



ASHESI UNIVERSITY

IMPROVED LOGISTIC MANAGEMENT FOR NANAPATT MATTRESSES

Undergraduate Applied Project Submitted to The Department of Business
Administration, Ashesi University College in Partial Fulfillment of the Requirement for the
Award of Bachelor of Science Degree in Business Administration

B.Sc. Business Administration

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DECLARATION

I hereby declare that this dissertation is the result of my own original 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 were supervised in accordance with the guidelines on supervision of Applied Project laid down by Ashesi University.

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EXECUTIVE SUMMARY

NANAPATT Mattresses is an enterprise that started active operations in 2018. It was founded by Mr Moses Tetteh Berimah. It has a main branch and one subsidiary branch, both located in Madina, Ghana. It deals in the sale of foreign new mattresses and aims at providing its customers with quality mattresses of different sizes.

Over the years, it was realized by the company that they were incurring high costs in their logistics management process, especially during the process of acquiring new consignments from the harbour. The hiring of different trucks to receive these consignments is costly because the prices they demand differ, and these differences are huge and keep increasing. Another issue that was noticed was that customers who made purchases faced difficulties transporting the mattresses to their various destinations.

This project aims at improving the logistic management process of NANAPATT Mattresses. Some solutions to curb such gaps in logistics include; identifying an efficient and affordable transport company that would be responsible for transporting consignments on arrival from the harbour to the shops, purchasing trucks that would be used in transporting mattresses and also helping customers with their new purchases among others. The decision to outsource a business process is primarily based on the availability of resources in the business, how critical the process is and so on.

The solution is a designed logistics framework that NANAPATT Mattresses can adopt in their transport process and inventory management. The aim is to explain the importance of taking outsourcing decisions and how they can be implemented. The solution includes decisions on multiple sourcing, the All shipments via intermediate distribution centre with storage transportation design and the Periodic inventory systems. (Chopra, 2016)

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CHAPTER 1: INDUSTRY ANALYSIS, EXTERNAL ANALYSIS, COMPANY ANALYSIS

1.1 OVERVIEW OF CHAPTER 1

This chapter would throw light on the industry NANAPATT Mattresses functions in, the external factors that affect the entire mattress industry, the PESTLE (Political, Economic, Social,

Technological and Environmental) Analysis and lastly identify the strengths, weaknesses, opportunities and threats of the business.

1.1.1 Rationale for project

NANAPATT Mattresses has been in operations since 2018 and has been growing, however, there was a realisation that a lot of costs is incurred when mattresses are transported from the harbour to the shops. It was also realised that customers find it difficult to transport their purchased mattresses to their various destinations. This becomes a problem because it creates delays when there are other customers to be attended to but do not receive immediate attention since the employees are helping other customers find a good means of transport for their purchased mattresses. This does not only cause delays but also causes customers to be dissatisfied and angry.

To avoid any form of bias in this entire project, the employees have been informed and asked to freely share any views they may have in confidence that no information given out would be used against them.

1.2 THE MATTRESS INDUSTRY ANALYSIS

The global mattress market was valued at \$31.1 billion in 2017, with a projected growth at a Compound Annual Growth Rate of 3.8% between 2018 and 2023. (MattressMarket, 2018) Research has it that 30% of a person's time is for sleep. There is a higher possibility that this may have increased especially because of the coronavirus that has caused a restriction and or reduction in the movement of people. Under the mattress industry, some sectors deal in the manufacture and sale of mattresses, others deal in the retail of already manufactured mattresses (local and or foreign). Presently, the demand for mattresses all over the world has

increased. For instance, as a result of COVID-19, Tempur Sealy, one of the biggest mattress companies, produces about 20,000 mattresses a day. (Hohnholz, 2020)

In response to the demand, the mattress industry has put measures in place to accommodate these changes. Some of these include reducing lead times, shortening supply chains and increasing safety measures. (Hohnholz, 2020)

1.2.1 PESTLE ANALYSIS

Political Factors

On the 19th of October 2020, in the Daily Graphic, the president of Ghana addressed the cut in import prices which would take place from January 1, 2021. (Ablordeppey & Adombila, 2020)

This cut in import prices would benefit the mattress industry, especially those who are into the importation and distribution of foreign mattresses, which would be an advantage for NANAPTT Mattresses.

The government has launched a GHS 2 billion guarantee scheme to support universal banks in Ghana to provide financial support to small and medium enterprises (SMEs) for them to recover from the COVID-19 shocks. (Peacefm Online, 2020) The Minister of Planning, Professor George Yaw Gyan-Baffour, on behalf of the Minister of Finance, stated that this among other things are being done to help the private sector specifically targeting specific industries within the agri-business, manufacturing, hospitality and tourism and technology sectors, among others. (Peacefm Online, 2020)

Economic Factors

Ghana has a GDP of \$67.077 billion and a GDP per capita of \$2,202. The contributions made by the industry sector from 2016 to 2019, show that it has been improving. In 2016, it contributed 28.23% to Ghana's GDP, 30.39% in 2017, 31.53% in 2018 and 31.99% in 2019. (Plecher,2020)

The distribution of employment in the industry sector has increased over the years. The employees in Ghana active in the industry sector kept increasing from 19.15% in 2016, 20.1% in 2017, 21.1% in 2018, 21.78% in 2019 and 22.19% in 2020. (Plecher,2020)

This means that many individuals working in such sectors can afford good standards of living including accommodation needs and this would include getting a mattress or bed to sleep on, which means more prospective customers for the mattress industry. (Plecher,2020)

Social factors

Social factors play a big role in the mattress industry. This is because, for instance; during this period where there are restrictions in movements and many individuals are working from home, there is an increase in the demand for mattresses as they spend more time at home and so pay more attention to the state or condition of their beds. (Hohnholz, 2020) However, in the case where these restrictions are less stringent, it may reduce the demand for mattresses which would negatively affect mattress companies.

The population size of a country, its wealth distribution, class distribution, family sizes and many others could affect the mattress industry. The wealth distribution of a country could affect a customer's willingness to pay an amount of money to make a purchase. A customer's family size,

the purpose for which the purchases are being made would also affect the mattress industry. (Murphy, 2018)

For instance, a customer with a big family would consider the size of his or her family when making purchasing decisions for his family and could end up purchasing a bigger mattress or more than one, which would mean more sales for the company. (Murphy, 2018)

Another example would be a hotel manager ordering mattresses for use in a hotel, his demand for mattresses may be more than a person buying mattresses for his nuclear family. (Murphy, 2018)

Technological Factors

Technology plays a great role in many sectors. Online websites have provided a means for businesses to showcase their products to a large customer base and also provided convenience for customers to shop from the comfort of their homes. (Murphy, 2018)

In the mattress industry, for instance, customers can make orders without having to be physically present and with the use of mobile money payment methods, they can easily make a purchase and have it delivered. Some mattress companies also ship their mattresses in a box to their customers. (Alba, 2018) This process has made the transaction easier, attracted more customers and increased sales in the mattress industry.

A published article stated that mattress companies have experienced an increase in the number of people who visit their websites and gained more followings on their social media pages since the COVID-19 began. (Hohnholz, 2020)

Legal Factors

The constitution of Ghana states the procedures and requirements to start a business. Before any business is successfully set up in Ghana, it must have adhered to the provisions made in the Companies Code, 1963(Act 179), the Partnership Act, 1962(Act 152) and the Business Name Act, 1962 (Act 151).

Aside from following all these regulations, starting a mattress company (manufacturing or retail and wholesale) for instance also requires a lot of capital to purchase resources needed to run it. (Tony Martins, 2021)

Environmental Factors

How mattress companies operate have either positive or negative effects on the environment they are in. Given this, mattress manufacturers are extra cautious about the materials used in the manufacturing process. In the manufacture of mattresses, both synthetic and natural materials used, however, they encourage the use of more natural resources to reduce pollution. Wool is now preferred in manufacturing mattresses as it can prevent the spread of moisture. (Hohnholz, 2020)

Wholesale and retail mattress companies make the effort of purchasing mattresses from manufacturing companies that adhere to eco-friendly practices. (Hohnholz, 2020)

1.3 INTERNAL ORGANISATIONAL CONTENT

1.3.1 Company Profile

NANAPATT Mattresses was established by Mr Moses Tetteh Berimah to provide quality mattresses to its customers. It deals in the sale of new mattresses of sizes ranging

from king-sized, queen-sized, double-sized and single mattresses. It currently has four employees and two shops located in Madina.

Employees are hardworking and well-versed in providing customers with information on the mattresses that are for sale.

1.3.2 Goals

NANAPATT's short-term goal is to expand outside Accra and provide customers with maximum satisfaction.

Its long-term goal is to become a supplier of foreign mattresses in addition to expanding into other regions.

1.3.3 Mission

Its mission is to provide customers with quality mattresses. They aim to help customers make informed choices as to the type of mattress they decide to purchase, its features and the differences as compared to other mattresses.

1.3.4 Vision

Its vision is to, first of all, become an importer of mattresses for both wholesale and retail purposes in Ghana.

It aims at expanding into other regions in Ghana.

1.4 MARKET ANALYSIS

With the use of Porter's Five Forces, the market analysis would provide a more detailed analysis of the market environment NANAPATT Mattresses operates in and help in strategic planning toward becoming more profitable.

PORTER'S FIVE FORCES

Threat of New Entrants

First of all, a lot is required to start a business in Ghana. These procedures coupled with the high capital requirements reduce the number of new businesses entering the mattress industry thereby leading to low threats of entry. (Murphy, 2018)

Bargaining Power of Suppliers

Suppliers of NANAPATT Mattresses are companies and individuals that deal in the importation of mattresses to Ghana. These suppliers tend to raise prices during periods when the mattresses are scarce. For instance, when the COVID-19 began, restrictions were made on imports, and this gave suppliers of these mattresses power to charge exorbitant prices. However, during times where these imported mattresses are readily available, they do not have the power to do so since there are more suppliers with mattresses.

NANAPATT Mattresses works with different suppliers and so can do away with suppliers who inflate their prices leading to low supplier power, meaning that suppliers do not have the power to increase prices to the detriment of the buyers during the periods where the mattresses are available or not scarce.

NANAPATT Mattresses faces little or no switching costs when working with suppliers. They do not lose much when they work with other suppliers, leaving suppliers who decide to charge inflated prices to lose especially when the mattresses available in the market are more.

However, one limitation to the mattress companies is that these suppliers may decide to go into the retail of the mattresses. (Murphy, 2018)

Lastly, the profits earned by suppliers are closely linked to that of their customers and so with that, they provide mattresses at reasonable prices and this weakens their power. (Murphy, 2018)

The power of buyers

Generally, in the mattress industry in Ghana, the relationship between buyers and sellers is such that they can bargain and agree on a price they are willing to buy and willing to sell respectively. In the past, most Ghanaians patronised foreign goods over local goods, and this negatively affected local producers, including those in the mattress industry. There were also views that local mattresses cause back pains, and this negatively affects customers response to the prices of local mattresses. Local mattress companies, therefore, face higher buyer power as compared to mattress companies that deal in the sale of foreign mattresses. (Murphy, 2018)

Rivalry among existing competitors

There are many mattress companies in Ghana. Companies compete based on quality and affordability. Companies that deal in the manufacturing and sale of mattresses mostly price their mattresses higher because of the manufacturing costs incurred. In this case, companies that deal in the sale of foreign mattresses turn to benefit more because their prices are lower. (Murphy, 2018) Its competitors include the manufacturers of Latex Foam, Ashfoam

Threat of substitutes

Some substitutes of mattresses include hammocks, standard futon, mats, sleeping bags and many others. These substitutes may serve the same purposes as mattresses but most of the time, these substitutes are used for specific purposes.

For instance, a hammock is a sling made from fabric, rope, and is suspended between two or more points and can be used for swinging, sleeping, or resting. It is used for short periods.

According to research, it is advised that anyone who wants to use the hammock nightly, would have to contact a health personnel for health purposes. (Nunez, 2020)

In this case, the threat of substitutes is low based on the time frame or duration of usage of these substitutes.

1.5 SWOT ANALYSIS

Strengths

NANAPATT Mattresses is a company known for its provision of good quality mattresses of different sizes. It is known for the durability and comfortability of the mattresses they sell. The mattress sizes include; King-sized mattresses, queen-sized mattresses, Double-sized mattresses and one and half-sized mattresses, also known as single mattresses.

Its hardworking and knowledgeable employees ensure that customers are satisfied and provide them with any information they may need on the types of mattresses available. One thing these employees do to make customers happy is that, for some customers, after they have been told the different mattress sizes, they also want to measure them and because of that, the employees keep a measuring tape close by for such instances.

Weaknesses

Its weaknesses include the high costs incurred when transporting mattresses from the harbour to its shops and the delays that arise when helping a customer who has made a purchase find a means of transport.

Opportunities

The opportunity available to them is a potential expansion of the business to other locations in Accra and other regions in Ghana.

Threats

One threat would be a decrease in the demand for mattresses which would affect sales.

Another threat could be that there could be an increase in shipment fees which would affect pricing and sales, especially if demand falls.

In summary, this chapter emphasizes NANAPATT Mattresses, a company in the mattress industry that deals in the sale of new foreign mattresses. It analyses the internal and external factors within the company and the industry respectively such as the capital requirements to start such a business, the responsiveness of suppliers and buyers and how it deals with competition. It also spells out their strengths, weaknesses, opportunities and threats.

CHAPTER 2: NEED ASSESSMENT

2.1 Chapter 2 Overview

A need assessment identifies a need or gap in a business or organization. This chapter aims at giving an overview of the process that was followed to identify and confirm gaps and problems within NANAPATT Mattresses and the causes associated with them.

This need assessment:

- i. Identified through observations, the operations and activities that take place within NANAPATT Mattresses.
- ii. Studied customer behaviour and engaged them in interviews to identify any difficulties they face when shopping.
- iii. Engaged employees in interviews to identify gaps during operations and activities in NANAPATT Mattresses.

- iv. Included research into logistic management frameworks to help analyze the data that would be collected.

2.2 PROBLEM STATEMENT

Over the years, the management of NANAPATT Mattresses identified that they incurred huge costs whenever there are new arrivals of mattresses at the harbour to be transported to the shops.

In addition to this, it was realized that some customers face difficulties with getting a good means of transport for their purchased mattresses. Even though employees assist customers with their transport needs, it results in delays especially when the employees have to attend to other customers. These delays put a lot of pressure on the employees because they become torn between customers to assist. This also leads to two types of dissatisfied customers, those waiting to be attended to and those trying to find a means of transport after shopping. This, if not attended to, would, in the long run, cause loss of customers, which would affect sales, especially as the business grows and the number of customers they attend to per day increases.

These problems stem from gaps in the logistic management process and affect the business's operations.

2.3 METHODOLOGY

Information was gathered using a qualitative research method. The method of data collection was by observation and semi-structured interviews.

Observations provided a self-analysis of the activities in NANAPATT Mattresses while getting the views of participants (the employer, employees and customers) of the study through the semi-structured interviews.

The research objectives were:

- i. to understand the factors that influence NANAPATT Mattresses customer satisfaction*
- ii. to identify measures to reduce logistic costs*
- iii. to design a logistic management strategy for NANAPATT Mattresses*

The research questions were:

- i. How can the logistic management process in NANAPATT Mattresses be improved?*
- ii. How can customers be satisfied?*

2.3.1 Observation

Through observations, different types of customers were identified at NANAPATT Mattresses. Customers who have no information about the different types of mattresses but intend on buying a mattress; these types of customers just have the intention of buying a mattress and so come around to make further enquiries but are not ready to make a purchase. Another group of customers have the intention of making a purchase and do so after they have made enquiries and are decided on what they want to buy. Some customers also make enquiries earlier and return when they are ready to buy and lastly existing customers, those who have made purchases before and are there again to make more purchases or introduce others who become customers.

At NANAPATT Mattresses, it takes about five to ten minutes for a customer to purchase if he or she is ready. The times may however differ based on the needs of the customer. After the purchase, for customers who do not bring cars to transport the mattresses, it takes about a minute to seven minutes to get a car to take them to their destination. However, there are delays when taxis are uncooperative and charge exorbitant prices. One realization made was that, even though customers were frustrated and had to wait to get a good means of transport, they did not blame the employees. This is because the employees tried their best to assist them and did not leave them unattended.

Another observation made was that during the evenings, sales were more. Employees found a way to manage the situation of assisting a customer who had just purchased a mattress and a customer who just arrived at the same time. NANAPATT Mattresses currently has two shops and, in each shop, there are two employees so what they do is that, for the first customer that comes, both employees assist the customer but on the arrival of another customer, one employee leaves to assist that person. What this meant was that by the time the first customer is ready to leave, he or she would have been given ample attention and so everything goes on smoothly. However, the problem occurs where the first customer has more enquiries to make and so the transaction process is a bit longer. When this happens and a third customer arrives, he or she has to wait before being attended to. In addition to this, what the employees encourage the waiting customer to do is to look around to see the mattresses available and this to an extent reduces the pressure on them.

2.3.2 Semi-Structured Interviews

Semi-structured interviews are such that the interviewer goes out with a set of questions with anticipated responses but could include other responses given by the interviewees for later analysis. This type of interview was for three categories of people: the customers, the owner and the employees. The interviews were between 30 minutes to an hour.

The interview questions for the customers were:

- i. *How often do you shop at NANAPATT Mattresses?*
- ii. *What was your shopping experience?*
- iii. *Did you face any challenges?*
- iv. *If yes, what challenge(s) did you face?*
- v. *What suggestions do you think can be put in place to improve your shopping experience?*

Customers who had shopped with NANAPATT Mattresses before mentioned that they would like it if they were given discounts for their next purchases. For the challenges they faced, they mentioned the difficulty in getting a vehicle quickly to transport their mattresses to their various locations. They stressed the point of how they tend to spend so much on transport. This is because the taxi drivers charge exorbitant prices and most of the time since they are in a hurry to get somewhere, they have no option but to pay.

The interview questions for the employees were:

- i. What do customers complain about?*
- ii. What problems do you encounter at work?*
- iii. What is the major complaint received from customers?*
- iv. What suggestions do you think can be put in place to improve the customer shopping experience?*

The response given for the question about what customers complain about was that they complain about the dust on the mattress covers, the unavailability of delivery services and the heat in the shop in the afternoons. At the end of the interviews with the employees, the problem that ran through their responses was the problem of delivery. An example given was that one time, a customer had to pay GHS 50 for a taxi driver to deliver the purchased mattress to East Legon when the shop is at Madina, North Legon, which covers a distance about 9 kilometres.

The next question was about the problems the employees face at work and the responses were that some customers are difficult to handle and some taxi drivers are harsh. For the issue of dust, they mentioned that the mattresses have been packaged but the dust causes the packages to look dirty which they have to keep cleaning. After these questions were answered, the most prevailing

customer complaints were identified and analyzed. The most prevailing customer complaints were high prices, harsh taxi drivers, the issue about delivery services.

The interview questions for the owner were:

- i. What problems do you face? What challenges have you noticed?*
- ii. Do customers come to you with complaints?*
- iii. What is the major complaint you receive from customers?*
- iv. Do employees come to you with complaints?*
- v. What is the major complaint you receive from customers?*
- vi. What is the major complaint you receive from employees?*
- vii. Do you face problems with your suppliers?*
- viii. If yes, what problems do you face?*
- ix. What suggestions do you think can be put in place to improve the customer shopping experience?*

In the interview with the owner, he mentioned that he works with different suppliers of foreign mattresses and on some days, they charged high prices while other days had prices that were a little relaxed or less expensive. He spoke about the delivery problem. He mentioned that customers kept asking whether there were delivery services to the extent that he had to start accepting to deliver to them personally whenever he had a little free period to satisfy them. He also mentioned that he works with different suppliers and so has to place a call to find out whether mattresses have arrived at the harbour.

2.4 ANALYZING DATA

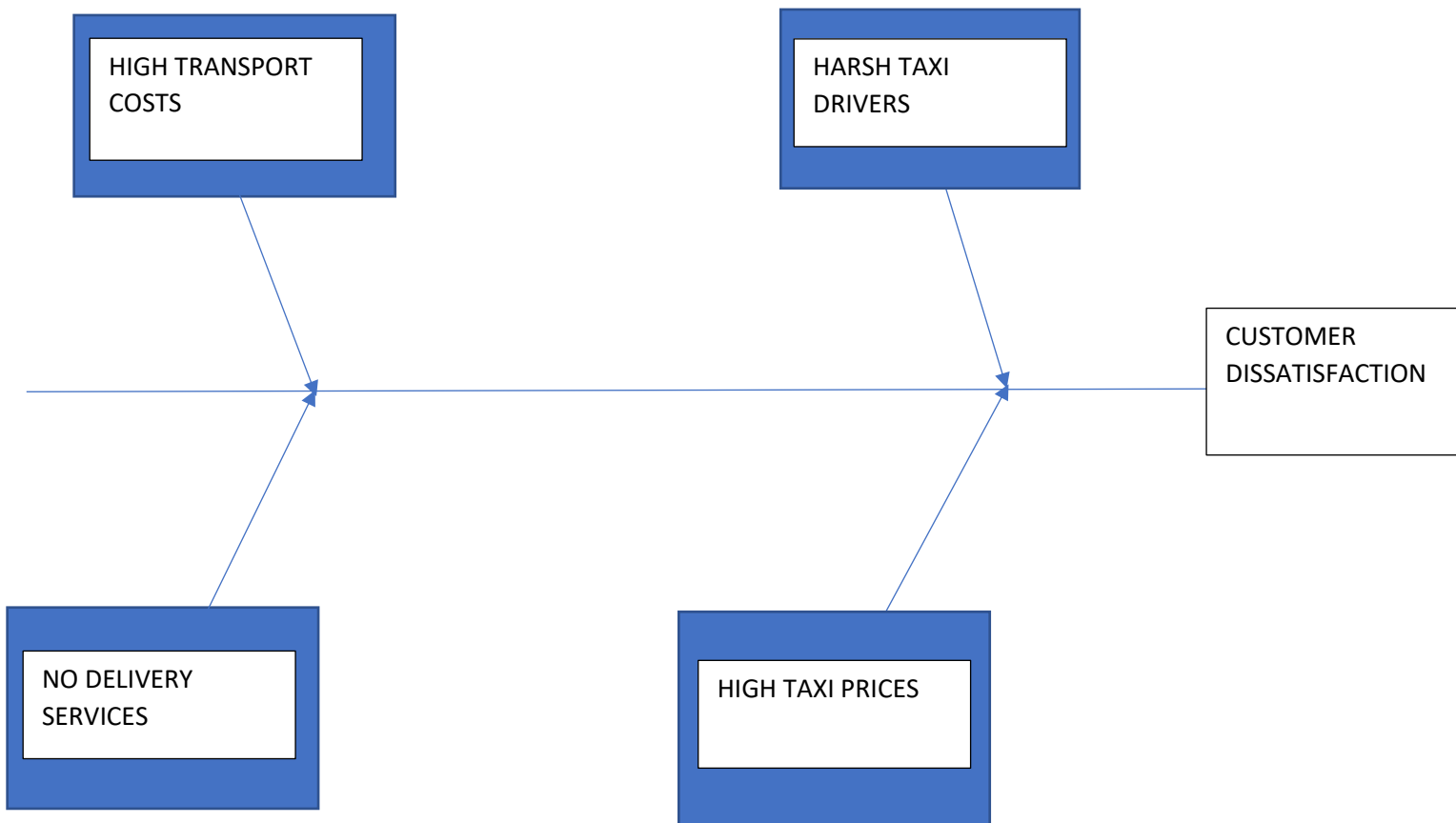
The data was analyzed using the fishbone diagram also known as the Ishikawa diagram.

THE FISHBONE DIAGRAM

The fishbone diagram helped to identify the main causes of the logistic management problems which resulted in delays and increased costs at NANAPATT Mattresses.

With the fishbone diagram, the main problems of NANAPATT Mattresses were identified and that helped to identify what the central effect of these problems was.

Fishbone diagram



The absence of a well-planned delivery system led to NANAPATT Mattresses incurring huge transport costs when getting their inventory to the shops. Also, the unavailability of delivery

services for their customers leads to customers spending a lot to get their mattresses delivered to them which results in them being dissatisfied.

2.6 JUSTIFICATION OF PROJECT

From the research, I realized the company did not have a planned-out method or procedure in getting and delivering their inventory. They stocked the shops as and when they deemed fit and the availability of the mattresses from suppliers. This is however not a good method, because, for instance, during the observation period, there were times customers came in requesting particular types of mattresses but were not able to get them because they were out of stock in the shops.

This proves why this project is very necessary for NANAPATT Mattresses because, with a well-designed logistics management process, they would be able to make decisions that would ensure that the shops are always stocked and the entire process of receiving and distributing their products are well mapped out at a reduced cost. This would also increase customer satisfaction because the customer would not have to think about how he or she would find a suitable mode of transport as the company would have made provisions for that.

It would also reduce the cost incurred by NANAPATT because they take stock of their products and so would have an idea of the cost they spend on getting new inventory instead of deciding on when to get new stocks as and when they think it is needed. Mattresses are non-perishable goods and so based on their customers' preferences or demand, they can have particular restock times which would increase sales.

CHAPTER 3: MASTERY OF SUBJECT MATTER

3.1 Chapter Overview

This chapter would state and analyze logistic frameworks under supply chain management that would help design a detailed flow of inventory in the logistics process of NANAPATT Mattresses. To identify a detailed and efficient flow of products, logistics management frameworks and articles on the logistics management processes would be looked at. To start with, supply chain management and logistics management would be explained. After, the role of logistics in the mattress industry would be identified before proceeding into a literature review of frameworks and articles in the logistics process.

3.2 Supply Chain Management

Supply chain management is a chain of all activities, individuals, facilities involved in transferring goods; raw materials, semi-finished or finished goods to a consumer. The individuals involved in this process include; suppliers, retailers, transporters, warehouses, consumers and so on. The objective of supply chain management is to either reduce cost while maintaining quality or to be responsive while maintaining quality.

The costs involved are what would be incurred in the process of getting goods to the consumer. Deciding to go with the objective of low costs would mean the opportunity cost of being responsive, meaning the company might not be able to respond to customers on time. It is the same for deciding to be responsive. A responsive company focuses on being able to provide what the customer needs promptly and so might end up incurring high costs. New companies or companies offering new products are often more responsive because they want to attract and retain customers. (Chopra, 2016)

There are two main drivers under the supply-chain decision-making framework which are logistics drivers and functional drivers. The logistics driver is made up of facilities, transportation

and inventory decisions while the functional driver is made up of information, sourcing and pricing decisions. (Chopra, 2016)

3.3 Logistics Industry

Logistics management falls under supply chain management. It entails planning, implementing, and controlling the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of production till consumption to meet customers' requirements (Chopra & Vir Kalra, 2016). Firms can decide to make their logistics process an in-house activity or outsource it. The two most repeated reasons for outsourcing logistics activities are; cost reduction and service improvement prospects (Boyson et al. 1999; Lieb and Bentz 2005; Maitz 1994; Maitz and Ellram 1997; Rao and Young 1994; Sink and Langley 1997). Reasons given for firms that decide to make logistics processes in-house include maintaining cordial relationships with customers, preserving jobs, filling idle workspace with equipment and because it shows more authority (Venkatesan, 1992).

Logistics management techniques include reverse and forward logistics, outsourcing logistics and in-house logistics. The decisions under the logistics process boil down to whether a firm wants to be responsive or efficient. For instance, decisions concerning the facilities, that is, the locations of production, assembly, storage and so on must have one main aim whether to be able to reduce costs or to respond promptly to customer orders. Decisions regarding the role, location, capacity, and flexibility of facilities have a significant impact on the supply chain's performance. (Chopra & Vir Kalra, 2016)

The next decision under the logistics process is the inventory, which is deciding on all raw materials, work in process, and finished goods within a supply chain. The type of industry a firm operates in and the type of inventory they work with can determine whether they would be

responsive or efficient. Under Transportation, decisions involving moving inventory (raw materials, work-in-process or finished goods) from one point to another in the supply chain, the modes and routes to take, and so on would also be based on the firm wanting to be responsive and efficient. (Chopra, 2016)

3.4 Problems Identified and relevance of the Project

From the interviews and observations made, it was confirmed that the major problem at NANAPATT Mattresses is the problem of poor logistics management. The dissatisfaction identified with customers was a result of the logistics issue so once that is solved, customer satisfaction would be improved.

The major focus would be on the transportation decision under logistics; however, the other decisions would also be included because they come together to give an overall effective logistics management process. (Chopra, 2016)

The solution would involve designing a transportation process starting from how the products would be received from suppliers, where they would be kept till the final distribution stage where the customer receives the product. It would also include recommendations as to how to work with suppliers and a truck driver to reduce their overall logistics costs. (Chopra, 2016)

This project is important to help boost NANAPATT Mattresses' image, attract more customers and retain existing ones while reducing costs.

3.5 Factors that Influence Customer Satisfaction in Mattress Companies

Customer satisfaction measures how products and services of an organization meet or surpass customer expectation. Organizations must make it a point to satisfy customer needs because by doing this they are more likely to retain loyal customers leading to profitability in the long run. (Lin, 2018)

The two broad categories that impact customers include supplier behaviour, and supplier's product and service performance. Factors influencing customer satisfaction include customer-friendly features, quality, technology, easy operations and so on. A customer's overall satisfaction is interrelated with the level of service he or she experiences. (Satyendra, 2020)

Companies must make it a point to include customers or make them feel and know that their needs are the ultimate focus. An example used by Casper, a mattress company, to include customers in product development is by engaging them in their events and allowing them to test their prototypes. This way they make the customers feel involved in the process and know that their needs are being factored in. It also helps the business improve its processes. (Lin, 2018)

3.6 Measures Companies Take to Reduce Logistic Costs

Logistics costs include fuel costs, delayed arrivals at ports which lead to higher transportation fees, complex regulations governing international trade such as document processing and compliance checks), subsequent delivery delays and increased warehousing expenses. (Li et al., 2006)

Some measures taken to reduce these logistics costs include outsourcing and product phasing. They are also known as demand management tools. More than two-thirds of businesses decide to outsource a portion of their supply chain operations, mostly, their transportation and storage. This is done to reduce costs, increase efficiency. When this is done, the third party and the client must agree on terms such as the packaging, product handling, control requirements to avoid any misunderstandings. (Chopra, 2016)

According to Chopra & Vir Kalra (2016), when deciding whether to make or buy (in-source or outsource), these questions are critical in making an informed decision.

- i) Is product/service technology critical to the firm's success?
- ii) Is product/service a core competency?
- iii) Is it something your company must do to survive?

Another method is known as product phasing. Here, companies decide to divide work to be done into tasks.

Companies also focus on making informed decisions. Informed decisions help reduce logistics costs. When there are records on the activities that take place, the company can identify the activities that are causing the excess costs. (Lin, 2018)

A warehouse management system or transportation management system can provide data needed to identify inefficiencies, reduce excess expenditure and improve the operational effectiveness of a supply chain process. (Lin, 2018)

3.7 Logistic Management Strategies for Mattress Companies

Logistics management strategies are the strategies businesses take to reduce costs and improve operations.

The Periodic Inventory System is a system where inventory orders are placed at fixed intervals, either monthly, weekly, quarterly and so on to save time and reduce shipping costs. (Chopra, 2016)

Mattress retail and warehouse companies mostly use this system because of the nature of their inventory. Mattresses are non-perishable goods and so are mostly ordered in bulk using this method. (Lin, 2018)

Another strategy used to make forecast decisions concerning inventory management is known as Grassroots Forecasting. This involves getting information about inventory from as close to the market as possible. (Li et al., 2006)

3.8 Logistics management and Efficiency

The decision as to which mode of transport to use, where and how to get the inventory and also the location of facilities and all the decisions concerning meeting customer needs would be towards achieving low costs or being responsive. A firm that decides to be efficient would somewhat be unresponsive because they want to reduce costs. In this case, however, it is most important to inform the customer that based on, for instance, the delivery option he or she is willing to pay for, the goods might arrive within a later period. (Chopra, 2016)

3.9 Logistics management and delivery

Taking decisions concerning how a firm's mode of delivery would be would also revolve around the firm's decision to either be efficient (lower costs) or be responsive to its customers. A firm may decide to invest in a van to meet their customer needs and be responsive at every stage. For a firm to decide to purchase a van, they must be financially capable such that the cost of the van would not be more than what they earn. Other firms could decide to outsource their transport services to third parties. All these decisions must be made based on the firm's capabilities and resources. (Chopra, 2016) Tempur Sealy, a mattress company offers delivery services to make deliveries and pickups on time. (Salary.com)

3.1.1 Logistics management and customer satisfaction

Customer satisfaction would mean more sales and a high likelihood of recommendations. In the decision to be responsive to customers, firms may have to incur some costs. For instance, choosing a faster mode of delivering goods to customers may demand more as compared to slow

delivery modes. It is therefore left to the company to decide what their primary aim is. (Bowersox et al., 2002)

CHAPTER 4: SOLUTION AND IMPLEMENTATION PLAN

4.1 The Solution

The solution for NANAPATT Mattresses would be a logistics framework that they can adapt when making decisions concerning the transportation, inventory and facility drivers under logistics. The components that would be used to explain this logistics framework would be transportation, outsourcing, logistic systems, competitors, information and strategy review. The transportation point would throw light on the current transportation position and strategies NANAPATT works with and what they have been able to achieve as a result of this strategy. It would help identify if that strategy is effective or improving operations in the business. The next point would be outsourcing. Here, more information would be given as to whether outsourcing, that is, including the service of third parties, would be required to improve business operations. Under logistics systems, the business would weigh whether their current flow of inventory is effective enough or whether a new method is needed for smooth operations. The next point would be about competition. Knowing about the competitors of one's business is very essential and with that, the company would identify gaps and ways to improve customer satisfaction. The information that drives a firm's operations also plays a huge role. In some cases, businesses are not progressing because the information they have about their operations is inaccurate or are improperly kept. The last step is to suggest frameworks that can be adopted to correct any mistakes or discrepancies in the operational process. It would involve making sure the logistics strategy is aligned with the business's overall objectives.

4.1.1 Objectives of the solution

- i. Reduce shortage of mattresses in the shop.
- ii. Reduce costs of transportation.
- iii. Enhance customer satisfaction.

- iv. Improve the logistics management process by having a framework by which logistics are managed.

4.2 Transportation

The current transportation strategy for NANAPATT Mattresses is to hire trucks when they need to transport mattresses to their warehouse and shop. In addition to this, they do not have a delivery system but to satisfy customers who insist on their mattresses being delivered, the owner makes it a point to deliver. The hiring of different trucks come with different charges which results in varying and huge costs. In a month, for instance, they restock the shops as and when needed and with a transport cost of about GHS 600 to GHS 800, they would not have an estimated amount they spend on transport in a month. (Chopra, 2016)

Another issue is that customers have to wait after purchasing to get a good means to transport their mattresses. After spending a lot of time waiting for a taxi to arrive, they also have to pay the high prices taxi drivers charge. It takes an average of seven minutes for a customer to get a taxi driver who would be willing to deliver the mattress, however, this willing driver could charge as high as GHS 50.00 for a 9 kilometre distance from the shop. If this continues, the firm would be unable to achieve its aim of ensuring maximum customer satisfaction and may lose its customers. (Chopra, 2016)

4.3 Outsourcing

Here, NANAPTT would have to consider whether partnering with a third-party logistics company will be the best solution to improve their operations. For instance; would partnering with a transport company be more cost-effective compared to getting trucks to work with them as and when the need arises? Another instance to consider would be whether to hire one particular truck to work with or work with different trucks as and when the need arises. The

costs, availability of company resources and level of responsiveness must be factored in.

(Chopra, 2016)

NANAPATT Mattresses current strategy is that they hire a truck when they receive information on the arrival of the mattresses. With a charge of between GHS 600 and GHS 800 the truck drivers charge, they do not have an inventory order strategy to make sure costs are reduced. As of now, they do not have an inventory order system and so in a month, they could hire trucks twice, three times and so on. The negative aspect of this is that, with this method, irrespective of the number of mattresses in the truck, they would still have to pay the same transportation fare. (Chopra, 2016)

4.4 Logistics Systems

The current logistics of NANAPATT Mattresses is such that they do not have the facilities to implement the logistics they require. They have a warehouse to keep their mattresses, however, do not have a truck or van to cater for delivery services. They also work with different suppliers.

4.5 Competitors

With the competitors of NANAPATT Mattresses, they have competitors such as other companies selling imported mattresses and the local manufacturers of mattresses. For instance, a double-sized mattress at NANAPATT Mattresses costs between GHS 1,200 to GHS 1,500 based on its thickness. However, a double-sized mattress that is locally manufactured costs between GHS 2,500 to GHS 3,000, meaning that they have an advantage when it comes to pricing of which their customers testify of including the quality of the mattresses. The only problem here was the high fares customers without cars have to pay taxi drivers and if this continues, customers may decide to patronize other mattress companies. (PGadmin, 2021)

4.6 Information

NANAPATT Mattresses knows that certain logistics deficiencies do not allow them to achieve the maximum output they want. During the interviews and observation that were conducted during the needs assessment, information regarding improving on the logistics was properly tracked from the employer, the employees and the customers to identify how these deficiencies can be addressed. It was also noticed that proper records were not taken concerning the movements of inventory.

4.7 Strategy Review

4.7.1 NANAPATT RESOURCES

NANAPATT Mattresses is a mattress business that has a warehouse and an additional shop. From an interview with the owner, he stated that NANAPATT Mattresses made GHS 6,000.00 profit which they were ready to use to improve on their business processes.

4.7.2 FACTORS THAT INFLUENCE CUSTOMER SATISFACTION AT NANAPATT MATTRESSES

A customer feels a form of satisfaction when his or her needs raised are addressed. With the most prevalent problem customers face being transportation, NANAPATT Mattresses could decide to find a solution to this problem. They could focus on being customer-obsessed. Customer obsession focuses on enhancing the customer experience based on what they want and how they perceive satisfaction. Customers would feel involved if their concerns are addressed. An example of this can be seen in a mattress company known as Casper that focuses on being customer-obsessed and they do this by inviting customers to their events and engaging them in prototype tests among other activities. (Lin,2018)

At NANAPATT Mattresses, one way customers would feel appreciated is if their delivery concerns are addressed. This could make customers loyal which would lead to more profitability.

4.7.3 LOGISTIC MANAGEMENT STRATEGIES OF NANAPATT MATTRESS

To mitigate the transportation problem, NANAPATT Mattresses could outsource this service using the All Shipments via intermediate distribution Center with Storage Transportation Design. This design is where the products are shipped from suppliers to a central distribution centre and stored there until needed by buyers and transported to them. (Chopra, 2016)

To identify if this transport decision would be helpful for NANAPATT Mattresses, the four key things considered to identify the importance of including a transport system in a business were elaborated. The first point is to identify if the transportation strategy aligns with the competitive strategy of the firm. Competitive strategy is the long-term action plan of a company that is directed to gain a competitive advantage over its competitors after evaluating their strengths, weaknesses, opportunities and threats in the industry and comparing them with theirs. (Farooq, 2020) The competitive strategy of NANAPATT Mattresses is to be available to their customers and provide them with quality mattresses at lowered prices. With a transport system that includes getting the mattresses to customers at their desired location, a major need of the customers, this would be a huge step towards achieving their goal. (Chopra, 2016)

The next point is to consider both in-house and outsourced transportation. This entails knowing whether this transport system would be effective if the company handles it themselves or they decide to outsource it to a third party to reduce cost. For NANAPATT Mattresses, outsourcing their transport system would help in the growth of the business. This would help avoid costs that may come with the maintenance of the trucks and other associated costs.

Also, the transportation system should be able to adopt the use of technology to improve its performance. (Chopra, 2016) This means that the transport system should be able to adopt technological advancements to improve business operations.

Lastly, the transportation network should be flexible. This means it should be such that it can cater for unforeseen circumstances. For NANAPATT Mattresses, All shipments via intermediate distribution centre with storage transportation design would be suitable such that if there is a particular route being used that causes deliveries to delay, it can be easily adjusted without leading to more costs. (Chopra, 2016)

To minimize costs, instead of working with different trucks, NANAPATT Mattresses could work with one truck driver and agree on a charge to avoid any inconsistencies and also help them in planning. This truck driver would be responsible for making deliveries for them on working days. From an interview with truck drivers on whether they would be willing to offer delivery services for a company, the remuneration they agreed on was between GHS 100 and GHS 200 a day. The truck driver could be paid GHS 100 if they receive one to five delivery orders and on days they delivered more, they could be paid GHS 150.

When taking outsourcing decisions, there are key questions that need to be addressed. These questions would be used to assess whether or not outsourcing their delivery process would be most efficient. (Chopra, 2016)

The first question is whether the service is critical to the firm's success. From interviews with the employer, the employees and customers, it was realized that delivery services are critical to the firm's success. This is because the process of customers receiving their mattresses forms a major part in completing the firm's logistics process. In addition to this, this service is very critical because it could affect the willingness of customers to purchase from the business. If they face difficulties in finding affordable delivery services, they could turn to other mattress companies that have affordable and convenient delivery services. This would lead to loss of customers and sales.

(Chopra, 2016) According to a study conducted by the National Retail Foundation, 90% of consumers say convenience plays a major role in their retail selection decisions, and 97% of consumers mentioned that they stopped a purchase because of its inconvenience. (Lin, 2018)

The next question addresses whether the service is a core competency. Delivery services are a core and major competency in any retail business. Currently, NANAPATT Mattresses does not have the required resources to purchase and maintain a delivery truck. As a result, outsourcing the service would be the best way to address the problem. (Chopra, 2016)

The last question talks about whether rendering the delivery services is something that the business must do to survive. NANAPATT Mattresses can do without a delivery service if customers have the means to transport their purchased mattresses. However, it is important to have delivery services to cater for other consumers who may need them. (Chopra, 2016)

Building relationships with about three suppliers instead of working with all suppliers or any supplier as stated by the owner would be a good strategy for NANAPATT Mattresses. This method is known as Multiple sourcing. (Chopra, 2016) With multiple sourcing, they would be able to have alternatives to work with where the need arises. This would also reduce the likelihood of them facing a shortage because they have a relationship with the suppliers and so would be informed once the mattresses arrive. It would also reduce costs and make communication easy and fast. (Bowersox et al., 2002)

To avoid any misunderstandings and to make the process legally binding, there should be a written contract. This contract should have terms to protect the parties involved. NANAPATT Mattresses must make sure items such as the name and addresses of parties, timeframes, responsibilities of parties, pricing and payment details, including schedule and invoicing process,

performance criteria and review process, confidentiality clauses, refunds and compensation terms, level of after-sales service required, contractual terms and conditions and so on are provided.

In addition to this, they can decide that instead of ordering mattresses as and when needed, they can have a set number of times they restock their shops in a month, say, twice and with this, they would be able to estimate how much they would spend on transport in a month. This method is known as the Periodic Inventory System. It saves time as well as reduces transport costs. (Li et al, 2006)

With the plan to stock the shops twice a month, instead of working with different truck drivers to transport the mattresses from the suppliers at the harbour, they could include in the contract with the suppliers for them to deliver the mattresses to the warehouse and shop such that the agreed-upon amount of the delivery costs would be shared equally. This strategy was considered after interviewing some mattress suppliers on how they transact business with mattress companies. They explained that aside from the mattresses which the buyer (mattress company) has to pay for, they as suppliers also bear a percentage of the transport cost. They usually split the transport cost equally so that each of them bears 50% of the cost.

Another question asked was how much would be charged to the location of NANAPATT Mattresses and they mentioned between GHS 500 and GHS 600. This means that if NANAPATT Mattresses is to work with a supplier, they would be estimating about GHS 250 to GHS 300 to be spent on transport cost when receiving new mattresses.

In addition to this, NANAPATT Mattresses could focus on Informed Decision Making. More effort must be put in taking records and to ensure that this is very effective, they could include using inventory tracking software. They could also make it a point to record daily sales,

the movement of inventory and ensure that it is done consistently. Another way could be employing a computer literate who would be responsible for recording the inventory in the warehouse, the various costs agreements between the suppliers, the deliveries made in a day and so on. They can also invest in a computer so that the hired person would be able to work with it. (Bowersox et al, 2002)

This would ensure that they have an idea of all that is going on in the business and know when to restock the shops and when there are deliveries to be made.

The overall aim of this solution is to reduce the shortage of mattresses in the shops, reduce costs of transportation, enhance customer satisfaction and improve the logistics management process by having a framework by which logistics are managed. (Chopra, 2016)

4.7.4 LOGISTICS FRAMEWORK

This framework would show the flow of information between NANAPATT Mattresses and its suppliers, the truck driver they decide to work with and their record-keeping strategy.

When communicating with suppliers, NANAPATT Mattresses would receive information from them on the arrival of mattresses. The suppliers would then send a truck to deliver the mattresses to the warehouse and shop. The owner then calls the suppliers to confirm delivery and pays the truck its percentage of the transport due. (Li. et al 2006)

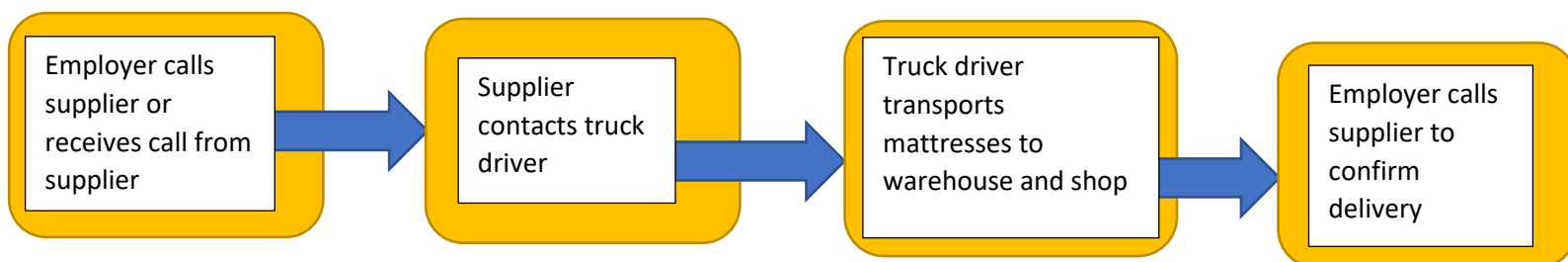
For their relationship with the truck driver, they would assign an employee to call the driver to remind him a day before. The following day, once the driver arrives, he is ready to attend to customers that may need his services and at the end of a working day, he is paid.

If NANAPATT would focus on improving their transportation services, they could also put the effort into monitoring their record keeping. Every employee must be tasked with tracking the movements of inventory. For instance, they could take turns in giving accounts on the inventory and in this way, would be mindful and cautious to avoid any errors. This strategy could be used till they can hire a computer literate and purchase a computer. (Bowersox et al, 2002)

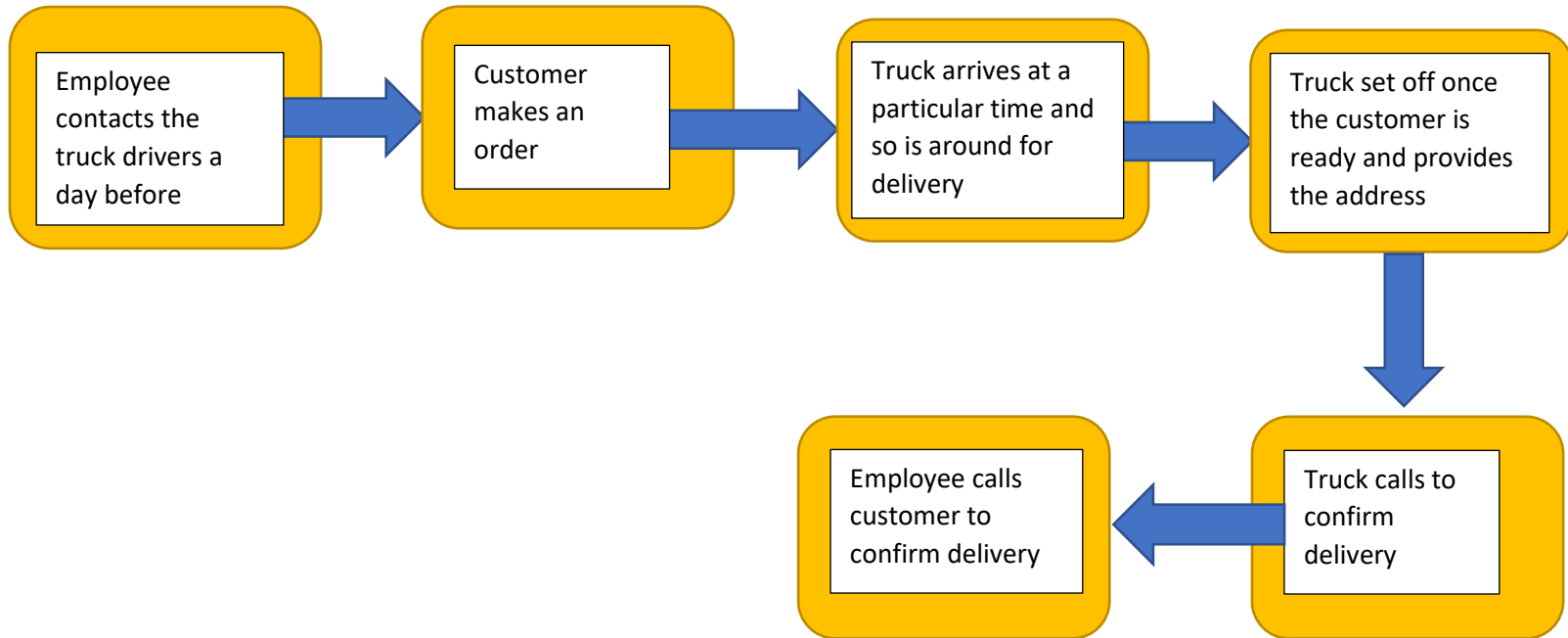
For record-keeping, NANAPATT Mattresses must ensure that daily sales including inventory sold and the ones available in the shop are documented. (Bowersox et al, 2002)

4.8 LOGISTICS FRAMEWORK

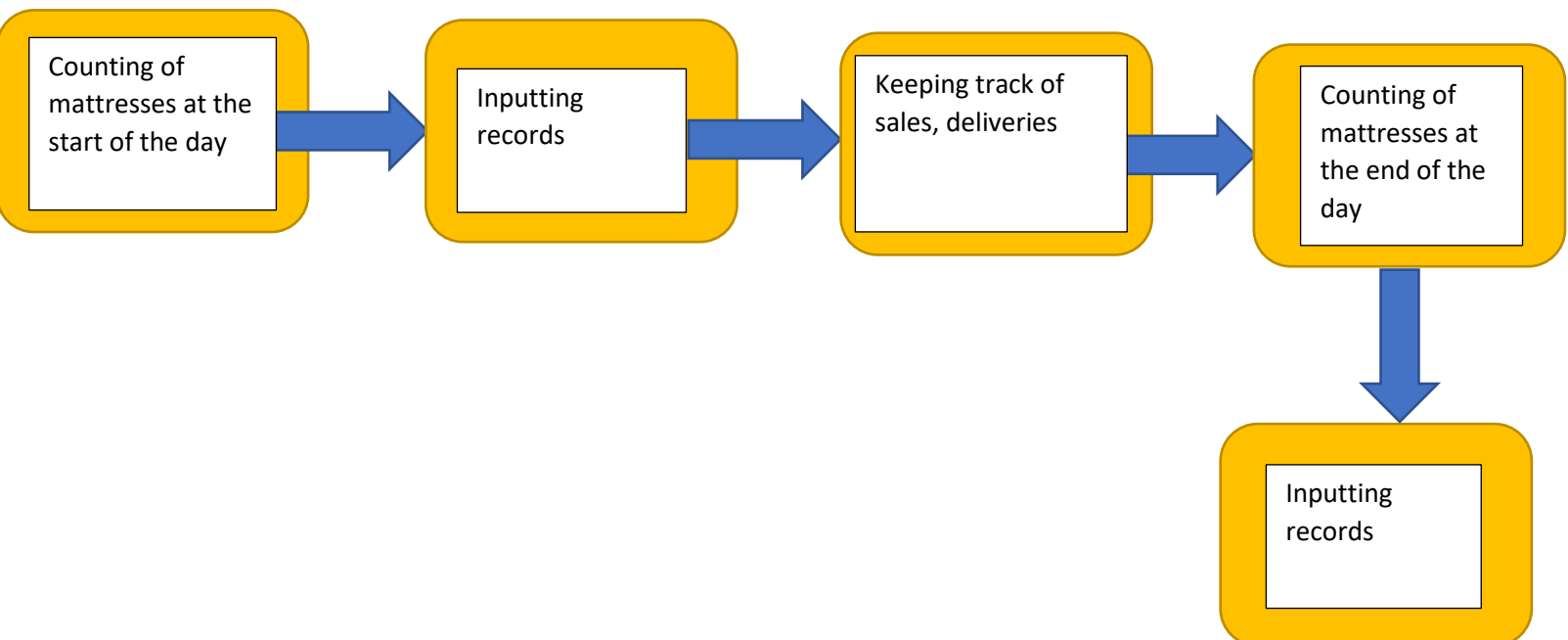
- 4.8.1 Getting the mattresses from the suppliers



- 4.8.2 Delivering mattresses to customers



- 4.8.3 Record keeping



4.9 Implementation Plan

Activity	Person Responsible	When	Details	Frequency	Estimated Costs (GHS)
Employ a computer literate	Owner	May 2021	This person would oversee inputting information such as deliveries to be made, taking stock of inventory and keeping track of dates for arrival of mattresses	Once	GHS 400.00
Purchase a computer and introduce Microsoft dynamics	Owner	May 2021	This would be used to keep records	Once	GHS 2,700.00
Training of employees to understand the framework	Owner	May 2021	To ensure that the logistics framework is successful, employees would be trained to know what	They would be learning on the job	-

			they have to do at every point in time.		
Draw timetable to ensure continuous using of the framework	Owner	May 2021	To ensure that employees are conversant with the logistics framework chain, there would be a timetable so they are all given the opportunity to learn and practice what needs to be done. This would ensure that all employees are active and well-informed on what needs to be done.		-
Calling the truck to remind them a day before of their deliveries	Employee in charge for the week	From June 2021	This would reduce any disappointments on the basis of forgetfulness	The day before	

Calling the truck to ensure delivery has been made	Employee in charge for the week	From June 2021	This would help in the record keeping process concerning deliveries	On the job	GHS 100 (for 0-5 deliveries) GHS 150 (for 6 or more deliveries)
Calling the customer to ensure they have received their delivery	Employee in charge for the week	From June 2021	This would help in the record keeping process concerning deliveries	Daily	-
Record keeping	New computer literate hire	From May 2021	Here, record concerning the number of mattresses in the shops, number of sales made, number of deliveries done and left to be done would be kept.	Daily	-
Communication with suppliers	Owner	From June 2021	This would be to ensure that the suppliers are providing the needed information.	Twice a month for restocking purposes	

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CHAPTER 5: CONCLUSION, LIMITATION AND RECOMMENDATION

5.1 Chapter Overview

This chapter will throw light on the lessons learnt throughout this project, the limitations faced, the relevant changes NANAPATT has to adopt to see the effectiveness of the solution, the likely pitfalls and the recommendations for the business.

5.2 Lessons Learnt from the Project

This project helped identify the differences and points of application of what is taught in class and the working world. In addition to the research, there was a need to go out to survey the business processes and gather information from the stakeholders of the business. The research process and the application of knowledge came together to give me a holistic understanding.

In addition to this, with the help of the feedback from my supervisor, I was able to take into consideration aspects of the working world I would not have been particular about and this aided in my entire project's success.

5.3 Limitations and Challenges

A lot of time was spent in getting the right framework to assist NANAPATT Mattresses, especially since it is a small but growing business.

It was difficult getting information about the mattress industry in Ghana. During the research, it was a bit difficult getting information about the Mattress industry in Ghana.

5.4 Changes to be Adopted

In order to be effective, NANAPATT Mattresses must be consistent with their record keeping and focus on maintaining relationships with their suppliers and third-party delivery personnel to avoid disappointments and delays. Also, they must have a scheduled number of times they restock their shops to avoid huge transport costs. For instance, restocking could be done twice a month.

To be effective, employing the services of a computer literate and purchasing a computer would help in record keeping.

5.5 Pitfalls

There may be instances where in the case of low sales of the delivery services on particular days, they would still have to bear the cost of the trucks.

Another pitfall that may occur is that the company would still have to pay the truck for its services even if their services were not required.

5.6 Recommendations

More attention should be placed on the maintenance of their warehouse and shop. During the interview, customers and employees complained about the heat and dust. They could make provisions to introduce fans in their shops.

Another recommendation is for them to begin saving towards purchasing a van so they can start their own delivery services.

They could put more work in establishing an online presence as this would help them reach a larger customer base.

Lastly, NANAPATT Mattresses could focus on valuing the business by coming up with a financial valuation. This would help in taking decisions concerning the growth of the business.

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Appendix

PESTLE ANALYSIS

Table 1

Factor	Description
Political factors	<ul style="list-style-type: none"> • Cut in import taxes • GHS 2 billion fund to help small and medium sized enterprises
Economic factors	<ul style="list-style-type: none"> • Increase in industry sector contribution in GDP per capita • Increase in active employment in the industry sector
Social factors	<ul style="list-style-type: none"> • The demography and lifestyle of individuals also determines the type of mattress they may purchase
Technological factors	<ul style="list-style-type: none"> • Technology advancements have helped NANAPATT and have made

	<p>transactions quicker and more convenient</p>
Legal factors	<ul style="list-style-type: none"> • To start a business, there are requirements and procedures to be followed as stated in the Constitution of Ghana
Environmental factors	<ul style="list-style-type: none"> • Using more natural materials during the manufacturing or making of mattresses to reduce pollution

SWOT ANALYSIS

Table 2

<p>Strengths</p> <ul style="list-style-type: none"> • Quality mattresses • Knowledgeable and hardworking employees 	<p>Weaknesses</p> <ul style="list-style-type: none"> • High costs • Delays
<p>Opportunities</p> <ul style="list-style-type: none"> • Expanding into other regions • Becoming an importer of foreign mattresses 	<p>Threats</p> <ul style="list-style-type: none"> • High shipment fees • Decrease in demand

PORTER’S FIVE FORCES: Table 3

<p style="text-align: center;"><i>Threat of new entrants</i></p> <ul style="list-style-type: none"> • Threat of new entrants is low due to the many requirements to start a business in Ghana, especially a medium scaled business. 	<p style="text-align: center;"><i>Bargaining power of suppliers</i></p> <ul style="list-style-type: none"> • Bargaining power of suppliers is low since there are more suppliers in the industry (those who deal in the import of foreign mattresses).
<p style="text-align: center;"><i>The power of buyers</i></p> <ul style="list-style-type: none"> • Buyer power is high in companies that locally produce mattresses as compared to companies that deal in the sale of foreign mattresses 	<p style="text-align: center;"><i>Rivalry among existing competitors</i></p> <ul style="list-style-type: none"> • The competitors of NANAPATT Mattresses include companies that locally produce mattresses in Ghana. • Rivalry in the mattress industry stems from quality and affordability.
<p style="text-align: center;"><i>Threat of substitutes</i></p> <ul style="list-style-type: none"> • Substitute goods in the mattress industry that serve the same purpose as mattresses include hammocks, sleeping bags, mats, among others. • However, these substitutes are mostly used temporarily as compared to 	

mattresses and so are low threats in the industry	
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CONSENT FORM

I like to ask your permission to be part of my research which is aimed at improving the logistics process for NANAPATT Mattresses to enhance customer satisfaction and reduce costs. Your participation would be fully kept confidential. You are free to be part of this activity, and you are free to stop at any moment during the activity.

There are no risks involved in engaging in this study. The benefit is that you would be a part in improving processes in the NANAPATT Mattresses business. If you have any questions, you can ask for my contact information from the management of NANAPATT Mattresses or send an email, naneki.berimah@ashesi.edu.gh. If you agree to be a part of this study, you will be engaged in an interview which will span for at most an hour twice a week. For further information, you can contact my supervisor on kjmorris@ashesi.edu.gh.

This study and consent form have been reviewed by Ashesi IRB for Human Subjects Research. For further information, contact the committee through irb@ashesi.edu.gh. This research has been approved by the Ashesi University Human Subjects Review Committee.

SIGNATURE:

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