technique to ensure the items are in their right quantities to meet customer demand. Items are grouped into three categories (A, B, C).

For category **A**, these items are essential to the company. This is due to the high demand for these products. Hence, it makes them fast-moving, and the company makes most of its profit from these items. For category **B**, the items are of importance but are relatively lesser in relevance than Category A. lastly; category **C** products are those that are marginally important and have a low demand by the customers.

Though this technique is beneficial for SME, it has these limits within which it operates. According to Smirnov (2018), he highlights that the ABC analysis does not apply to business with equable annual consumption of items. This is because it makes it difficult to segregate the items using the Pareto principle. Secondly, the author highlights the complicated nature of this technique. He states that it requires more effort to manage inventory. Hence, more staff will be required to use for this technique.

Economic Order Quantity:

Economic Order Quantity according to Boyd (2013), is a decision tool used to calculate the ideal number of stocks to order for a product. The inventory strategy is based on certain assumptions according to the author (Boyd, 2013). These include:

- The assumes that the same quantities ordered at each reorder point.
- It assumes that the customer demand for products is known.
- It also assumes that the lead time is known.
- Lastly, it assumes that there is no stock out.

Sarita Harbour (2019), another author highlights the advantages and disadvantages of economic Order Quantities. Minimizing storage and holding cost are the advantages the authors address (Harbour, 2019). On the other, the author stated the strategy is based on

assumptions and have complex calculations which make the strategy difficult to use (Harbour, 2019).

Just-In-Time:

According to Calderone (2017), Just-in-time inventory is a strategy employed to increase and efficiency and avoid waste of goods by receiving goods as they needed for the market. The strategy helps to reduce the cost of holding inventory hence making it cost efficient (Calderone, 2017). Though this strategy is very helpful, there are negative sides to it. The authors address that the strategy is used for only small orders which means that companies with large inventory cannot use this model.

3.6 Information Technology (IT) in Inventory Management:

The introduction of IT into inventory management practices will help curb the issues associated with poor inventory such as inaccuracies, manual counting by bringing Technologies that will accurately check stocks and make work simple. However, authors have to disrepute the presence of IT in inventory management. According to Narayanapillai (2010), the presence of Information Technology has not helped to curb the issues associated with poor inventory. He claims that IT is sophisticated and very difficult to adapt to the workers in the industry (Narayanapillai, 2010). This is due to their level of illiteracy. Thus, though IT is helpful, it is useless where the workers are unable to use the technology to inform their decisions concerning their inventory (Narayanapillai, 2010). He also highlights that the software to track inventory is costly to purchase. Hence, Denaks Frozen Foods, which is an SME will not be able to purchase such software. This issue disqualifies Denaks Frozen Foods from having sophisticated software for managing its inventory.

Though the introduction of IT into inventory has not fully curbed the associated problems with inventory, it has been able to make work easier and better. According to Dhodi, (2018), Information technology has improved inventory accuracy, improved the speed of service to customers, enhancing stock availability to customers and improving order processing. Thus, from this author's point of view, information technology is essential in handling inventory related issues. This implies that when Denaks Frozen Foods employs a user- friendly technology to manage their inventory, the listed roles of IT will help curb their inventory related issues since the company's inventory problems revolves around the use of the right IT.

3.7 Conclusion

From the various viewpoints of the various authors concerning inventory management, it places inventory management as the main source of a company's competitiveness in the market. The articles also show inventory management as the basis for the overall performance of a company. The introduction of Information Technology has helped companies to manage their inventory faster and easier than the traditional way of managing inventory which is more prone to errors. From the above, it shows how valuable inventory management is to a company. Thus, proper management of stocks by Denaks Frozen Foods will help the company achieve its short-term goals which are establishing branches in suburb areas in Accra.

3.8 Proposed Solution

The solution for Denaks Frozen Foods is to implement an inventory management software that is built on the principle of both ABC Analysis and Economic Order Quantity. This is because the ABC Analysis will allow the company to segregate their products into the level of importance. This will help them Prioritize more on the highly demanded product by the market. Thereby eliminating products which are not needed by the market anymore. The economic order Quantity, on the other hand, helps the company order the right number of products from suppliers. In the case of Denaks Frozen Foods, the company will be able to segregate their frozen products into level of importance and at the same time order these products in their right amounts in times of shortages. This proposed solution was informed by the literature review obtained.

Chapter four

Solution

Chapter Overview

This chapter seeks to highlight the solution that has been developed to address the poor inventory management in Denaks Frozen Foods. The solution obtained is a Point of sale (POS) with inventory management features that will help solve the problem of over and understocking, stockouts, back and forth counting of stocks. The various features of the software that addresses the inventory related problems will be highlighted to show how they help solve the inventory problems in Denaks Frozen Foods. The literature review in the previous chapter informed the solution implemented.

4.1 Reasons for selecting the Software

In finding the best software to address the poor inventory management system in Denaks frozen foods, two software were found which could solve the same problem. These were LoyversePOS and OrderlyPOS. Though each could solve the problem, only one had to be selected based on the client's willingness to incur costs that came with the software. At the end, OrderlyPOS was chosen due to the reasons below.

First and foremost, the simplicity of the software was considered before selection. The workers in Denaks Frozen foods are not technologically inclined to use sophisticated software. Thus, careful attention was given to user-friendly features of the software. The

software has features which can be understood by all users. It has no complex writing of codes but has built-in functions that make it easier to use.

Secondly, security was another factor considered when choosing the software. The software has a special feature which makes the owner of the company give access to workers she wants. The owner (Administrator) can choose who to access certain features of the software. Hence, no unauthorized user can make any changes to the inventory without permission from the owner.

In addition, OrderlyPOS can be used when the company opens new branches in various areas in Accra. The owner does not need to change the software. Also, the owner can monitor the transactions and inventory of the new branches without being physically present.

Moreover, the owner of the company can request for additional features for the software and it will be done for them. These additional features will be built to make work easier. The software comes with different payment methods from which customers can pay for their products.

Lastly, the cost of operating this software is cheaper as compared to the other the software. Hence the reason for choosing this software.

4.2 Description of Software

OrderlyPOS is a POS software which was developed to play a significant part in a company's day-to- owner day operations. It works on the principle of ABC analysis where the software displays the highly purchased products and the least purchased products at the backend of the software. This informs the to put more priority on the most purchased

products and less priority on the least purchased. It has many features for inventory management which makes work easier and simple and saves more time and energy when working. These features include:

- **Track Inventory feature:** This help to track the stocking of products and their components
- **Low Stock Notification feature:** This feature notifies the owner about low stock and the necessary ordering process should be made.
- **Purchase order feature:** This helps to plan purchases and exports records to suppliers for ordering.
- **Stock Adjustments:** This allows you to increase stock levels in the company when new products arrive.
- **Inventory history report:** This helps the owner to gain insights concerning the inflow and out flow of inventory to inform their decision making.

4.3 Breakdown on how to use the tool.

The software has a Login page which allows new users to enter their credentials to have full access to the features of the software. After the user logs In, the software opens a dashboard (Backend for Administrator) which allows the user to see the gross sales and how much profit the company is making without manually calculating. At the left side of the dashboard are built-in features for using the software to handle inventory. These options include

- Purchase Orders
- Stock Adjustment

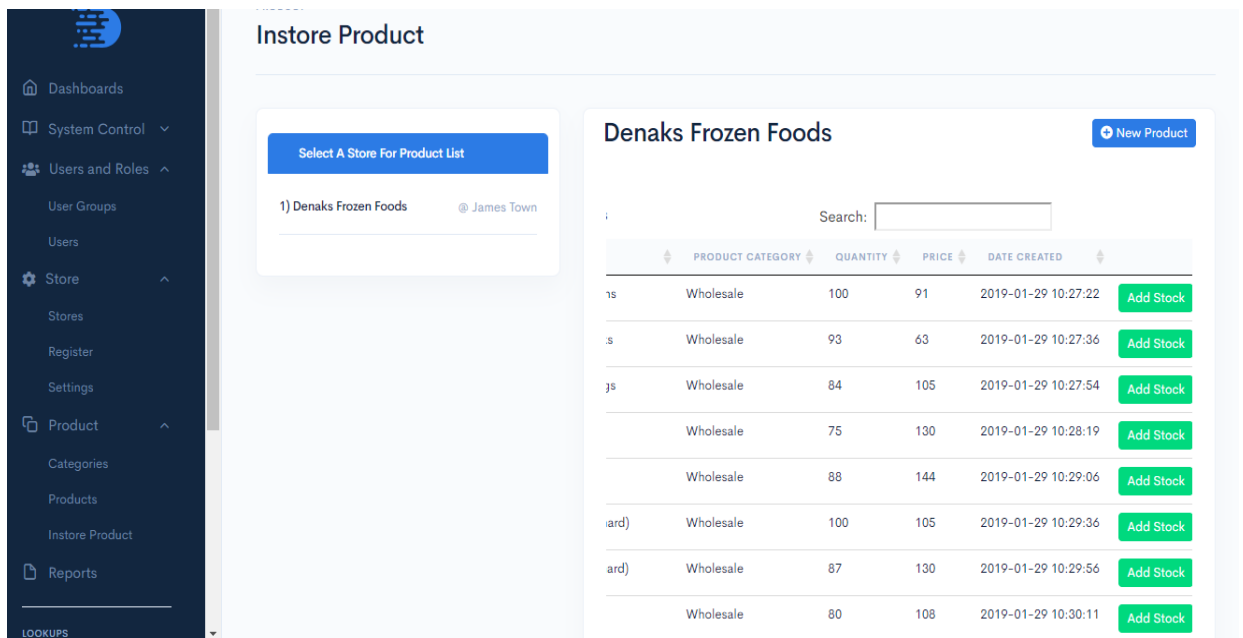
- Inventory history
- Pre-order Feature
- Add new store feature

Purchase Order:

This feature helps the user to create a purchase order to suppliers to inform them of the date they expect the order to arrive. The user can use this feature to purchase the quantities they need for each product. They can also calculate the cost they will incur from ordering the products in this feature.

Stock Adjustment:

This feature helps to adjust their inventory in the cases of damage, loss, expiring and new products. This helps to keep the company on track and help them in meeting the demand of customers.

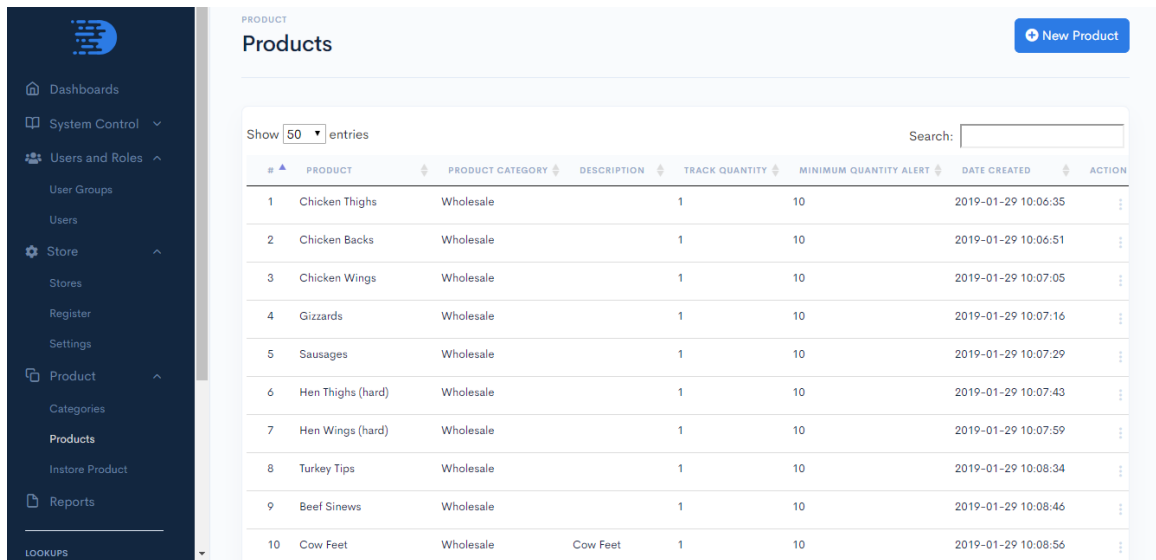


The screenshot displays the 'Instore Product' interface. On the left is a dark sidebar with navigation options: Dashboards, System Control, Users and Roles, Store, Product, and Reports. The main content area is titled 'Instore Product' and features a 'Denaks Frozen Foods' section. This section includes a 'Select A Store For Product List' button, a search bar, and a table of products. The table has columns for Product Category, Quantity, Price, and Date Created. Each row represents a product entry with an 'Add Stock' button.

	PRODUCT CATEGORY	QUANTITY	PRICE	DATE CREATED	
1s	Wholesale	100	91	2019-01-29 10:27:22	Add Stock
s	Wholesale	93	63	2019-01-29 10:27:36	Add Stock
3s	Wholesale	84	105	2019-01-29 10:27:54	Add Stock
	Wholesale	75	130	2019-01-29 10:28:19	Add Stock
	Wholesale	88	144	2019-01-29 10:29:06	Add Stock
ard)	Wholesale	100	105	2019-01-29 10:29:36	Add Stock
ard)	Wholesale	87	130	2019-01-29 10:29:56	Add Stock
	Wholesale	80	108	2019-01-29 10:30:11	Add Stock

Add new product Feature

On top of the inventory management icon, there is an icon for adding new items. With this icon, the user can add more items in stock and can categorize them in various forms for easy identification.



PRODUCT
Products New Product

Show entries Search:

#	PRODUCT	PRODUCT CATEGORY	DESCRIPTION	TRACK QUANTITY	MINIMUM QUANTITY ALERT	DATE CREATED	ACTION
1	Chicken Thighs	Wholesale		1	10	2019-01-29 10:06:35	
2	Chicken Backs	Wholesale		1	10	2019-01-29 10:06:51	
3	Chicken Wings	Wholesale		1	10	2019-01-29 10:07:05	
4	Gizzards	Wholesale		1	10	2019-01-29 10:07:16	
5	Sausages	Wholesale		1	10	2019-01-29 10:07:29	
6	Hen Thighs (hard)	Wholesale		1	10	2019-01-29 10:07:43	
7	Hen Wings (hard)	Wholesale		1	10	2019-01-29 10:07:59	
8	Turkey Tips	Wholesale		1	10	2019-01-29 10:08:34	
9	Beef Sinews	Wholesale		1	10	2019-01-29 10:08:46	
10	Cow Feet	Wholesale	Cow Feet	1	10	2019-01-29 10:08:56	

Add new store feature

The feature is used when the company opens new branches. With this feature the owner of the company can monitor the inventory and transactions that happen in the new branches.

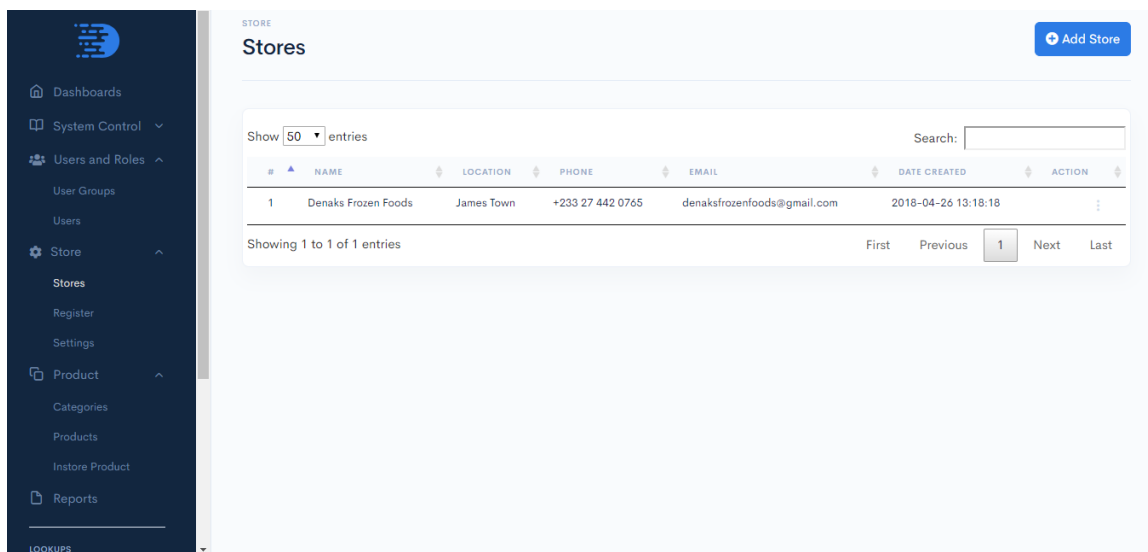


Table Implementation Plan

Solution	Parties responsible for the implementation	Relevance
Installation of software on the company's computer	OrderlyPOS IT expects	The software is installed on the Personal computer of the Owner of Denaks Frozen Foods.
Setting a space on the server for client.	OrderlyPOS IT expects	This helps the company create a space for storage on their server.
Creating a login access for client	OrderlyPOS IT expects	This gives the client access to the features of the software.
Setting up the software for the client using the client's product lists.	OrderlyPOS IT expects	The products will be displayed on the OrderlyPOS.
Connection of software to the database system	OrderlyPOS IT expects	This is where information of the products is stored.
Training Staff About the software	Myself, the owner and one of the workers.	Training the staff on how to operate the software and be acquainted with the features.

After implementation:

The software implemented in Denaks Frozen Foods has helped the owner of the company to keep track of her inventory more effectively as compared to the manual methods the company used. Stockouts have been avoided since the software sends several notifications concerning a product which is about to finish to prompt the company to restock. Thus, they can meet customer demands by restocking.

The company's short-term goal is to establish branches in several areas in Accra. With the help of OderlyPOS, the owner can manage all the inventories in the branches without physically going there. Thus, large input of inventories will not be a hindrance to the company when they are scaling up.

Back and forth counting of product is checked using OrderlyPOS. The Software automatically updates itself, keeping the owner informed of the current stock. This makes work simpler as compared to the manual back and forth counting of products.

In addition, the Orderly POS provides a point of sale service where the owner can generate reports of sales and monitor the day to day sales of the company. This informs the decisions made by the owner where profit is concerned.

Lastly, the software categorizes the products into level of signifies. Thus, this allows the owner to put more priority on the products which are highly purchased and less priority on the less purchased ones.

4.5 Limitations of the Solution:

Though the solution implemented helps to curb overstocking, understocking, stockouts, back and forth counting of stocks in Denaks Frozen Foods which makes the software efficient in managing the inventory, there are some drawbacks to the software.

Firstly, there are a few manual imputations in the software which when care is not taken can result in minor errors.

Secondly, the software requires constant internet connection for its operation. Hence the faster the internet, the faster the software's operations. In cases where there is no internet, the software cannot operate. Thus, the company will incur additional cost which is subscribing to internet bundles to keep the software running.

Lastly, the software requires a monthly payment which is 100 cedis to continually use the software. When the company does not pay, they will not have access to the features of the software.

Chapter Five: Recommendation and Conclusion

Chapter Overview

In this chapter, a summary which highlights key insights gathered from the project will be documented. Moreover, changes will be recommended to enable Denaks Frozen Foods effectively and efficiently utilized the solution implemented. Other problems retrieved from the needs assessment will be suggested with a possible solution. Lastly the limitations faced during the entire research will be addressed accordingly.

5.1 Modifications to be made in the operations of Denaks Frozen Foods

After implementing the software, the company needs to have constant WIFI to keep the software running. Secondly, Denaks Frozen Foods should also employ online transactions in its cash flows to ensure that there are no theft cases in the company. This can also help the company to expand to online customers.

5.2 Subsequent problem identified during the needs assessment

The needs assessment conducted revealed another problem Denaks Frozen Foods was facing. This problem is a manual cash payment. To resolve this problem, the company can use the implemented software which has a cash payment feature which accepts online payments. This will prevent the company from receiving counterfeits from customers.

5.3 Key insights from the entire project

Poor inventory management affects a company's ability to perform very well. In the company under study, poor inventory management would have prevented them from maximizing profit which would enable the company to achieve its short-term goals. Another key insight retrieved from the project was that poor inventory management affected the working style of the workers. The manual back and forth counting of products was a problem for them since they were prone to errors which will result in discrepancies of the products.

5.4 Limitations

Though the research was a successful one, there were limitations which slowed the research process. First and foremost, the busy schedules of the client were a major hindrance during the research. Due to this hindrance, there were many postponements made which could have been avoided if the researcher and the stakeholder communicated very well.

In addition, a major drawback towards the project was the transportation cost. The distance traveled to the company was very long which covered a huge cost. Thus, this made visiting the company under study a heavy task since it required careful budgeting.

5.5 Recommendations

Firstly, the software requires internet access to operate. Hence, the owner of the company should subscribe to monthly internet subscription from Mobile telecommunication network (MTN) which is the fastest network in Ghana to keep the software running. The faster the internet connection, the faster the speed of the software.

Secondly, the software requires manual input of data. Thus, there should be crosschecks of inputs to ensure there is no errors in inserting data. The administrator in charge of inserting inputs should be meticulous. This helps to avoid discrepancy.

In addition, the company should develop a good relationship with their suppliers since they form the major part of their inventory management. Strong relationship with suppliers will make them supply the products on time and in their right quantities as ordered. Contacting suppliers in times of stockouts will not be a difficult task since there is a healthy relationship between the company and its suppliers. When inventory is supplied on time, Denaks Frozen food will meet their customer demands.

Lastly, the owner of the company should train her technologically inclined workers about the software to make them familiar and acquainted with the features of the software. This will make the workers feel involved in the management of the inventory. Hence, serving as a motivation to work harder. They could also manage the software in case the owner is in a situation where she cannot use the software.

5.6 Conclusion:

By implementing OrderlyPOS as the solution, has curbed inventory management deficiency in Denaks Frozen Foods. The company now has a system that tracks their inventory and automatically updates itself to inform the company about the current stocks

available. Thus, understocking, overstocking, stockouts and back and forth counting resulting in discrepancies have been resolved by the use of OrderlyPOS. The software also provides a Point of sale service where the company can monitor their sales by generating reports from the software. Hence, Denaks Frozen Foods can forecast demand using the report generated by the sales report. This gives the company an upper hand over its competitive.

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<https://www.thebalancecareers.com/what-is-a-semi-structured-interview-2061632>

Appendix

Questionnaires

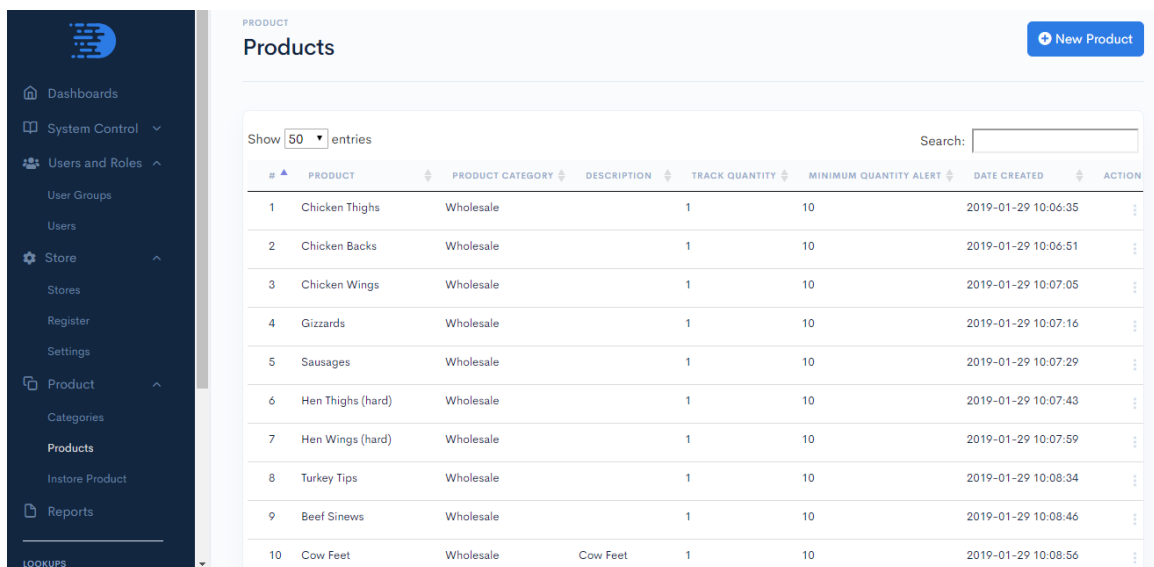
Questions for the Owner

1. What current department(s) needs further improvement?
2. What are the problems you have in these departments?
3. How does these problems affect the smooth running of the business?
4. Can you quantify the losses incurred with these problems?
5. How long have these problems persisted?
6. On the scale of 1-5, where 1 -lowest and 5 -highest, what is the most pressing problem?
7. Is there an alternative in accomplishing your company goals if this problem persists?
8. If there is an alternative, is that the best way to measure success as a company?
9. If there is no alternative approach in achieving company goals while the problem, then how do you manage the business?
10. What would you consider as the main cause(s) of the problem?
11. Is this problem related to the other problems of the company?
12. Will the other problems exist when this problem is solved?
13. Does this problem extend to other departments of the company?
14. How do your workers react to this problem?
15. Does this problem make working difficult for your workers?
16. Do they take advantage of the company resources with this problem?
17. What will your company do better when this problem is addressed?
18. What will be the best solution to address this problem?
19. If the solution requires training workers or staff, will you pay to keep your workers abreast of the skills and knowledge needed for the solution and why?
20. Should the solution be updated seasonally and why?

Questions for workers?

1. How does the problem affect your day to day activities?
2. Will you stay in the company for the next year if the problem is not addressed and why?
3. How have you handle this problem as a worker?
4. Have you taken advantage of the company while this problem persists?
5. Do you have to work more than you should with this problem in view?
6. What are the alternatives you take to complete the tasks assigned to you?
7. What will be the best solution to address this problem?
8. If the solution requires training workers or staff, will you be ready to acquire skills and knowledge needed for the solution and why?
9. Should the solution be updated seasonally and why?
10. Should your salary be increased when the solution demands a lot from you and why?


Screenshots of OrderlyPOS



PRODUCT
Products New Product

Show entries Search:

#	PRODUCT	PRODUCT CATEGORY	DESCRIPTION	TRACK QUANTITY	MINIMUM QUANTITY ALERT	DATE CREATED	ACTION
1	Chicken Thighs	Wholesale		1	10	2019-01-29 10:06:35	⋮
2	Chicken Backs	Wholesale		1	10	2019-01-29 10:06:51	⋮
3	Chicken Wings	Wholesale		1	10	2019-01-29 10:07:05	⋮
4	Gizzards	Wholesale		1	10	2019-01-29 10:07:16	⋮
5	Sausages	Wholesale		1	10	2019-01-29 10:07:29	⋮
6	Hen Thighs (hard)	Wholesale		1	10	2019-01-29 10:07:43	⋮
7	Hen Wings (hard)	Wholesale		1	10	2019-01-29 10:07:59	⋮
8	Turkey Tips	Wholesale		1	10	2019-01-29 10:08:34	⋮
9	Beef Sinews	Wholesale		1	10	2019-01-29 10:08:46	⋮
10	Cow Feet	Wholesale	Cow Feet	1	10	2019-01-29 10:08:56	⋮



- Dashboards
- System Control
- Users and Roles
 - User Groups
 - Users
- Store
 - Stores
 - Register
 - Settings
- Product
 - Categories
 - Products
 - Instore Product
- Reports
- LOOKUPS

Top 5 Pre-Orders Due

#	CUSTOMER	ORDER ID	COLLECTION DATE
1	jude	35	
2		291	
3		96	
4	aba	109	
5		67	January 1 1970 - 12:00:00 AM

Lowest 5 Product Quantity


#	PRODUCT	CATEGORY	CURRENT QUANTITY
1	Pig Feet	Retail	44
2	Gizzards	Wholesale	75
3	Chicken Thighs	Retail	75

Top 5 Products for Last Month

#	PRODUCT NAME	COUNT OF PRODUCTS SOLD	VALUE OF PRODUCTS SOLD
1	Sprat	41	3,500.00
2	Chicken Backs	65	2,860.00
3	Beef Sinews	16	1,905.00
4	Freezer	2	1,556.50
5	Foreign Salmon	4	1,200.00

Top 5 Upcoming Credit Payments

#	CUSTOMER	ORDER ID	PAYMENT DATE
1	owusu	74	March 15 2019 - 12:00:00 AM
2		76	March 15 2019 - 12:00:00 AM
3	Hayford	83	March 15 2019 - 12:00:00 AM



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PRODUCT


Products

[New Product](#)

Show entries

Search:

#	PRODUCT	PRODUCT CATEGORY	DESCRIPTION	TRACK QUANTITY	MINIMUM QUANTITY ALERT	DATE CREATED	ACTION
1	Chicken Thighs	Wholesale		1	10	2019-01-29 10:06:35	
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REPORTS


Dashboard

Add Query

Show 50 entries
Search:

#	NAME	ACTION
1	Total Sales Per Product (without delivery charge)	View Reports
2	Total Sales Per Type of Order	View Reports
3	Count/Value of Products Sold	View Reports
4	Revenue Per month Per Year	View Reports
5	Total Sales Per Payment Method (With Delivery Charge)	View Reports
6	Sales and Product Summary For Each day (Without Delivery Charge)	View Reports

Showing 1 to 6 of 6 entries
First Previous 1 Next Last



- Dashboards
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 - Users
- Store
 - Stores
 - Register
 - Settings
- Product
 - Categories
 - Products
 - Instore Product
- Reports

USERS AND ROLES


User Groups

New User Group

Show 50 entries
Search:

#	GROUP NAME	DESCRIPTION	DATE CREATED	ACTION
1	Super Admin	For a higher authority of the system	2018-11-13 15:26:16	Manage Permissions
2	Back Office Staff	For back office administration	2019-01-15 13:16:11	Manage Permissions
3	Store User	For store users	2019-01-10 11:58:44	Manage Permissions

Showing 1 to 3 of 3 entries
First Previous 1 Next Last



- Dashboards
- System Control
- Users and Roles
 - User Groups
 - Users
- Store
 - Stores
 - Register
 - Settings
- Product
 - Categories
 - Products
 - Instore Product
- Reports

STORE

Stores

Add Store

Show 50 entries
Search:

#	NAME	LOCATION	PHONE	EMAIL	DATE CREATED	ACTION
1	Denaks Frozen Foods	James Town	+233 27 442 0765	denaksfrozenfoods@gmail.com	2018-04-26 13:18:18	

Showing 1 to 1 of 1 entries
First Previous 1 Next Last

Dashboard Attachment:

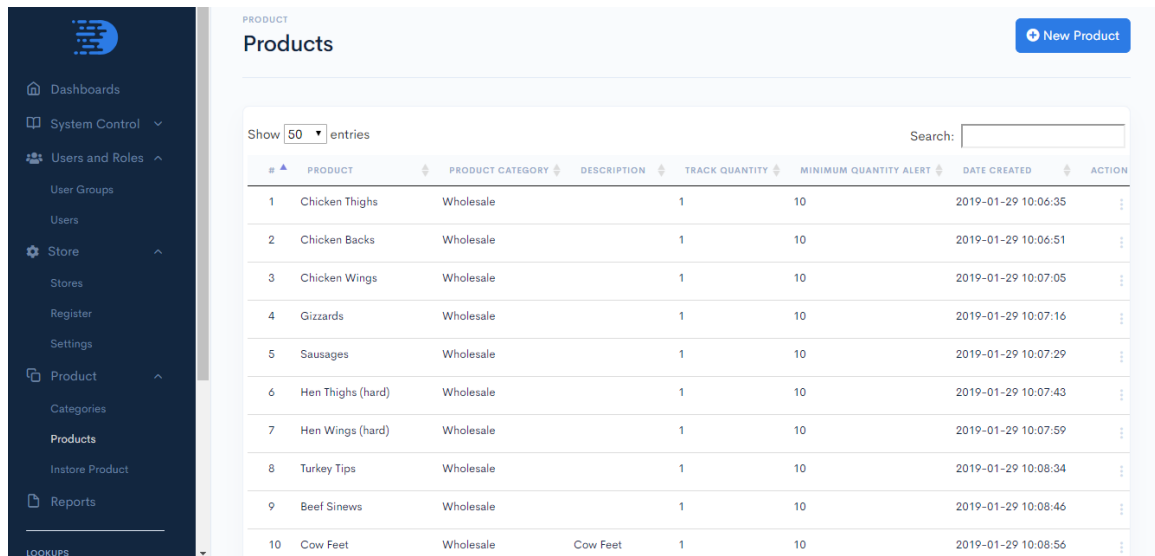
Problem identified: Poor Inventory Management system in Denaks Frozen Foods

Proposed Solution: The Solution obtained was informed by the literature review.

OrderlyPOS is the name of the software to address the poor inventory management

Denaks Frozen Foods. OrderlyPOS is a POS software which was developed to play a significant part in a company's day-to- owner day operations. It works on the principle of ABC analysis where the software displays the highly purchased products and the least purchased products at the backend of the software. This informs the to put more priority on the most purchased products and less priority on the least purchased. It has many features for inventory management which makes work easier and simple and saves more time and energy when working. It has helped to avoid overstocking, understocking, stockouts and back and forth counting of inventory.

Images of the Software implemented:



The screenshot shows the 'Products' management interface in OrderlyPOS. The sidebar on the left contains navigation links: Dashboards, System Control, Users and Roles, Store, Product, and Reports. The main area displays a table of products with the following data:

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10	Cow Feet	Wholesale	Cow Feet	1	10	2019-01-29 10:08:56	

USERS AND ROLES
New User Group

User Groups

Show 50 entries Search:

#	GROUP NAME	DESCRIPTION	DATE CREATED	ACTION
1	Super Admin	For a higher authority of the system	2018-11-13 15:26:16	<button>Manage Permissions</button>
2	Back Office Staff	For back office administration	2019-01-15 13:16:11	<button>Manage Permissions</button>
3	Store User	For store users	2019-01-10 11:58:44	<button>Manage Permissions</button>

Showing 1 to 3 of 3 entries First Previous 1 Next Last